DOCKETED	
Docket Number:	25-BSTD-03
Project Title:	2028 Energy Code Pre-Rulemaking.
TN #:	273346
Document Title:	Travis Wade Comments - 2028 Code language review and corrections
Description:	N/A
Filer:	System
Organization:	Travis Wade
Submitter Role:	Public
Submission Date:	11/4/2026 10:42:11 AM
Docketed Date:	11/4/2026

Comment Received From: Travis Wade
Submitted On: 11/4/2026
Docket Number: 25-BSTD-03

2028 Code language review and corrections

the 2028 code language has some language and calculation issues that need to be resolved.

Requirements need to be clear enough for a designer to document, a contractor to install, and an enforcement agency to verify. This comment identifies 18 technical and implementation findings, followed by a separate recommendation to require a Certified Energy Analyst for nonresidential performance calculations.

We (the industry and CEC) need to step back at some point and look at how complex your making the codes. To be honest, it's getting out of hand. Simplify everything to get to the nuts and bolts of what's required and what the agenda is that is being pushed forward. There is no way that all these "if-then-and-or" options/exceptions/steps can truly be studied for cost effectiveness. It's imperative you identify your agenda, and make the code easier to implement and subsequently, enforce. EVEN A CEA WILL HAVE A HARD TIME WITH THIS - so do not expect non-CEA's and those "engineers" who don't study the code or do CEU about the code to do the modelling and reporting correctly.

Respectfully,
Travis Wade - Believer of CEAs and Determined Practioner

Additional submitted attachment is included below.

2028 Energy Code compliance enforcement

November 4, 2026
California Energy Commission
Docket 25-BSTD-03 | 2028 Energy Code Pre-Rulemaking

Subject: Practical corrections to the October 12 draft code and reference appendices

Dear Commissioners and Energy Code staff:

Please address the attached enforcement findings before advancing the formal 2028 Energy Code proposal. Requirements need to be clear enough for a designer to document, a contractor to install, and an enforcement agency to verify. This comment identifies 18 technical and implementation findings, followed by a separate recommendation to require a Certified Energy Analyst for nonresidential performance calculations.

The findings are summarized in plain language. Each has a matching numbered appendix with the source location, an explanation of the enforcement problem and a requested correction. The solar and battery appendices also show the source table entries and worked calculations so readers can reproduce the results.

- **Correct conflicting text and calculations.** Resolve the solar sizing units, battery calculation sequence, window-table references, daylight-control sentence and inconsistent equipment thresholds.
- **Connect requirements to evidence.** Identify the plans, calculations, installation records and functional tests that demonstrate compliance. Record information before equipment is removed or work is concealed.
- **Make final approval and oversight clear.** State which commissioning defects require correction, when an exception or deferral is allowed, and how acceptance-testing audits cover completed projects.

Section 100.5 already provides a substantial documentation and inspection framework. These recommendations make that framework easier to apply through clear triggers, consistent calculations and observable results. Existing small-project relief should remain workable, and recommendations for untouched equipment should not automatically become mandatory retrofits.

As an additional policy recommendation, require a current CABEC Nonresidential Certified Energy Analyst to take responsibility for every nonresidential performance compliance calculation, including revised submittals. Appendix 19 identifies possible code locations and illustrative language. My broader preference includes prescriptive compliance documentation; the immediate request here is performance calculations.

Coordinate implementation through the ACM, software and compliance forms. We request that the Commission carry the applicable corrections identified in these comments into the 2028 Alternative Calculation Method (ACM) Reference Manual, approved compliance software and compliance forms. For each affected measure, identify the standard-design assumptions, proposed-design inputs, exception logic, supporting documentation and required field verification. Publish worked examples and software test cases, and provide an opportunity for stakeholder review before approving the corresponding software implementation.

Please publish a response to each numbered finding with the next draft and coordinate the resulting code, appendices, forms, manuals and software. Test the revised instructions on representative permit and construction examples with the people who will prepare, install and verify the work.

Respectfully submitted,
Travis Wade
Wade Energy



Finding summary Solar sizing and lighting controls

These findings concern the October 12, 2026 pre-rulemaking drafts, TN 273088 and TN 273089. They are proposed text, not adopted requirements. The official docket was checked November 4. A number below links to the corresponding appendix; source page references include the docket cover.

01 Convert the solar sizing result from watts to kilowatts

- **Issue.** The roof-area equation produces watts but labels the result as kilowatts. It is missing division by 1,000.
- **CEC action.** Correct the equation and use the same units in the code, forms and software.

Appendix 01

02 Fix the order of the solar and battery calculations

- **Issue.** The solar factor depends on whether a battery is required. The battery exception then depends on the solar calculation. Changing the factor can reverse the exception result.
- **CEC action.** Name the reference table used to test the battery exceptions and state when the final solar factor is selected.

Appendix 02

03 Show which roof areas count toward solar capacity

- **Issue.** A single roof-area total does not show which areas qualify, why others were excluded, or whether construction changes altered shading.
- **CEC action.** Require a labeled roof plan and matching area schedule, then reconcile roof changes before final approval.

Appendix 03

04 Separate the garage lighting reference from the daylight test

- **Issue.** The proposed shutoff sentence combines no daylight with a high daylight condition. A technician cannot apply both conditions at the same time.
- **CEC action.** Measure the electric-light reference without daylight, then apply the daytime shutoff test against that reference.

Appendix 04

05 Define which lighting devices a passing sample represents

- **Issue.** For eligible larger groups, three tested lights may represent many individually configured devices. The draft does not clearly define the group limit or repeated-failure response.
- **CEC action.** Define groups and sample selection, retain failed results, and state when failures require wider correction and testing.

Appendix 05

Finding summary Alterations and ventilation

06 Record the lighting retrofit baseline before removal

- **Issue.** The new limited-size retrofit route requires a wattage reduction. Once the old lights are removed, their wattage and the scope of related phases may be hard to prove.
- **CEC action.** Record counts and existing wattage before removal, define related phases, and provide a simple calculation form.

Appendix 06

07 Define what counts as all of a window type

- **Issue.** Replacing 100 percent of one window type triggers a different route, but the draft does not clearly say whether to count the building, tenant space, elevation or permit phase.
- **CEC action.** Define the counting boundary and related-phase rule, and require an existing and proposed opening schedule.

Appendix 07

08 Send added nonresidential windows to the correct table

- **Issue.** The added-window rule points to the hotel guestroom table, while its exception points to the nonresidential table. Product labels cannot resolve that conflict.
- **CEC action.** Correct the controlling table reference and align the appendix, forms and software lookups.

Appendix 08

09 Resolve rooftop equipment rules before it is ordered

- **Issue.** The body and table disagree at exactly 65,000 and 240,000 Btu/h. The table also adds a building-age limit, and a fan-power reduction lacks a clear baseline.
- **CEC action.** Align capacity and age rules, define the listed equipment options, and state the fan-power comparison basis.

Appendix 09

10 Test minimum ventilation with the controls operating together

- **Issue.** A moving damper or slowing fan does not prove that the building still receives the required outdoor air at low demand.
- **CEC action.** Put the calculated minimum and equipment minimum on the plans, then measure coordinated operation at low and design demand.

