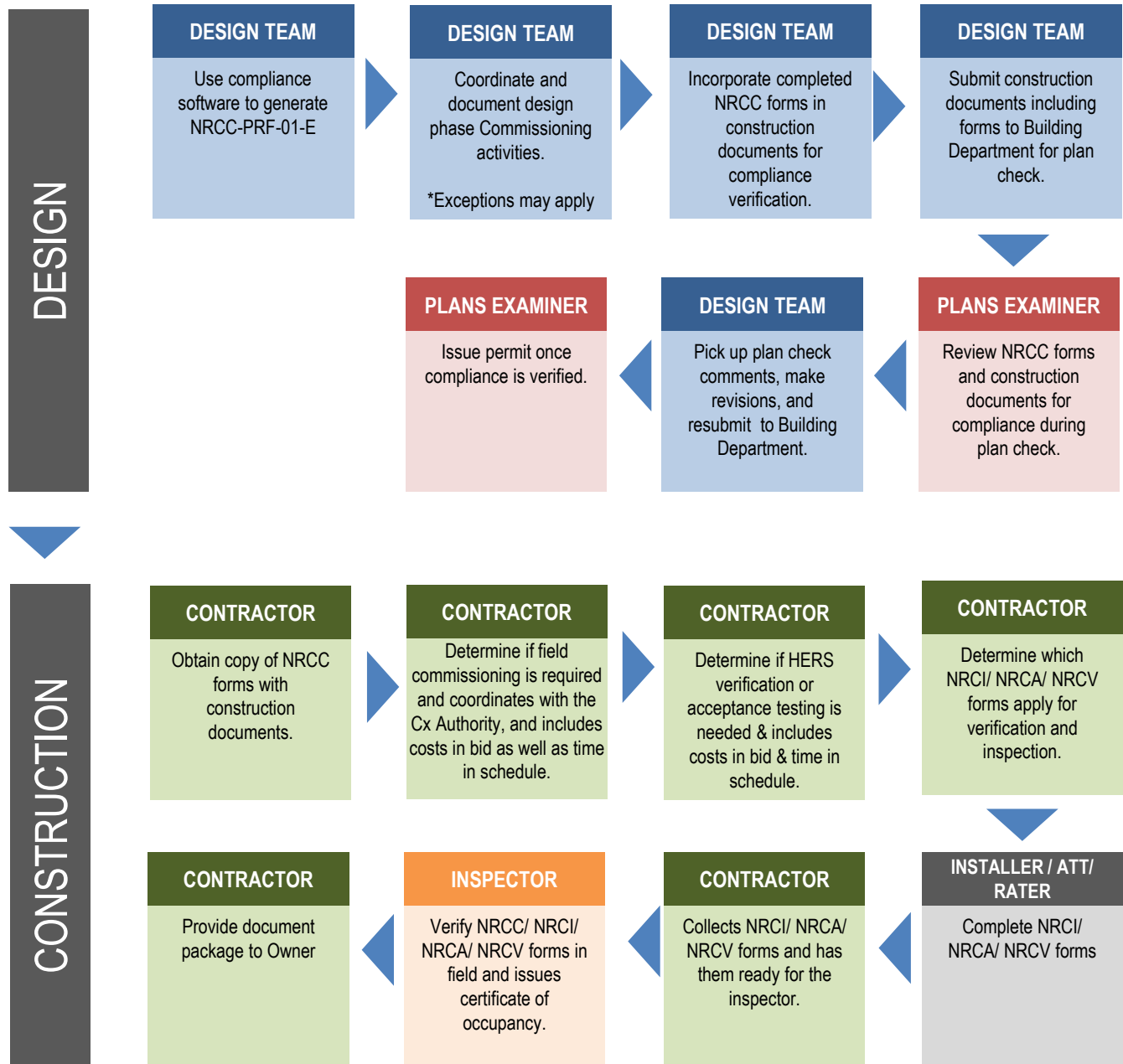


# Nonresidential Performance Flowchart





**DESIGNER:** Use compliance software to generate NRCC-PRF-01-E

1. Download or purchase CEC approved compliance software. CBECC-Com is a free resource, developed by the CEC. Approved software developed by a third party is available for purchase.

[Click here for access to CEC approved compliance software.](#)

**Tip:** Be sure to use an approved version of each software tool! Check the column labeled “Approved versions usable for permit” in the table at the link above to confirm.

The CBECC-Com website includes free CEC approved software, FAQs, training videos and more.

