

### **Nonresidential Performance Flowchart**

#### **DESIGN TEAM**

Use compliance software to generate the NRCC-PRF-01-E form.

#### **DESIGN TEAM**

Coordinate and document Design Phase Commissioning activities.

\*Exceptions may apply.

#### **DESIGN TEAM**

Incorporate the completed NRCC forms into the construction documents for compliance verification.

#### **DESIGN TEAM**

Submit the construction documents, including the NRCC forms, to the building department for plan check.

#### **PLANS EXAMINER**

Issue approval to commence construction after compliance is verified.

#### **DESIGN TEAM**

Pick up plan check comments, make revisions and resubmit to the building department.

#### **PLANS EXAMINER**

Review the NRCC forms and construction documents for compliance during plan check.

#### **CONTRACTOR**

Obtain a copy of the NRCC forms along with other construction documents.

#### CONTRACTOR

Determine if Commissioning (Cx) is required, coordinate with the Cx Authority and include Cx costs in the bid and related time in the schedule.

#### **CONTRACTOR**

Determine if HERS verification or Acceptance Testing is needed and include its costs in the bid and related time in the schedule.

#### **CONTRACTOR**

Determine which NRCI, NRCA and/or NRCV forms are required for verification and inspection.

#### **CONTRACTOR**

Give the document package to the building owner.

#### **INSPECTOR**

Verify the NRCC, NRCI, NRCA and NRCV forms in the field and issue a certificate of occupancy.

#### **CONTRACTOR**

Collect the NRCI, NRCA and NRCV forms and have them ready for the inspector.

#### INSTALLER/ATT/ RATER

Complete the required NRCI, NRCA and NRCV forms.









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# CONSTRUCTION



# **Step 1 of 15**



#### **DESIGN TEAM:**

Use compliance software to generate the NRCC-PRF-01-E form.

1. CEC Download or purchase California Energy Commission (Energy Commission)-approved compliance software. The Energy Commission lists approved compliance software on its website. The list includes CBECC-Com, a free resource developed by the Energy Commission, and software for purchase developed by a third party.

The CBECC-Com website offers free Energy Commission-approved software, FAQs, training videos and more.

- 2. You can find modeling assumptions and protocols in the 2019 Energy Code Nonresidential Alternative Calculation Manual (ACM).
- To verify compliance using the software, coordinate closely with project team members including:
  - Architect
  - Energy consultant
  - Owner
  - Mechanical, electrical and plumbing engineer (MEP)
  - Lighting designer

#### **Tips & Tricks:**

- 1. Looking for a Certified Energy Analyst (CEA) may be valuable for finding qualified energy modeling personnel. Visit the California Association of Building Energy Consultants (CABEC) website to find a CEA.
- 2. Energy Code Ace provides no-cost training tailored to industry professionals involved in the compliance process. Courses for plans examiners, building inspectors, energy consultants, architects, contractors and others are provided in a variety of inperson and online formats to match your learning needs and schedule.
- 3. Some products or materials are required to be certified to comply with the Energy Code. The Energy Code Product Finder<sup>TM</sup> can help you to determine if your project needs certified products and can help you to specify and find them.















# **Step 2 of 15**



#### **DESIGN TEAM:**

Coordinate and document Design Phase Commissioning activities.\*

- 1. Section 120.8 of the Energy Code outlines requirements for Commissioning (Cx) of nonresidential New Construction buildings. The requirements differ depending on whether your building has greater than or less than 10,000 ft<sup>2</sup> of nonresidential conditioned floor area. These requirements do not apply to Additions or Alterations, but do apply to nonresidential spaces within mixed-use or hotel/motel occupancies.
- 2. To clarify the Title 24, Part 6 Commissioning requirements, see the Energy Code Ace fact sheet on Commissioning and application guide on Nonresidential HVAC and Plumbing, and the California Energy Commission (Energy Commission) Blueprint newsletter #128. Written by industry practitioners, these resources are full of helpful hints and requirements in an easy to understand format.
- 3. If Commissioning requirements apply to your project, the NRCC-CXR form will need to be completed and submitted with your permit application. This is the only compliance form directly related to Commissioning requirements in Section 120.8.
- There are additional documents, coordination and requirements during early design that are related to Title 24, Part 6 Commissioning requirements. There are also restrictions on who can conduct activities to meet the requirements. For guidance on these requirements, consult Section 120.8 of the Energy Code and the Energy Commission's Commissioning Guide (found in the Nonresidential Compliance Manual) for additional information.