Appendix 10

Finding summary System operation and oversight

11 Demonstrate each required fault alarm and data function

- **Issue.** Existing tests do not explicitly demonstrate every expanded fault-detection function. A generic signoff also does not prove six-month data-retention capability.
- **CEC action.** Map each applicable function to a safe test and result, including notifications, data retrieval and owner access.

Appendix 11

12 Specify how hot-water circulation controls pass a startup check

- **Issue.** A periodic pump option has no clear interval or run-duration criterion. Required fault indication does not identify which faults must be detected.
- **CEC action.** Define the allowed sequence and settings, then require a recorded demonstration of the selected option.

Appendix 12

13 Define which commissioning defects must be corrected before final approval

- **Issue.** The draft mixes required corrections, owner-budget limits and future recommendations. A signed report does not tell the inspector which unresolved defects block approval.
- **CEC action.** Classify findings, state any permitted deferral process, and align the applicability table and capacity thresholds.

Appendix 13

14 Show exactly what a prior energy audit exempts

- **Issue.** An audit completed within five years may cover different equipment or conditions. The exception’s placement may also reach separate data-center commissioning.
- **CEC action.** Require the audit and current-system comparison, define equivalence, and preserve separately applicable tests.

Appendix 14

15 Keep acceptance-testing audits tied to technicians and real projects

- **Issue.** The proposed mechanical audit minimum shifts toward employers. Coverage of individual technicians and employers with one to four projects is unclear.
- **CEC action.** Define the eligible population, preserve actual-project coverage, and specify selection, failure follow-up and reporting.

Appendix 15

Finding summary Special systems and analyst qualifications

16 Cover every indoor-growing size and lighting combination

- **Issue.** The small-system route requires both a small canopy and low lighting density; the large-system route requires both to be high. The mixed combinations fall between them.
- **CEC action.** Publish a complete two-axis applicability table and correct the sizing reference to the intended appendix.

Appendix 16

17 State whether replacing an elevator controller triggers energy recovery

- **Issue.** The parent section covers alterations, but the new trigger refers to additions with a new control system. A controller replacement needs a clear applicability decision.
- **CEC action.** Define the covered modernization work, governing thresholds and exception evidence before procurement.

Appendix 17

18 Select the air-barrier verification route before walls are closed

- **Issue.** The main code and the existing visual-verification procedure are not clearly linked. By final inspection, critical joints may already be concealed.
- **CEC action.** Identify the method, verifier and inspection stages on the plans, and retain required pre-concealment records.

Appendix 18

19 Require a certified nonresidential analyst for performance calculations

- **Issue.** The draft recognizes a Certified Energy Analyst for certain design reviews, but does not make that credential a universal requirement for preparing nonresidential performance compliance calculations.
- **CEC action.** Add an explicit performance-author requirement to the compliance-documentation rules, including revisions and credential verification.

Appendix 19

Finding 18 addresses retained air-barrier language. Finding 19 is an additional qualification policy request. The other findings identify proposed changes or their interaction with retained requirements. The scenarios illustrate foreseeable problems; they do not establish measured failure rates.

Appendix 01 Convert the solar sizing result from watts to kilowatts

Correct the draft | New equation

Code §701.3.3.2, Equation 701.3-B, printed 7-10 / PDF 827; selection rule §701.3.3, printed 7-7 / PDF 824.

Photovoltaic (PV) capacity describes the rated power of the solar system. Solar access roof area (SARA) is the qualifying roof area used in this calculation. A kilowatt (kW) equals 1,000 watts (W).

701.3.3.2 *[New Section]* **SARA-Based Photovoltaic Capacity**

The PV capacity shall be determined by Equation 701.3-B *[NEW EQUATION].*

PHOTOVOLTAIC DIRECT CURRENT CAPACITY, SARA-BASED –(EQUATION 701.3-B) [NEW EQUATION]

$kW_{PVdc,\ SARA} = SARA \times S$

where:

$kW_{PVdc,\ SARA}$	=	SARA-based minimum rated PV system capacity in kW.
SARA	=	The *SARA* in square feet as determined in Section 701.3.2.
S	=	18 W/square foot for *steep-sloped roofs* or 14 W/square foot for *low-sloped roofs*.

Source excerpt from TN 273088, physical PDF page 827, printed page 7-10. Original draft markup is retained. Open source page

The correction in one example

Step	Result
Qualifying low-slope roof area	1,000 ft²
Draft factor	14 W/ft²
Multiply	1,000 × 14 = 14,000 W
Convert to the stated output unit	14,000 ÷ 1,000 = 14 kW

- **Requested correction.** For one roof category, divide SARA × S by 1,000. For mixed slopes, add the correctly converted capacity for each qualifying area, subject to CEC confirmation of allocation and rounding.

$$kW = (SARA_1 \times S_1 + SARA_2 \times S_2 + \ldots) / 1{,}000$$

Enforcement consequence. The smaller-of-use-designation-and-SARA rule remains. Consequently, this does not mean every project installs 1,000 times the PV; it can instead prevent the SARA constraint from controlling and affect related BESS calculations.

Permit and final record. At permit review, the responsible designer provides roof areas, slope factors, both capacity branches and the selected result. The enforcement agency checks the calculation; the final record reconciles roof changes and installed capacity.

Appendix 02 Fix the order of the solar and battery calculations

Correct the draft | New table interaction with retained exception

Code §§701.3.3.1.3–.4, 701.3.4 Exception 3 and 701.3.5, printed 7-9 and 7-11–7-15 / PDF 826, 828–832; factor table, printed 7-17 / PDF 834.

Battery energy storage system (BESS) means the project battery. The draft provides two solar factors for the same building: one with a required battery and one without. The 15 percent exception needs a stable reference calculation.

Where the numbers come from

Use an illustrative 200,000 ft² office in climate zone 1. Assume its qualifying roof area limits installed solar capacity to 132 kW, with no other exception. The factors 4.78 and 4.14 come from the draft tables. The values 956 kW and 828 kW are calculated results, not constants printed in those tables.

Calculation step	Battery required table	Battery not required table
Source factor A	Table 701.3-(1) 4.78 W/ft²	Table 701.3-(2) 4.14 W/ft²
Office floor area × factor ÷ 1,000	200,000 × 4.78 ÷ 1,000 = 956 kW	200,000 × 4.14 ÷ 1,000 = 828 kW
Installed solar ÷ calculated reference	132 ÷ 956 = 13.81%	132 ÷ 828 = 15.94%
Below the 15% exception threshold	Yes	No

Why the answer can reverse

- **Start with the battery-required table.** The roof-limited solar system is below 15 percent of the 956 kW reference. That appears to allow the battery exception.
- **Then switch to the no-battery table.** The same solar system is above 15 percent of the 828 kW reference. Retesting the exception would reverse the result.

The draft must specify which table supplies the fixed reference for the exception and whether later table selection changes that reference. This example demonstrates the ambiguity; it does not choose the intended policy outcome.

Requested calculation sequence

1. CEC identifies the reference table to use for battery eligibility and explains the policy choice.

2. Calculate that reference and apply the listed battery exceptions, including the usable-energy threshold at a specified step.

3. Choose the final solar factor from the resulting battery status. State expressly whether that choice reopens any exception test.

4. Retain both calculations and the selected result. Recalculate affected inputs when roof geometry or equipment changes.