[Click here to access the CBECC-Com website.](#)

2. Modeling assumptions and protocols can be found in the Alternative Calculation Method (ACM).

[Click to find the Title 24, Part 6 2016 ACM.](#)      [Also available in Reference Ace Tool.](#)



3. Close coordination with the project team is necessary to verify compliance using the software, including:

- Architect
- Energy consultant
- Owner
- Mechanical, Electrical and Plumbing engineer (MEP)
- Lighting Designer

**Tips & Tricks:**

- 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 [here](#) to find a CEA.
- IOUs offer modeling training through the regional Education Centers.
  - [PG&E Class Calendar](#)
  - [SCE Class Calendar](#)
  - [SDG&E Class Calendar](#)
  - [So Cal Gas Class Calendar](#)

Step 1 of 15





**DESIGNER:** Coordinate and document design phase Commissioning activities\*.

1. Section 120.8 of the Energy Standards outlines requirements for commissioning of nonresidential newly constructed buildings. The requirements differ depending on whether your building has greater than or less than 10,000 ft<sup>2</sup> of conditioned floor area. These requirements do not apply to additions or alterations, but do apply to nonresidential spaces within high-rise residential or hotel/ motel occupancies.



[Click HERE to go to Section 120.8 using the Reference Ace tool](#)

2. Additional resources to help clarify the Part 6 commissioning requirements are the Energy Code Ace Commissioning fact sheet, Energy Code Ace's Nonresidential HVAC and Plumbing Application Guide and the CEC's Blueprint #107. Written by industry practitioners, these resources are full of helpful hints and requirements in an easy to understand format.



[Click HERE to go to the Energy Code Ace Commissioning Fact Sheet](#)

[Click HERE to go to the Energy Code Ace Nonresidential HVAC & Plumbing Application Guide](#)

[Click HERE to go to the CEC's Blueprint #107](#)

3. There are five forms related to commissioning. The design review activities, and associated forms (NRCC-CXR-01-E & NRCC-CXR-02-E) are required for all newly constructed nonresidential buildings. Additional design review checklists forms (NRCC-CXR-03-E & NRCC-CXR-04-E) are required depending on whether your HVAC system is considered "simple" or "complex" by the Standards (see Energy Code Ace Fact Sheet for more detail).

[Click HERE to review copies of these forms on the CEC webpage](#)

4. There are additional documents, coordination and requirements during early design that are related to the Part 6 commissioning requirements. There are also restrictions on who can conduct the activities to meet the requirements. In addition to the code language, see the CEC's Commissioning Guide, or the Energy Code Ace Fact Sheet for additional information.

[Click HERE to go to the CEC's Nonresidential Commissioning Guide](#)

\*Exceptions may apply



**DESIGNER:** Incorporates completed NRCC forms in construction documents for compliance verification.

1. Make sure all relevant documents are included in the permit application package. Each building department has different requirements for application; if you're unsure of what your building department requires, contact them prior to submittal.



Building department permit fees vary, and many departments publish a Fee Schedule on their websites. Some jurisdictions may offer online permit options, which may result in fee reduction.

2. Incorporation of the NRCC forms into the documents can be done through a variety of methods. You can insert a PDF or JPEG file into the drawing set, but make sure it is readable. Many building departments state that 12 point is the smallest font size allowed. Forms may be filled out by hand and scanned, or filled out electronically in an editable PDF software



3. If a HERS verification is required, it is essential to coordinate with a HERS rater early, as well as confirming with the Owner and Contractor that HERS coordination efforts and fees are included in the project cost. HERS verification triggers a requirement to be registered in a HERS Providers registry, even for nonresidential HERS measures.



HERS documents should be "unlocked" for easier incorporation into CAD programs. Many free software services are available to convert a locked PDF to JPEG.

### Tips & Tricks:

- Maintain a good relationship with your Plans Examiners! Letting them know that you are willing to answer any questions or concerns to help the process go smoothly will go a long way. Including a cover letter with Title 24 documents about modeling issues, work-arounds, notes of concern or other important details, and your contact information is very helpful. The plans examiner may be able to simply call you with questions rather than requiring a re-submittal, saving everyone's time and money.

Step 3 of 15





**DESIGNER:** Submits construction documents including forms to Building Department for plan check.

1. The Plans Examiner reviews construction documents and the NRCC forms for Title 24, Part 6 energy code compliance.

Many resources are available to assist the design team in proper preparation of documents, as well as for Plans Examiners to refer to as they review them.