\*Exceptions may apply.









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**Tips & Tricks** 

Add notes in Table E of the NRCC form

to alert the plans examiner about any

work-arounds or special circumstances.

Including your contact information and

inviting the plans examiner to contact

call rather that requiring resubmittal,

saving everyone time and money.

you may resolve questions with a phone

# **Performance Compliance Path**

# **Step 3 of 15**



#### **DESIGN TEAM:**

Complete the appropriate NRCC forms and incorporate in the construction documents for compliance verification.

- Make sure that all relevant documents are included in the permit application package. Each building department to apply. If you are uncertain about these requirements, contact the building department before submitting your permit application.
  - Building department permit fees vary, and many departments publish a fee schedule on their websites. Some jurisdictions may offer online permit options, which can reduce permit fees.
- You can incorporate the NRCC forms into the documents in a variety of ways. You can insert a PDF or JPEG file into the drawing set, but make sure it is readable and that you follow all related building department rules. Many building departments state that 12 point is the smallest font size allowed. The California Energy Commission's dynamic NRCC PDFs may be completed electronically or through a compliance software. The Energy Code Ace Forms Ace<sup>TM</sup> can help you complete the applicable NRCC forms online and will let you know if your project data are compliant prior to permit application.
- The completed NRCC form indicates whether a Home Energy Rating System (HERS) verification or an Acceptance Test is required.
  - A HERS verification is required if an NRCV form is shown as a "Yes" in the Nonresidential Certificates of Verification table at the end of the NRCC.
  - An Acceptance Test is required if an NRCA form is shown as a "Yes" in the Nonresidential Certificates of Acceptance table at the end of the NRCC.
  - If a HERS verification or an Acceptance Test is required, add a note to the construction documents to alert the bidding subcontractors and inspector. You may use the Energy Code Ace HERS and ATT note block resources to do this.
  - Facilitating early coordination between the contractor and a HERS Rater or an Acceptance Test/Field Technician is essential so that the costs are included in the construction bids. For more information, see the Energy Code Ace fact sheets on HERS: Just the Basics and Nonresidential Acceptance Testing.









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# **Step 4 of 15**



#### **DESIGN TEAM:**

Submit the construction documents, including the NRCC forms, to the building department for plan check.

1. To ensure your permit application is complete before submitting it to the building department, review the Energy Code Ace checklist for plans examiners.

Energy Code Ace offers a number of other resources to assist the design team in proper preparation of documents.

- Quick access to the Energy Code is available through the Reference Ace™
- Energy Code Ace trigger sheets, fact sheets and application guides help "decode" Title 24, Part 6 requirements for a wide array of measures.

#### **Tips & Tricks**

Turnaround times vary widely among jurisdictions, anywhere from weeks to months. Inquire ahead of time in order to include sufficient time in the project schedule.









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# **Step 5 of 15**



#### **PLANS EXAMINER:**

Review the NRCC forms and construction documents for compliance during plan check.

1. The plans examiner reviews construction documents, specifically the NRCC forms, for Energy Code compliance.

The plans examiner reviews the permit application to ensure that the project data entered in the NRCC forms are consistent with the construction documents. The plans examiner also checks that the NRCC form states that it "Complies" or "Complies with Exceptional Conditions" in the Compliance status table.

- Checklists for plans examiners help ensure Energy Code requirements are met
- Quick access to the Energy Code is available through the Reference Ace™
- Energy Code Ace fact sheets, trigger sheets and application guides help "decode" Title 24, Part 6 requirements for a wide array of measures

**Tips & Tricks** 

Energy Code Ace provides no-cost training tailored to industry professionals involved in the compliance process. Courses for plans examiners, building inspectors, energy consultants, architects, contractors and others are provided in a variety of in-person and online formats to match your learning needs and schedule.









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# **Step 6 of 15**



#### **DESIGN TEAM:**

Pick up plan check comments, make revisions and resubmit to the building department.

- Plans examiners often have questions or comments about verification which will require either a response and/or resubmittal of documents. It may save time if you ask the plans examiner to call you with a question while they're doing review, so include your contact information in Table E of the NRCC form.
- 2. Ask your local building department if fees apply.
  - If you need help finding the code requirement or understanding common applications to respond to comments from the plans examiner, the Energy Code Ace Reference Ace™ and application guides may be helpful.