Equation 701.3-A is on PDF 825; factor-selection provisions on PDF 826; the 15 percent exception on PDF 830. The next page shows the actual table entries and checks the separate battery-capacity exception.

Appendix 02 Source tables and battery capacity check

These are cropped images of the original draft tables. The office row and climate zone 1 column are visible; other columns and most rows are omitted. The table captions below identify the source and units. These are code-table excerpts, not software output.

Table 701.3-(1)
PV with required BESS
W/ft²

USE DESIGNATION	CZ 1
Exhibits And Events	2.12
Library	2.23
Office, Financial Institution, Medical/Clinic Office, Unleased *Tenant Space*	4.78

Table 701.3-(2)
PV without required BESS
W/ft²

USE DESIGNATION	CZ 1
Exhibits And Events	1.68
Library	1.92
Office, Financial Institution, Medical/Clinic Office, Unleased *Tenant Space*	4.14

Table 701.3-(3)
BESS capacity
Wh/ft²

USE DESIGNATION	CZ 1
Exhibits And Events	1.83
Library	1.39
Office, Financial Institution, Medical/Clinic Office, Unleased *Tenant Space*	2.14

TN 273088 source pages: 828 / printed 7-11 829 / printed 7-12 834 / printed 7-17

Check the separate 30 kWh exception

A kilowatt-hour (kWh) measures stored energy; it differs from the kW solar power rating. For this example, use battery factor B = 2.14 Wh/ft² from Table 701.3-(3), and assume 90 percent round-trip efficiency, C = 0.90. The efficiency is an example input, not a table constant.

Step	Calculation and result
Use-based battery energy Equation 701.3-C	(200,000 × 2.14) ÷ (1,000 × √0.90) = 451.15 kWh
Roof-area adjustment Equation 701.3-D	451.15 × (132 ÷ 956) = 62.29 kWh
Separate energy exception	62.29 kWh is above the proposed 30 kWh threshold.

This uses the battery-required table as an illustrative first branch. It shows that the 30 kWh exception does not remove the 15 percent ambiguity in this example. The 132 kW roof limit assumes the unit correction in Appendix 01. The calculation sequence and reference table still require a CEC decision.

Battery equations and exception: TN 273088 PDF 831–832, printed 7-14–7-15. The draft changes the usable-energy threshold from 10 to 30 kWh. Open equations

Evidence needed for review

The compliance worksheet should show conditioned floor area by use, climate zone, table and factor, roof-based solar capacity, installed solar capacity, efficiency, each exception tested and the final decision. A reviewer should reproduce the result without reverse-engineering software assumptions.

Appendix 03 Show which roof areas count toward solar capacity

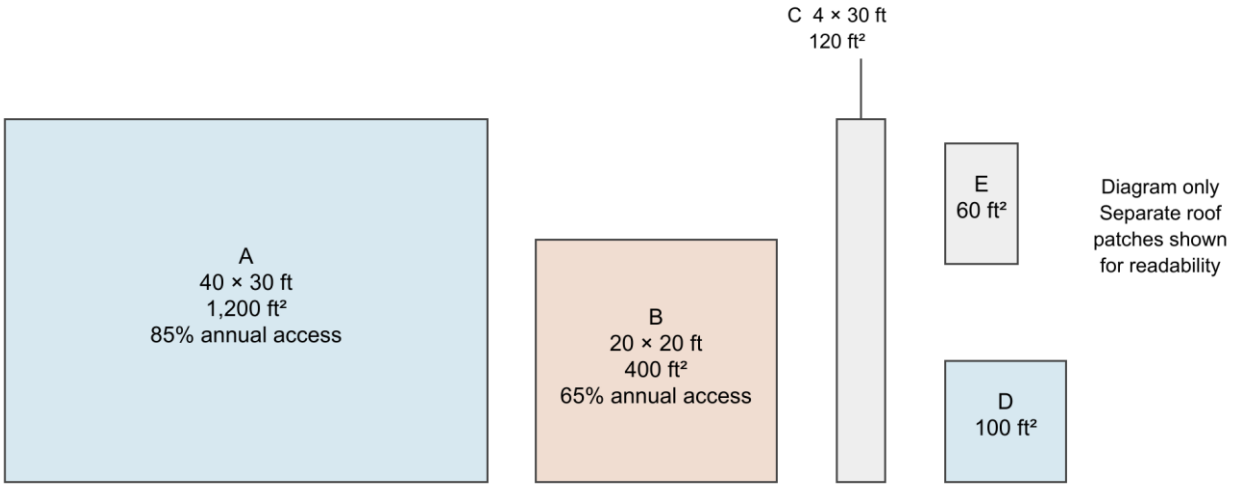
Clarify implementation | Changed geometry and shading provisions

Code §701.3.2, printed 7-7 / PDF 824; §§701.3.3.1.2 and 701.3.3.2, printed 7-8 and 7-10 / PDF 825, 827.

Solar access roof area (SARA) is the qualifying roof area used in the solar sizing calculation. Annual solar access compares sunlight reaching an area with the sunlight it would receive without shading. A 70 percent result means 70 percent of that unshaded annual solar energy remains.

Illustrative roof-area review

Assume the patches below are structurally compatible, low-sloped roof areas; no other exclusions apply. Annual solar-access percentages are assumed for teaching and are not a shading-model result. Patches C, D and E each have 90 percent annual access.



Schematic only. The spacing between patches is for readability and is not part of the roof-area calculation.

Patch	Area	Include in SARA	Reason under the proposed conditions
A	1,200 ft²	Yes	85% access; sufficient contiguous area and dimensions
B	400 ft²	No	65% access is below 70%
C	120 ft²	No	4 ft width is below the 5 ft minimum outside Group R
D	100 ft²	Yes	10 × 10 ft; 90% access
E	60 ft²	No	Less than 80 contiguous ft²

The qualifying total is 1,200 + 100 = 1,300 ft². With the corrected low-slope conversion, the roof-based capacity is 1,300 × 14 ÷ 1,000 = 18.2 kW. The final required solar capacity still depends on the other calculation branch and applicable exceptions.

What can change during construction

If a relocated rooftop unit shades Patch D enough to lower its annual access below 70 percent, the approved area schedule must be revisited. The inspector needs the patch identity, obstruction dimensions and revised calculation, rather than just a new total. The revised roof basis must then be coordinated with solar and battery requirements.

Appendix 03 Source conditions and verification record

1. ~~Any~~*Roof* area that has ~~less than~~ 70 percent annual solar access or more. Annual solar access is determined by dividing the total annual solar insolation (accounting for *shading* obstructions) by the total annual solar insolation if the same areas were unshaded by those obstructions. For all *roofs*, all obstructions, including those that are external to the *building*, and obstructions that are part of the *building* design and elevation features shall ~~may~~ be considered for the annual solar access calculations.
2. ~~Occupied roofs as specified by CBC Section 503.1.4.~~ *Roof* area compatible with supporting a PV system as specified by Title 24, Part 2, Section 1511.10.
3. ~~Roof area that is otherwise not available due to compliance with other state building code requirements, or local building code requirements if the local building code requirements are confirmed by the Executive Director.~~ *Roof* areas ~~withno s~~ ~~less than~~ that are no less than 80 contiguous square feet each. For *use designations* other than *Group R occupancies*, those *roof* areas shall also have no plan dimension less than five feet.