- Quick access to the Title 24, Part 6 Standards is available through the [Reference Ace](#).
- Fact and Trigger Sheets about Title 24, Part 6 are available in the [Resources](#) section of the [Energy Code Ace website](#).
- Checklists to ensure compliance are also available on the Energy Code Ace website [here](#).

### Tips & Tricks:



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

Step 4 of 15





**Plans Examiner:** Reviews NRCC forms and construction documents for compliance during plan check.

1. The Plans Examiner reviews construction documents and the NRCC forms for Title 24, Part 6 energy code compliance.  
Many resources are available to assist the design team in proper preparation of documents, as well as for Plans Examiners to refer to as they review them.
  - Quick access to the Title 24, Part 6 Standards is available through the [Reference Ace](#).
  - Fact and Trigger Sheets about Title 24, Part 6 are available in the [Resources](#) section of the Energy Code Ace website.
  - Checklists to ensure compliance are also available on the Energy Code Ace website [here](#).
2. Plans examiners often have questions or comments about verification which will require either a response and/or resubmittal of documents. Fees may apply; contact your local building department to confirm.
3. If revisions to the energy model are required, documents may need to be resubmitted to the HERS registry as well.



### Tips & Tricks:

- Nonresidential Plans Examiner and Building Inspector training on Part 6 is available for *FREE*. This is an all-day in-person training that will often come to your location of choice. Find out more [HERE](#).

Step 5 of 15







**DESIGNER:** Pick up plan check comments, makes revisions if necessary, and resubmits to the Building Department.

1. 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. Including a cover letter that has special cases, modeling work-arounds, or issues with clear contact information could be helpful. Fees may apply; contact your local building department to confirm.

[Checklists are available on the Energy Code Ace website to help make sure all your bases are covered!](#)

### 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 will ease the process over time.

Step 6 of 15





**Plans Examiner: Issue permit once compliance is verified.**

1. The Building Department will issue a stamped set of approved plans to the design team.
2.  The design team will turn over construction documents including applicable NRCC forms and building permit to the general contractor. Typically a member of the design team or the building owner is designated to make this hand over.

Applicable NRCC forms will be included on the plan set or provided as 8.5x11 documents if a plan set isn't produced for the project.

Step 7 of 15







**Contractor:** Obtain copy of NRCC forms along with other construction documents.

1. The general contractor should confirm that all NRCC-PRF-01-E information, and CXR form\* information is incorporated into the schedule as well as cost estimates. The completed NRCC forms can be found in the construction documents.

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.



2. Team Coordination:
  - Contact the documentation author with questions about the construction documents.
  - It may be helpful to request a copy of the Forms Ace output and/or a list of forms from the designer including which NRCI, NRCA, and NRCV forms are applicable.



[Click HERE to go to the Forms Ace tool](#)

3. Building permit and other relevant documents should remain posted onsite for the duration of the project. These can vary among departments, check with your jurisdiction to confirm what's required.

### Tips & Tricks:

- *FREE* training on the Commissioning process is available [here](#). This 2-hour recorded Decoding Talk takes a deep dive into the requirements for Nonresidential 2013 code compliance, but requirements have changed little under the 2016 Energy Standards.
- Confused about what the forms mean? Read this [Fact Sheet](#) about the Permit Process, which includes a key to forms names.

- \* NRCC-CXR forms are applicable for projects that trigger commissioning requirements in Section 120.8 of Part 6.

[Click HERE to go to Section 120.8 using the Reference Ace tool](#)

Step 8 of 15





**Contractor:** Determine if field commissioning is required and coordinates with the Cx Authority, and includes costs in bid as well as time in schedule.

1. Section 120.8 of the Energy Standards outlines requirements for commissioning of nonresidential newly constructed buildings. Requirements differ based on whether the building has conditioned floor area less than 10,000 ft<sup>2</sup>.

[Click HERE to go to 120.8 using the Reference Ace tool](#)

2. Additional resources to help clarify the Part 6 commissioning requirements are the Energy Code Ace Commissioning fact sheet and Nonresidential HVAC and Plumbing Application Guide. Written by industry practitioners, these resources are full of helpful hints and requirements in an easy to understand format.