#### **Tips & Tricks**

Experience matters! The first few times going through this process may be a learning experience, but establishing a positive relationship with your local building department and taking note of lessons learned eases the process over time.













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# Nonresidential **Performance Compliance Path**

# **Step 7 of 15**



#### **PLANS EXAMINER:**

Issue approval to commence construction after compliance is verified.

1. After compliance is verified, the building department issues a stamped set of approved plans to the design team that documents jurisdictional consent to begin construction.









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# **Step 8 of 15**



#### **CONTRACTOR:**

Obtain a copy of NRCC forms along with other construction documents.

- 1. The design team turns over construction documents, including applicable NRCC forms and the building permit, to the general contractor. Typically a member of the design team or the building owner is designated to make this hand over.
- The general contractor should confirm that all NRCC-PRF-01-E information, and CXR form information is incorporated into the schedule and cost estimates. The completed NRCC forms can be found in the construction documents. NRCC-CXR forms are applicable for projects that trigger Commissioning requirements in Section 120.8 of Title 24 Part 6, which you can consult using the Reference Ace<sup>TM</sup> tool.

Note that if something changes in the field and contradicts information on the NRCC-PRF-01-E form or any other NRCC compliance documents, the form must be updated to confirm compliance.

**3**.



#### **Team Coordination:**

- Contact the documentation author if there are questions about how the design complies.
- The documentation author is noted on the last page of the NRCC form.
- The building permit and other relevant documents should remain posted onsite for the duration of the project. Posting requirements can vary among building departments, so check with your jurisdiction to confirm its posting requirements.









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# **Step 9 of 15**



#### **CONTRACTOR:**

Determine if Commissioning (Cx) is required, coordinate with the Cx Authority and include Cx costs in the bid and time in the schedule.

- 1. Section 120.8 of the Energy Code outlines requirements for Commissioning of nonresidential New Construction buildings. Only buildings with greater than 10,000 ft² of nonresidential conditioned floor area are required to complete field Commissioning activities. Use the Reference Ace™ to review the Section 120.8 requirements.
- 2. If the NRCC-CXR form is found in the construction documents, Commissioning is required for the project. Table B on the NRCC-CXR form indicates the scope of the Commissioning requirements. If a Commissioning plan is required on Table B, the contractor should get a copy of this document and start the required coordination among the Cx Authority and subcontractors early in the construction process.
- For clarification on the Title 24, Part 6 Commissioning requirements see the Energy Code Ace fact sheet on Commissioning and application guide on Nonresidential HVAC and Plumbing. Written by industry practitioners, these resources are full of helpful hints and requirements in an easy-to-understand format.
- 4. Commissioning field tests reference the Acceptance Testing required by the Energy Code. However, depending on what's documented during the Design Phase, additional testing for Commissioning may be required and is noted in Table K on the NRCC-CXR form. The NRCA forms are used to document the Acceptance Testing for the inspector. There are no additional Commissioning forms to complete, but there are additional documents that should be left with the building owner, including a Commissioning report and a system manual.
  - More information on Acceptance Testing can be found in the Energy Code Ace fact sheet on *Nonresidential Acceptance Testing*.









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# **Step 10 of 15**



#### **CONTRACTOR:**

Determine if HERS verification or Acceptance Testing is needed and include its costs in the bid and related time in the schedule.

- 1. The completed NRCC form indicates whether a Home Energy Rating System (HERS) verification or Acceptance Test is required.
  - A HERS verification is required if an NRCV form is shown as a "Yes" in the Nonresidential Certificates of Verification table at the end of the NRCC form. For more details, see the Energy Code Ace fact sheet on HERS: Just the Basics.
  - An Acceptance Test is required if an NRCA form is shown as a "Yes" in the Nonresidential Certificates of Acceptance table at the end of the NRCC form. For more details, see the Energy Code Ace fact sheet on Nonresidential Acceptance Testing
  - If a HERS verification or Acceptance Test is required, alert the bidding subcontractors so that the costs are included in the construction bids and time is included in the schedule.
- 2. If HERS verification is required, coordinate with a HERS Rater as early as possible to understand fees and schedule impacts, and build these into the project bid. Ask the designer if a HERS Rater was engaged during the design process. If not, a list of HERS Providers approved by the California Energy Commission (Energy Commission) can be found on the Energy Commission's HERS Program web page.
- 3. Some Acceptance Tests, such as for lighting controls and as of October 1, 2021, HVAC installations, require a Certified Acceptance Test Technician (ATT) to perform the test. More about Acceptance Testing requirements and Certification Providers can be found on the Energy Commission's Acceptance Test Technician Certification Provider Program web page.