Original draft excerpt, TN 273088 PDF 824, printed 7-7. Underlines and deletions are retained. Open complete source and exceptions

Apply all conditions and exceptions

The proposed conditions include at least 70 percent annual solar access, compatibility with supporting solar equipment, at least 80 contiguous square feet, and no plan dimension below five feet for use designations other than Group R. Consider all shading obstructions, including off-building obstructions and the building's own features.

The complete section also excludes occupiable roofs and addresses roof area unavailable because of other building-code requirements, with Executive Director confirmation for the local-code basis described in the exception. These exceptions must be documented; the schematic on the prior page assumes none applies.

Requested project record

- **At permit review.** Label each included and excluded patch. Record area, dimensions, roof slope, annual solar access, obstruction geometry, calculation method and exclusion authority. Identify the model or calculation revision.
- **Before rooftop installation.** Coordinate equipment, parapets, roof uses and access areas against that approved schedule. Report changes that could alter the calculation.
- **At final approval.** Reconcile the installed roof arrangement with the latest approved area and solar/battery decision record. Retain supporting calculations and required confirmations.

Existing safeguard. The draft already defines solar access, contiguous area, structural compatibility and exclusions. Section 100.5 already requires coordinated plans and amended documents when changes threaten compliance. This request makes that existing duty practical; it does not assert that evidence cannot be required today.

CEC should provide a reproducible calculation method and examples without requiring a proprietary product. The schedule is the bridge between the model, the approved plans and the roof an inspector can observe.

Appendix 04 Separate the garage lighting reference from the daylight test

Correct the draft | Proposed replacement sentence

Code §601.2.2.4.3 item 4, printed 6-22 / PDF 703. Appendices NA7.6.1.4(b)–(c) and NA7.6.1.5(b)–(c), printed NA7-41 and NA7-43 / PDF 564, 566.

Daylight controls reduce electric lighting when daylight is sufficient. The electric-only light level is the comparison baseline; it is measured under a different condition from the daytime shutoff test.

Draft excerpt. “Reduce controlled lighting power in the combined primary and secondary sidelit daylit zones by 100 percent when no daylight is available and daylight illuminance measured at the farthest edge of the secondary sidelit zone from the glazing or opening are greater than 150 percent of the illuminance provided by the controlled lighting; and”

Proposed replacement sentence, §601.2.2.4.3 item 4. The no-daylight condition is attached to the daytime shutoff instruction.

Practical enforcement problem

Illustration: if the electric-only reference is 100 lux, the daytime comparison is against 150 lux. The two readings describe separate test conditions; the proposed wording merges them.

Requested correction

Suggested replacement: For parking garages, when daylight illuminance measured at the farthest edge of the secondary sidelit zone away from the glazing or opening exceeds 150% of the reference illuminance provided by the controlled lighting alone when no daylight is available, the controlled lighting power in the combined primary and secondary sidelit daylit zones shall be reduced by 100%. Align terminology with NA7 and remove the empty following item.

Existing safeguards to preserve

NA7 already distinguishes the electric-light reference measured without daylight from the daylight test and requires 100% reduction for the applicable garage lighting. The needed test exists. This issue concerns the general sidelit garage provision, not the separate daylight-adaptation lighting allowance.

Who verifies what

CEC coordinates the corrected sentence with forms and test instructions. At acceptance, the technician records the reference location, electric-only reference, daylight condition and achieved lighting reduction using the existing procedure.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 05 Define which lighting devices a passing sample represents

Clarify the requirement | New individually controlled LLLC sampling

Appendices NA7.6.1.2, printed NA7-39–40 / PDF 562–563; NA7.6.2.1–.2, printed NA7-45–46 / PDF 568–569; general responsibilities NA7.3 / PDF 525.

Luminaire-level lighting controls (LLLC) place control functions at individual light fixtures. A sample can represent other fixtures only if the group and relevant settings are known. Small installations still require all applicable devices to be tested.

Practical enforcement problem

Illustration: three passing fixtures near one window do not establish that fixtures with another sensor setting or glazing orientation behave the same way. Group membership and configuration must be recorded before selecting the sample.

For eligible larger groups, the new individually controlled luminaire-level lighting control (LLLC) path permits all similar luminaires in a group, tests a minimum of three, and adds two after a failure while repairing and retesting until passing. It does not state a maximum group size, reproducible selection method or repeated-failure threshold for group-wide investigation. Hundreds of individually configured devices could be represented by three accessible samples while different settings remain untested.

Requested correction

Require a pretest roster with device IDs, sensor models, configurations, mounting/geometry and glazing orientation where relevant. Specify permissible grouping, a justified maximum size or test fraction, and representative selection. A failure should trigger review of devices sharing its configuration; repeated or common defects should trigger group-wide correction and expanded verification. Retain original failures and state when the whole group passes. Staff should establish the numeric sampling rate using field evidence.

Existing safeguards to preserve

Construction inspection, functional testing and signatures remain. Other connected/non-LLLC sampling provisions use defined groups and expanded testing after failures. The concern is the new path's coverage and group disposition, not the absence of testing.

Who verifies what

The lighting acceptance technician records the roster, selected devices, original/retest results and final disposition before occupancy. The installer supplies settings; the enforcement agency receives the group totals and audit-ready location map with the certificate.

Sources above identify the complete sections and related procedures. Reference Appendices

Appendix 06 Record the lighting retrofit baseline before removal

Clarify the requirement | New 3000 W route with retained small-work exemptions

Code §601.5.2.2.4 item 3 and Exceptions 4–6, printed 6-91–6-92 / PDF 772–773; control table, printed 6-93–6-94 / PDF 774–775.

The new one-for-one lighting alteration route is for nonresidential buildings excluding Group R. It combines a 3,000 W project limit with at least 40 percent reduction. Existing small-work exceptions remain separate.

Practical enforcement problem

Illustration: 50 fixtures at 100 W total 5,000 W before alteration. Replacing them with 50 fixtures at 60 W gives 3,000 W and a 40 percent reduction. The arithmetic is verifiable only if counts and both input wattages are supported. Other controls and eligibility conditions still apply.

Requested correction

Define aggregation of phases of the same contracted or planned alteration and clarify that the 3,000 W limit uses post-alteration input power. Before removal, require a location/count schedule and supported existing/proposed wattage calculation. Allow photographs, manufacturer data or a prescribed conservative baseline when labels are unavailable. Identify related phases and prior work relevant to an annual exemption. Provide one simplified form recording the selected route, applicable exemptions and preserved controls.

Existing safeguards to preserve

Controls, the reduction criterion and general documentation duties remain. The 50-luminaire annual exemption and acceptance-test exemption for controls added to 20 or fewer luminaires are carried forward; they are not new 2028 exemptions. The solution should respect intentionally simplified small-project treatment.

Who verifies what

Owner/contractor documents scope and baseline at permit intake or before removal. The responsible designer or installer certifies the calculation. Final inspection compares installed equipment, control functions and the applicable acceptance-test scope.

Sources above identify the complete sections and related procedures. Draft code

Appendix 07 Define what counts as all of a window type

Clarify the requirement | New alteration trigger

Code §§301.5.2.2.2.1–.2, printed 3-57–3-58 / PDF 364–365; fenestration area definition, printed 2-28 / PDF 259.