[Click HERE to go to the Energy Code Ace Commissioning Fact Sheet](#)

[Click HERE to go to the Energy Code Ace Nonresidential HVAC & Plumbing Application Guide](#)



3. Commissioning field tests reference the acceptance testing required in the Energy Standards, however, depending on what's documented during the design phase, additional testing for commissioning may be required. The NRCA forms are used to document the field testing for the inspector (i.e., 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.

Step 9 of 15





**Contractor:** Determine if HERS verification or acceptance testing is needed & includes costs in bid & time in schedule.

If HERS verification is required, coordinate with a HERS rater now.

Nonresidential HERS projects will mostly be high-rise residential or involve HVAC equipment replacements.

1. Contractors can identify if HERS Verification and/or acceptance testing is required by checking the PRF1 form to see which forms are checked as applicable.
  - NRCV forms indicate that HERS verification is required
  - NRCA forms indicate that Acceptance Testing is required



2. If HERS verification is required, coordinate with a HERS Provider 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 CEC approved Providers may be able to help you find a rater in your area. The California Associate of Building Energy Consultants (CABEC) could also be a resource. You could also call your local building department and see if they have a recommendation for someone local that does quality work.

[Click HERE to visit HERS Providers and Raters page](#)



3. HERS verification and acceptance test requirements should be carefully reviewed with the HERS rater and/or acceptance test technician (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

### Tips & Tricks:



- Maintaining a good relationship with local building inspectors will ease the inspection process. Becoming familiar with a jurisdiction's scheduling availability, access requirements for specific building details, and understanding which documents to have available will help inspections to go smoothly the first time.

Step 10 of 15



**Contractor:** Determine which NRCI/ NRCA/ NRCV forms apply, for verification and inspection.



1. The contractor should coordinate with the inspector to ensure that proper forms are posted onsite. Applicable NRCI, NRCA, and NRCV forms can be identified by checking the NRCC-PRF-01-E form, which will be included in the stamped plan set.
2. If the scope changes after the NRCC-PRF-01-E was completed, the Forms Ace tool can be used to determine which forms are applicable to the project.

[Click HERE to go to the Forms Ace tool.](#)

3. 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.

Step 11 of 15





Installer, HERS Rater, and/or Acceptance Test Technician: Completes NRCI/ NRCA/ NRCV forms.



1. **Each subcontractor is responsible for completing an NRCI for their scope of work.** The general contractor must coordinate and keep copies of all NRCI forms for verification during inspection.
2. Acceptance testing technicians are responsible for completing appropriate NRCA forms. Certified Acceptance Test Technicians (ATTs) are required for lighting acceptance tests.  
To become certified, or to find a certified ATT, visit the CEC's webpage describing their Acceptance Test Technician Certification Program.
  - [CEC Acceptance Test Technician Certification Program webpage](#)
3. Although there are currently no requirements to be certified to conduct HVAC related acceptance tests, that will likely change in 2017, so be sure to stay informed of changes.
4. NRCV forms must be completed by a HERS rater.

Step 12 of 15





**Contractor:** Collects NRCI/ NRCA/ NRCV forms and has them ready for the inspector.



1. The general contractor will compile all NRCI, NRCA, and NRCV forms that have been completed by installers and subcontractors. These should be hard copies posted onsite.
2. The inspector will verify 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 which forms to have when.
  - 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.
3. Although jurisdictions aren't required to collect forms, some may take the forms.
4. Forms will need to be handed over to the owner as well.

[Click HERE for the requirements in the Title 24, Part 1 Regulations.](#)

Step 13 of 15





**Building Inspector:** Verify NRCC/ NRCI/ NRCA/ NRCV forms in field and issues certificate of occupancy.

1. Inspector verifies that provided NRCC, NRCI, NRCA, NRCV forms are current with what's installed.

Building Inspectors can use notes from plans examiners to identify top field verification priorities. Energy Code Ace has also created a Building Inspector Checklist to guide the inspector through compliance documents.

[Click HERE for the Energy Code Ace Nonresidential Building Inspector Checklist.](#)

2. Although jurisdictions aren't required to collect forms, some may take them.

Step 14 of 15







**Contractor:** Provides document package to the owner.

1. General contractor prepares package for Owner. Information required includes, a minimum, the following forms:

- NRCC
- NRCI
- NRCA
- NRCV

[Click HERE for the exact language in the Nonresidential Compliance Manual](#)

2. Additionally, if Commissioning was required, a Commissioning Report must be included in the owner package per code section 120.8 of the Energy Standards.

[Click HERE for the exact language about Commissioning Reports in the Reference Ace.](#)

Step 15 of 15



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