#### **Tips & Tricks**

HERS verification and Acceptance Test requirements should be carefully reviewed with the HERS Rater and/or ATT to ensure all impacts to schedule and project costs are considered, including:

- Sequencing installation to coincide with access required for testing
- Scheduling site visits well in advance
- Understanding general contractor, installer and HERS Rater roles and responsibilities









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# **Step 11 of 15**



#### **CONTRACTOR:**

Determine which NRCI, NRCA and NRCV forms are required for verification and inspection.

- The contractor should coordinate with the building inspector to ensure that proper forms are posted onsite. To identify applicable NRCI, NRCA, and NRCV forms, check the NRCC-PRF-01-E form included in the stamped plan set.
  - Applicable NRCI forms can be found on the Nonresidential Certificates of Installation table in the NRCC form
  - Applicable NRCA forms can be found on the Nonresidential Certificates of Acceptance table in the NRCC form
  - Applicable NRCV forms can be found on the Nonresidential Certificates of Verification table in the NRCC form

All applicable forms must be submitted to the building inspector.

 Inspection requirements vary by jurisdiction. Check with your local building department to find out what needs to be inspected and when, as well as whether additional forms are required to be posted onsite.









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# Nonresidential **Performance Compliance Path**

# **Step 12 of 15**



#### **INSTALLER, ACCEPTANCE TEST TECHNICIAN AND/OR HERS RATER:**

Complete the required NRCI, NRCA and NRCV forms.

- 1. Each subcontractor is responsible for completing an NRCI form for their scope of work. The general contractor must coordinate and keep copies of all NRCI forms for verification during inspection. NRCI forms are available on the Energy Code Ace website.
- The NRCA forms must be completed by an Acceptance Test Technician (ATT) or Field Technician through an Acceptance Test Technician Certification Provider's (ATTCP) online interface. For more information see the California Energy Commission's ATTCP Program web page and the Energy Code Ace fact sheet on Nonresidential Acceptance Testing.
- 3. The NRCV forms must be completed by the Home Energy Rating System (HERS) Rater through a HERS registry
  - For more information see the California Energy Commission's HERS Program web page and the Energy Code Ace fact sheet on *HERS: Just the Basics.*









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# **Step 13 of 15**



#### **CONTRACTOR:**

Collect the NRCI, NRCA and NRCV forms and have them ready for the building inspector.

- 1. The general contractor compiles all NRCI, NRCA and NRCV forms that have been completed by installers and subcontractors. These forms should be printed and posted onsite.
- 2. The building inspector verifies the compliance forms onsite. Not having these forms available may require rescheduling the inspection. Often the inspector will visit the site multiple times per project. Know when to have the required forms ready onsite for inspection.
- 3. Although jurisdictions are not required to collect them, some may take the forms.
- 4 Forms will need to be given to the owner as well.

For more information on documentation required to demonstrate compliance, review the Title 24, Part 1 administrative regulation requirements in the Reference Ace<sup>TM</sup>.

#### **Tips & Tricks**

Rescheduling an inspection could incur fees. Check with your local jurisdiction to ensure that the correct forms are properly posted to avoid cost and schedule impacts.









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# **Step 14 of 15**



#### **INSPECTOR:**

Verify the NRCC, NRCI, NRCA and NRCV forms in the field and issue a certificate of occupancy.

1. The building inspector verifies that the NRCC, NRCI, NRCA and NRCV forms are current with what is installed.

Building inspectors can use notes from plans examiners to identify top field verification priorities.



Although jurisdictions are not required to collect them, some may take the forms.









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# Nonresidential **Performance Compliance Path**

# **Step 15 of 15**



#### **CONTRACTOR:**

Give the document package to the building owner.

- 1. The general contractor prepares the document package for the building owner. Information required includes, at minimum, the following forms:
  - NRCC
  - NRCI
  - NRCA
  - NRCV
- 2. Additionally, if Commissioning was required, a Commissioning Report must be included in the owner package as required in Section 120.8 of the Energy Code.









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