Fenestration means windows, glazed doors, storefront and other glazed assemblies. The draft separates complete replacement of a listed type from partial replacement. The percentage depends on both the replaced area and the area being counted.

Draft excerpt. “Vertical fenestration alteration replacing one hundred percent of any single fenestration type”

Opening of §301.5.2.2.2.1; the listed types are fixed, operable windows, storefront, curtainwall and glazed doors.

Practical enforcement problem

Illustration: a tenant replaces its entire 400 ft² storefront in a building with 2,000 ft² of storefront. That is 100 percent of the tenant storefront, but 20 percent of the building storefront. Staff must specify the intended denominator.

Requested correction

Define the geographic boundary, area calculation, product-type classification, mixed-use treatment and related-phase treatment. Suggested direction: Calculate replacement percentage by rough-opening area for each listed type within the defined building scope; identify existing, retained and replaced area and all phases of the same proposed alteration. Staff should choose the intended scope and any aggregation period explicitly rather than leaving it to local inference.

Existing safeguards to preserve

The small-area exception expressly references the entire building and removes only relative solar heat gain coefficient (RSHGC) and visible-transmittance requirements, not U-factor. Section 201 defines rough-opening area, and coordinated plans are already required. These safeguards do not clearly establish the new percentage boundary or phased-work rule.

Who verifies what

The designer submits an opening/elevation schedule with areas, retained units and phase boundaries. Plan review selects the applicable path. Product substitutions and the installed opening schedule are reconciled before installation and final approval.

Sources above identify the complete sections and related procedures. Draft code

Appendix 08 Send added nonresidential windows to the correct table

Correct the draft | New nonresidential split with inconsistent references

Code §301.5.2.2.2.3, printed 3-57 / PDF 364; Tables 301.3(3) and (4), printed 3-36 and 3-42–3-43 / PDF 343, 349–350. Appendices NA6 scope / PDF 518 (draft header NA66-1).

A table supplies the permitted window performance limits. The reviewer must know which table applies before comparing a product's U-factor, relative solar heat gain coefficient (RSHGC) and visible transmittance (VT).

Draft excerpt. "Added vertical fenestration alterations shall meet the requirements in Table 301.3(4) in Section 301.3.9."

§301.5.2.2.2.3, proposed added-fenestration sentence.

Location	Table named	Scope conflict
Added-window sentence	301.3(4)	Hotel/motel guestroom table
Small-area exception	301.3(3)	Nonresidential table

Practical enforcement problem

Illustration: a designer adds a fixed window to an office and follows the cited table. A plan checker instead follows the nonresidential table named in the exception. The code should give both people the same lookup.

Requested correction

Replace the added-fenestration reference with the intended nonresidential table, apparently 301.3(3), and explicitly identify special categories needing another table. Align the small-area exception. Update NA6 to the applicable §301.5.2.2.2 route rather than only the legacy Table 141.0-A. Validate every corresponding form/software lookup using a fixed-window addition and a site-built alteration example.

Existing safeguards to preserve

Fenestration labels, product certificates and NA6 center-of-glass evidence identify product performance. They cannot resolve which conflicting threshold applies. The issue is the controlling reference, not a lack of product certification.

Who verifies what

CEC main-code and appendix editors resolve the crosswalk before the formal draft. Software/form developers use the same limits. The plan reviewer then compares certified product values with a single, unambiguous applicable table.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 09 Resolve rooftop equipment rules before it is ordered

Correct and clarify the draft | New rooftop equipment pathway

Code §401.5.2.2.1.2 item 2, printed 4-139 / PDF 556; Table 401.5(3) and footnotes, printed 4-142–4-143 / PDF 559–560.

The proposed route determines eligible replacement rooftop heating and cooling equipment. Btu/h is rated heating or cooling capacity; the comparison here is rated cooling capacity. These decisions affect equipment procurement.

Boundary	Body text on PDF 556	Table caption on PDF 559
Exactly 65,000 Btu/h	Included	Excluded
Exactly 240,000 Btu/h	Excluded	Included
Building age	No vintage limit in item 2	Constructed before 2006

Practical enforcement problem

Illustration: an exact 65,000 Btu/h replacement enters the body's new route but falls outside the table caption. At 240,000 Btu/h the result reverses. A contractor should not have to purchase equipment before those boundaries are resolved.

Additional coordination is needed beyond the endpoints above. A listed climate-zone-16 option is absent from the displayed legend. The alternative gas/air-conditioning package calls for a 15 percent fan-power reduction without clearly fixing the comparison baseline. The body and table also need consistent building-age applicability.

Requested correction

Use identical capacity endpoints and explicit vintage applicability in the body and table; define all equipment acronyms and the path outside the table's scope. Specify the fan-power baseline, measurement/selection operating point and interaction with allowances. Record the resulting maximum W or W/cfm, airflow and external static pressure. Staff should confirm intended boundaries rather than silently selecting one conflicting version.

Existing safeguards to preserve

A performance path exists. The electrical-capacity exception already requires an Article 220 load calculation with the permit application. Mandatory equipment and acceptance requirements remain. Those safeguards do not reconcile table boundaries, vintage or the fan-power target.

Who verifies what

The designer's permit schedule identifies the selected path, climate zone, vintage and rated capacity. Supplier and contractor match the approved selection or obtain a revised approval. The acceptance record ties the installed model and applicable performance to that schedule.

Sources above identify the complete sections and related procedures. Draft code

Appendix 10 Test minimum ventilation with the controls operating together

Clarify the acceptance test | New DCV and DOAS modulation requirements

Code §401.2.1.2.3.2 and Equation 401.2-D, printed 4-64–4-65 / PDF 481–482; §401.2.7 / PDF 508–509. Appendices NA7.5.1, .5 and .6, printed NA7-12–13 and NA7-21–22 / PDF 535–536, 544–545.

Demand-controlled ventilation (DCV) reduces outdoor airflow as demand falls. A dedicated outdoor-air system (DOAS) may serve both DCV rooms and rooms with fixed exhaust needs. The greater-of comparison in the draft governs outdoor airflow; it is not a separate identical minimum for every exhaust stream.

Practical enforcement problem

Illustration using assumed inputs: DCV area minimums total 300 cfm; another room requires the larger of 200 cfm exhaust and 150 cfm ventilation. The system minimum is 500 cfm. If the equipment floor is 600 cfm, 600 cfm controls. Verify applicable exhaust separately as part of the coordinated sequence.

Requested correction

Show design airflow, each term of Equation 401.2-D, manufacturer minimum and controlling floor on the plans and test record. Add a combined sequence for low and design demand that measures outdoor supply and applicable exhaust, including mixed DCV/non-DCV spaces. Specify measurement tolerances centrally. Record the approved values, measured flows, control response and restoration of normal operation.

Existing safeguards to preserve

NA7 already includes outdoor-air measurements, simulated CO_2 response and variable-fan tests. The request is to coordinate them with the new calculation and equipment floor, not add duplicate tests. The DCV procedure still focuses primarily on damper response.

Who verifies what

Mechanical designer calculates the minimum; testing/adjusting/balancing personnel record flows; controls installer sets the floor; the acceptance technician verifies coordinated response. Final review compares results with the approved airflow schedule.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 11 Demonstrate each required fault alarm and data function

Clarify the acceptance test | Expanded FDD functions with existing test framework

Code §401.2.2.10 and FDD table, printed 4-79–4-80 / PDF 496–497; §401.2.7.12, printed 4-92 / PDF 509. Appendices NA7.5.12, printed NA7-26–30 / PDF 549–553.

Fault detection and diagnostics (FDD) identifies abnormal operation and tells someone what equipment needs attention. The proposed rule adds functions beyond the existing economizer and terminal tests. Applicability depends on the draft table; Group R systems are excepted.

Draft excerpt. "Trend system performance data at least once every 15 minutes or as event based and store data for a minimum of six months."

§401.2.2.10 item 6, PDF 497.

Practical enforcement problem

Illustration: a safe simulated after-hours operating fault should identify the affected unit, produce the expected diagnosis and reach the designated recipient. At startup, verify storage settings and retrieval; six months of elapsed operation should not be necessary to issue final approval.

The expanded functions include operation outside schedules or permitted overrides, leaking or inoperable heating and cooling valves, inoperable terminal dampers, zone temperature sensor faults, and fan commands at 100 percent or in manual override. The test schedule should map these applicable functions to diagnosis, notification and stored data.

Requested correction

Add a requirement-to-test schedule identifying each applicable fault, safe simulation, delay, expected diagnosis, recipient and pass/fail condition. Verify a recorded event, configured interval/event logic, storage capacity and retention policy, retrieval/export and owner access. Do not require waiting six months for occupancy. Document equipment IDs, expected/actual results and removal of test overrides.

Existing safeguards to preserve

The code expressly invokes NA7.5.12, which already tests several sensor, economizer, valve and terminal faults and includes terminal sampling. General acceptance certification and owner documentation apply. The gap is alignment with the newly expanded functions.

Who verifies what

Controls designer specifies points and sequences; installer enables them; the mechanical acceptance technician demonstrates the applicable functions. Owner turnover includes access and notification recipients. Final review checks the completed test schedule and certificates.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 12 Specify how hot-water circulation controls pass a startup check

Clarify the requirement | New nonresidential prescriptive provision

Code §§501.3.4.1–.3, printed 5-13 / PDF 662; related split heat-pump water-heater provisions §501.3.5, printed 5-14 / PDF 663.

A recirculation pump returns hot water through dedicated piping. Section 501.3.4 is a proposed prescriptive requirement and expressly excepts Group R. Some branches already contain temperature limits; the request concerns the missing operating and fault criteria.

Draft excerpt. “pump control shall periodically activate the pump at set intervals to reheat the recirculation system.”

§501.3.4.2 item 2, multi-loop or multi-riser option.

Practical enforcement problem

Illustration: two timers can both be called periodic while running the pump for very different durations. An inspector needs the approved interval, termination logic and applicable fault demonstration to distinguish compliant operation from a label on a controller.

Requested correction

Require a sequence identifying the chosen option, sensors/valves, timer and termination settings, applicable temperature exception, fault conditions and recipient. Establish the allowed control performance in the code or a referenced procedure. Add a startup demonstration of applicable demand/timer/temperature-pressure operation, fault indication and restoration after power loss. Coordinate criteria with plumbing requirements for water hygiene and scald protection.

Existing safeguards to preserve

The section already contains numerical limits for specified branches and power-loss behavior. General installation documentation applies; related split heat-pump water-heater provisions include manufacturer instructions and, for qualifying arrangements, JA14 startup records. This is a prescriptive provision, with Group R expressly excepted; it should not be described as universal across compliance paths.

Who verifies what

Plumbing designer states the sequence and justified settings. Installer/startup technician records actual settings and results; owner receives the operating information. The enforcement agency verifies the selected option and completed installation record.

Sources above identify the complete sections and related procedures. Draft code

Appendix 13 Define which commissioning defects must be corrected before final approval

Clarify the requirement | New existing building commissioning program

Code §§1001.5.2.1.1.1–.3 and Table 1001.5(1), printed 10-9–10-14 / PDF 940–945; triggers / PDF 562–563; applicability table / PDF 131. Appendices NA9.4.2, NA9.6.7 and NA9.8 / PDF 651–652, 655, 657.

Existing building commissioning (EBCx) checks how existing systems operate when specified alterations trigger the program. It may identify both required corrections and optional improvements. The closeout record must distinguish them.

Practical enforcement problem

Illustration: the report identifies an incorrect operating schedule and recommends replacing an old chiller. The code should say which action is required now, which is voluntary, and whether a particular unresolved condition prevents final approval. These are different decisions.

Existing building commissioning (EBCx) requires a report before final inspection, but mandatory restoration actions coexist with attempted correction, owner-budget limits and future recommendations. NA9 says deferred deficiencies remain unresolved for compliance, yet its completion criteria include documenting them for owner action. Reviewers may disagree on whether a deferred control defect blocks final approval. The general applicability table also says additions/alterations are not applicable for commissioning despite the new §1001.5 requirements.

Requested correction

Distinguish noncompliance in permitted work, required EBCx corrections and voluntary improvements. Define what blocks final approval and any expressly authorized deferral procedure, approval and completion evidence. Resolve how owner budget affects otherwise mandatory actions. Correct the applicability table and reconcile code thresholds of 150/300 kBtu/h and larger with NA9's greater-than thresholds.

Existing safeguards to preserve

NA9 already requires inventories, tests, issue/resolution records, before/after settings and owner handoff. It excludes prescribed capital replacement and major redesign. The remedy should not turn every recommended improvement to untouched equipment into a mandatory retrofit.

Who verifies what

Identify affected systems at permit review. The EBCx agent records each requirement, equipment ID, correction/test or authorized deferral; the owner acknowledges receipt. The enforcement agency determines final compliance from those classifications, not merely the presence of an owner signature.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 14 Show exactly what a prior energy audit exempts

Clarify the requirement | New prior audit exception

Code §1001.5.2 Exception 2, printed 10-9 / PDF 940; separate data-center alteration commissioning §1001.5.2.1.2, printed 10-14 / PDF 945. Appendices NA9 / PDF 650–657.

The draft accepts an ASHRAE Level 1 or higher audit, or an audit of comparable scope, within five years. An energy audit and a commissioning process can have different purposes. Staff should state the substitution it intends.

Draft excerpt. “within the previous five years”

Time window in Exception 2 to §1001.5.2. Eligibility also depends on the audit type/scope and the referenced EBCx trigger.

Practical enforcement problem

Illustration: a four-year-old audit covered controls that were subsequently replaced. The date alone cannot show whether the present systems and work are within the accepted exception. Review the report and intervening changes.

Requested correction

Place the exception against the intended EBCx subsection and expressly preserve separately applicable acceptance tests and data-center commissioning. Require the dated report, systems covered, qualifying level/equivalence basis and material changes since completion. If the intent is an audit substitute rather than equivalent commissioning, state that policy directly. Record the enforcement agency's eligibility determination before permit issuance.

Existing safeguards to preserve

The draft supplies an audit level and time window. This review does not assert that all Level 1 audits lack particular activities; the actual report and intended policy must be evaluated. Separate equipment acceptance requirements already exist.

Who verifies what

Applicant provides the report and system crosswalk; owner/designer identifies intervening changes. Plan review retains the accepted basis and clearly lists the tests and commissioning obligations that remain for the permitted project.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 15 Keep acceptance-testing audits tied to technicians and real projects

Review the proposed policy | Reduced and redefined mechanical audit coverage

Code §103.2.3 items 3.6.2–3.6.3.2, printed 1-59 / PDF 185; retained safeguards and reporting, printed 1-58 and 1-61–1-62 / PDF 184, 187–188. Lighting comparison only: PDF 175.

An acceptance test technician (ATT) performs tests. An acceptance test employer (ATE) employs technicians. The certification provider (ATTCP) oversees their work. Sampling employers does not automatically sample every technician.

Practical enforcement problem

Illustration: with 100 active employers, the training-facility minimum could select five employers and one technician from each. Even if every selected technician passes, that does not demonstrate the work of every other technician or verify an installed project.

The mechanical desk-audit minimum changes to one project per employer per cycle, with a five-project sentence leaving employers with one to four projects unclear. The site-audit minimum also becomes one project per employer. The facility alternative uses at least 5 percent of active employers, rounded up, and removes explicit separation from recertification.

Requested correction

Explicitly include low-volume employers, define active populations and projects, and retain measurable coverage by technician, test type and project volume. Preserve an actual-project audit component and the separation from recertification. Specify selection, rotation, failure escalation and correction closure. Set the numeric rate after capacity review, and require annual denominators and results so CEC can evaluate coverage.

Existing safeguards to preserve

Program oversight still includes site visits, complaints, decertification, records and annual reporting. Facility audits already existed; the new concern is reduced coverage and removed safeguards. Passing a training exercise does not by itself establish that installed-project tests were performed correctly.

Who verifies what

CEC approves measurable program criteria. Providers retain employer/technician populations, permit IDs, selected tests, site-versus-facility counts, failures and corrected project records. Employer-level sampling should not be treated as evidence covering every employee.

Sources above identify the complete sections and related procedures. Draft code

Appendix 16 Cover every indoor-growing size and lighting combination

Correct and clarify the draft | New controlled environment horticulture requirements

Code §§908.1.1 and 908.1.6.2, printed 9-37 and 9-40–9-41 / PDF 902, 905–906. Appendices NA7.21.3 / PDF 629–633; NA9 scope / PDF 650.

Controlled environment horticulture (CEH) uses lighting and mechanical equipment for plant production. Canopy area and lighting watts per square foot are separate variables. Both must be considered before selecting the equipment and sizing route.

Total canopy area	Lighting below 30 W/ft²	Lighting at least 30 W/ft²
Below 5,000 ft²	Small-system route	Specific route unclear
At least 5,000 ft²	Specific route unclear	Large-system route

Analytical comparison of the two draft triggers, not a proposed replacement table. General requirements remain applicable in all cells.

Practical enforcement problem

Illustration: 6,000 ft² at 25 W/ft² and 4,000 ft² at 40 W/ft² each satisfy only one side of the two paired conditions. General equipment rules remain applicable, but the specific route is unresolved.

Large-system sizing references also point to NA9, which addresses existing building commissioning, rather than the indoor-growing method in NA7.21.3. Correcting this reference and filling the two uncovered combinations would give reviewers a complete route to follow.

Requested correction

Publish a two-axis applicability table covering all area/power-density combinations and equality boundaries. State the intended fallback for mixed-threshold cases. Correct sizing references to the adopted NA7.21.3 destination and its internal references. Require the permit calculation to identify total facility canopy, tier treatment, room lighting power density and the selected equipment/sizing route.

Existing safeguards to preserve

NA7.21.3 already supplies canopy measurement including tiers, operating conditions, capacity evidence and system-share checks. The main code also invokes controls verification and a Certificate of Acceptance. The underlying procedures should be connected correctly rather than recreated.

Who verifies what

Designer and plan reviewer resolve scope before equipment selection using area, lighting and load worksheets. Installer and acceptance technician verify the corresponding equipment and controls. Do not treat the uncovered pairings as permission to omit otherwise applicable general requirements.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 17 State whether replacing an elevator controller triggers energy recovery

Clarify the requirement | New regeneration requirement

Code §§906.1.1 and 906.4.1, printed 9-33–9-34 / PDF 898–899. Appendices NA7.14.1–.2, printed NA7-78 / PDF 601.

A regenerative elevator drive returns recovered energy to the building instead of dissipating it through resistors. The new-elevator rule includes capacity, speed and rise thresholds. Existing elevators need a clear rule for controller modernization.

Draft excerpt. “Additions to traction elevators with a new elevator control system shall meet the requirements of Section 906.1.1.”

§906.4.1; the parent §906.4 covers additions and alterations.

Practical enforcement problem

Illustration: an existing traction elevator keeps its car and hoistway but receives a new controller. Staff should say whether this work triggers regeneration and which thresholds and exceptions apply. The decision needs to precede the equipment order.

Requested correction

State whether existing-controller replacement triggers regeneration, define the covered replacement scope and applicable thresholds, and specify evidence for the minimum-building-load exception. Supplement the existing inspection with drive identification, approved wiring and commissioning documentation demonstrating return of recovered energy to the building. Coordinate with elevator safety requirements and manufacturer procedures rather than inventing an unsafe field test.

Existing safeguards to preserve

NA7.14.1 already checks braking-resistor/load-bank connections and emergency-power isolation. There is an acceptance requirement; the concern is its applicability and the evidence linking the installed drive to energy return. The listed functional tests in NA7.14.2 address lighting and ventilation.

Who verifies what

Designer/elevator supplier documents the route and exception calculation at permit review before procurement. The acceptance record ties the installed drive and wiring to that decision and includes the existing resistor/isolation checks.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 18 Select the air-barrier verification route before walls are closed

Clarify retained language | Existing enforcement issue rather than a new 2028 defect

Code §§301.3.7.1–.3, printed 3-29–3-31 / PDF 336–338; §100.5.1.2 item 6, printed 1-19 / PDF 145. Appendices NA5.6–NA5.9, PDF 515–517 (draft headers NA45-4 through NA45-6).

An air barrier is the continuous boundary that limits air leakage through the building enclosure. Materials can comply individually while joints or transitions remain incomplete. This finding concerns retained language, rather than a new 2028 inspection deletion.

Draft excerpt. “Verification of the installed air barrier may be performed.”

§301.3.7.3. NA5.9 separately provides independent visual verification while the barrier is accessible; its applicability needs an explicit connection.

Practical enforcement problem

Illustration: a roof-to-wall transition is concealed before the selected verifier arrives. A final product certificate cannot show whether that joint was continuous. The permit documents should establish the required inspection stage.

Requested correction

State the available verification paths and when NA5.9 applies. Identify the selected method, responsible verifier, inspection stages and final evidence on the approved plans. Where NA5.9 visual verification is required or elected, conduct the inspections before concealment and retain inspection/correction records for final approval. Clarify the relationship between appendix reporting language and main-code correction expectations.

Existing safeguards to preserve

NA5.9 already contains design review, accessible inspection and coordination requirements; testing provisions include diagnostic evaluation and reporting. The agency already has authority to require installation documentation for soon-concealed work. This is a clarification of retained language, not a claim that 2028 removes inspection or that no visual protocol exists.

Who verifies what

Designer defines the route and details at permit review. Contractor schedules access; the independent verifier records inspections and corrections before enclosure. Final review checks the completed report against the approved method.

Sources above identify the complete sections and related procedures. Draft code Reference Appendices

Appendix 19 Require a certified nonresidential analyst for performance calculations

A Certified Energy Analyst (CEA) credential addresses energy-code and modeling competence. A performance calculation demonstrates compliance using an approved building energy model. This is an additional policy request, distinct from correcting contradictory technical text.

Additional policy recommendation | Nonresidential performance calculations

Code §§100.5.1–100.5.1.1.1, printed 1-12–1-16 / PDF 138–142; §102.5, printed 1-33–1-36 / PDF 159–162; §1001.2.3.1, printed 10-3–10-4 / PDF 934–935.

What the draft does now

Section 1001.2.3.1 recognizes a CABEC Nonresidential CEA as an eligible design reviewer alongside specified licensed-professional alternatives. That is a design-review role. It does not establish a CEA qualification for every author of a nonresidential performance calculation. The general documentation rules already require author and responsible-designer signatures and amended documents when relevant changes occur.

Immediate policy request

Require a current CABEC Nonresidential CEA for all nonresidential performance compliance calculations and revisions. Broader prescriptive coverage remains my preference for subsequent action. The proposed text preserves other design, signature and independent-review duties.

Suggested performance qualification paragraph

Insert under §102.5. Illustrative regulatory language for CEC consideration; final numbering and legal coordination by CEC.

For nonresidential buildings and nonresidential portions of mixed-use buildings using the performance approach, every set of performance compliance calculations submitted to demonstrate compliance shall be prepared under the responsibility of an individual holding current Nonresidential Certified Energy Analyst (CEA) certification issued by the California Association of Building Energy Consultants (CABEC). This requirement applies to newly constructed buildings, additions, alterations, applicable whole-building compliance options, and each revised performance compliance submittal. The identified CEA shall prepare the calculations or directly supervise their preparation, substantively review the completed calculations and their consistency with the applicable plans and specifications, and sign the declaration required by Section 100.5.1.1. Architectural or engineering licensure alone shall not exempt an individual performing this role from the CEA qualification requirement.

Suggested compliance documentation paragraph

Insert after the general author and responsible-designer signature paragraphs in §100.5.1.1; coordinate the certificate format items.

Each nonresidential performance Certificate of Compliance shall identify the responsible CEA, the CEA credential identifier, the applicable code edition, and the date and revision of the calculations reviewed. The identified CEA shall sign a declaration that the performance calculations and supporting energy compliance documentation are accurate and complete to the extent of the work for which the CEA accepts responsibility. This declaration is required for the initial submittal and each revised performance submittal. Other personnel may assist under the identified CEA's direct supervision and substantive review. The CEA signature supplements, and does not replace, the signatures otherwise required from documentation authors and persons legally responsible for the building design. CEA certification does not authorize practice for which a professional license is required. Any independently required review shall remain independent.

Source locations: Performance framework | Documentation and signatures | Design-review eligibility

Appendix 19 Coverage and implementation

Prevent unintended gaps in performance coverage

The small-building exception in §100.5.1 allows qualifying nonresidential buildings to use a licensed engineer's or architect's compliance statement. Adding only a field to the ordinary certificate would leave this alternative unresolved. The qualification and its evidence should follow the performance calculation even where documentation is simplified.

Suggested coordinating sentence. The exception to Section 100.5.1 for qualifying small nonresidential buildings provides documentation relief only and does not waive the CEA qualification when the performance approach is used. For those projects, the responsible CEA's identification and signed declaration may accompany the otherwise permitted compliance statement.

Healthcare follows a separate documentation route under Title 24, Part 1, Chapter 7. CEC should coordinate with the Department of Health Care Access and Information (HCAI) and the California Building Standards Commission (CBSC) on how the same performance-author qualification would apply there. A change to the ordinary §100.5.1 certificate alone does not establish that coverage.

Make the qualification verifiable

- **Define covered work.** Use the adopted nonresidential definitions and address nonresidential portions of mixed-use projects. Cover initial calculations, additions, alterations, applicable whole-building options and revised performance submittals.
- **Identify the responsible individual.** Put the CEA name, credential identifier, code edition and reviewed calculation revision on the compliance record. Require substantive preparation or direct supervision and review; a name-only signature should not suffice.
- **Verify status and revisions.** Provide a credential-status verification method available to plan reviewers. Link the reviewed model input file and calculation revision to the certificate and make supporting files available for review. This is a proposed uniform record, building on existing authority to request model inputs.
- **Preserve other responsibilities.** Keep lawful design signatures, documentation-author declarations, acceptance testing and any required independent review. A CEA credential does not authorize licensed design practice.
- **Plan implementation.** Set code-cycle competency expectations, transition dates, training capacity and treatment of expired or suspended credentials. Coordinate forms and software; the requirement should work before any universal nonresidential registry is available.

Practical example

An office project submits performance calculations, then changes rooftop equipment before construction. The revised submittal identifies the responsible CEA and model revision, and includes the CEA's signed review. The plan reviewer can verify the credential and tie the installed equipment to the approved revision. Existing designer and acceptance responsibilities continue.

This recommendation supplements my September 28 comment, TN 272958, Requiring CEAs for Energy Compliance. The present request is limited to the immediate nonresidential performance policy and does not reproduce the separate residential adoption discussion.

Earlier docket comment: TN 272958

Implementation and source documents

Use the numbered appendices as a response list. For each finding, identify the code disposition, any appendix/test change, the ACM modeling rule and form or software change needed, and the evidence an enforcement agency should receive. Proposed sampling rates, tolerances and unresolved policy boundaries should be selected by CEC with stakeholder input.

Project stage	Information that makes the requirement verifiable
Permit review	Trigger, selected path, claimed exceptions, calculation basis, responsible preparer and required verification records
Before removal or concealment	Retrofit baseline, required access/inspection stages, approved equipment and any changed design inputs
Acceptance and final approval	Tested equipment, approved targets, measured results, failures, corrections and any expressly authorized deferrals
Program oversight	Eligible population, selected sample, actual-project versus facility coverage, failures and correction closure

Review scope

The review covers selected nonresidential envelope, mechanical, hot-water, lighting, solar/storage, commissioning, covered-process and acceptance-program provisions and related reference appendices. It is a prioritized enforceability review, not a line-by-line certification of the full draft or a cost study. Proposed-versus-retained classifications follow visible draft markup. Scenarios are illustrative and are not field-failure statistics. This comment is submitted by Travis Wade; it does not assert CABEC organizational approval.

Official sources

TN 273088 CEC Pre-Rulemaking Draft Regulatory Text for the 2028 Energy Code, October 12, 2026. 948 physical PDF pages including the cover.

TN 273089 CEC Pre-Rulemaking Draft Regulatory Text for the 2028 Reference Appendices, October 12, 2026. 657 physical PDF pages including the cover.

TN 273090 CEC Notice of Availability, October 12, 2026. Identifies the pre-rulemaking status and comment process.

Docket 25-BSTD-03 Official docket checked November 4, 2026. October 12 code and appendices remain the review baseline.

Page references in the appendices use physical PDF pages, including the docket cover. Printed locators are supplied where practical. Some source running headers contain draft numbering artifacts; use the body section number and physical page to locate the text. Source images retain draft markup. Analytical tables, examples and proposed language are identified separately.