

## DOCKETED

<b>Docket Number:</b>	15-BSTD-05
<b>Project Title:</b>	2016 Nonresidential Compliance Manual and Documents
<b>TN #:</b>	206001
<b>Document Title:</b>	Comments Concerning the 2016 Building Energy Efficiency Standards Nonresidential Compliance Manual
<b>Description:</b>	N/A
<b>Filer:</b>	Sabrina Savala
<b>Organization:</b>	DGS
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	9/3/2015 10:37:58 AM
<b>Docketed Date:</b>	9/3/2015

August 30, 2015

California Energy Commission  
**Attention: Docket No. 15-BSTD-05**  
Dockets Office  
1516 Ninth Street, MS-4  
Sacramento, CA 95814

**RE: 2016 Building Energy Efficiency Standards Nonresidential Compliance Manual and Documents**

Dear California Energy Commission:

The comments concerning the 2016 Building Energy Efficiency Standards Nonresidential Compliance Manual and related compliance documents are as follows:

**1. 12.4 Design Phase Design Review, Page 12.7**

120.8(d) Design Phase Design Review

1. Design Review Requirements. For buildings less than 10,000 square feet, design phase design review may be completed by the design engineer. Buildings between 10,000 and 50,000 square feet require completion of the Design Review Checklist by either an engineer in-house to the design firm but not associated with the building project, or a third party design engineer. For buildings larger than 50,000 square feet or for buildings with complex mechanical systems, an independent review of these documents by a third party design engineer is required.

**Proposed Revision:**

**Design Review Requirements. The design reviewer shall be the documentation author of the Design Review Kickoff Certificate(s) of Compliance and Construction Document Design Review Checklist Certificate(s) of Compliance as specified in Part 1 Section 10-103(a)1 and as described below:**

**For all Nonresidential buildings, the Design Review Kickoff Certificate(s) of Compliance, and the Construction Document Design Review Checklist Certificate(s) of Compliance shall be reviewed and signed by a licensed professional engineer or licensed architect, or a licensed contractor representing services performed by or under the direct supervision of a licensed engineer or architect, as specified in the provisions of Division 3 of the Business and Professions Code. For buildings less than 10,000 square feet, this signer may be the engineer or architect of record. For buildings greater than 10,000 square feet but less than 50,000 square feet, this signer shall be a qualified in-house engineer or architect with no other project involvement or a third party engineer, architect, or contractor. For buildings greater than 50,000 square feet and all buildings with complex mechanical systems serving more than 10,000 square feet, this signer shall be a third party engineer, architect, or contractor.**

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

## 2. 12.4.2 Compliance Method

### 2. Construction Document Review

- e. Certification of Completion - The design reviewer, design engineer, and owner/owner's representative sign the Certificate of Compliance – Cx Design Review Signature Page, form NRCC-CXR-05-E, indicating that the construction documents design review has been completed.

#### Proposed Revision:

- e. Certification of Completion - The design reviewer, **architect**, design engineer, and owner/owner's representative sign the Certificate of Compliance – Cx Design Review Signature Page, form NRCC-CXR-05-E, indicating that the construction documents design review has been completed.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

### 3. Qualifications for the design reviewer are based on the project size and complexity of mechanical systems. The design reviewer must be a licensed professional engineer that meets the following:

1. Buildings <10,000 square feet: engineer-of-record (self-review) or contractor if engineer-of-record not required
2. Buildings >10,000 square feet AND <50,000 square feet: qualified, in-house engineer with no other project involvement OR third party engineer  
Selecting Trained Personnel for Commissioning Commissioning Measures Page 12-9
3. Buildings > 50,000 square feet OR buildings <50,000 square feet with complex mechanical systems: third party design engineer.

#### Proposed Revision:

Qualifications for the design reviewer are based on the project size and complexity of mechanical systems. The design reviewer must be a licensed professional **architect** or engineer that meets the following:

1. Buildings <10,000 square feet: **architect**, engineer-of-record (self-review) or contractor if engineer-of-record not required
2. Buildings >10,000 square feet AND <50,000 square feet: qualified, in-house **architect**, engineer with no other project involvement OR third party **architect** or engineer.  
Selecting Trained Personnel for Commissioning Commissioning Measures Page 12-9
3. Buildings > 50,000 square feet OR buildings <50,000 square feet with complex mechanical systems: third party design engineer or **architect**.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

**4. NRCCs – Draft 2016 Nonresidential Compliance Documents**

2016-NRCC-CXR-01-E DESIGN REVIEW KICKOFF - Certificate of Compliance

**A. GENERAL INFORMATION**

Building Type:

**Proposed Revision:**Change Building Type to **Occupancy Classification & Construction Type:****Rationale:**

This revision will provide consistency with other provisions within the California Building Codes.

**5. NRCCs – Draft 2016 Nonresidential Compliance Documents**

2016-NRCC-CXR-01-E DESIGN REVIEW KICKOFF - Certificate of Compliance

**D. DESIGN REVIEWERS QUALIFICATIONS**

- ☐ <10,000 ft<sup>2</sup> design engineer
- ☐ <10,000 ft<sup>2</sup> and <50,000ft<sup>2</sup> in-house engineer not associated with the project or third-party engineer
- ☐ >50,000ft<sup>2</sup> or complex mechanical system: third-party engineer

**Proposed Revision:****D. Design Reviewer Qualifications**

- ☐ <10,000 ft<sup>2</sup> design engineer or **architect**
- ☐ <10,000 ft<sup>2</sup> and <50,000ft<sup>2</sup> in-house engineer or **architect** not associated with the project or third-party engineer or **architect**
- ☐ >50,000ft<sup>2</sup> or complex mechanical system: third-party engineer or **architect**

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.**6. NRCCs – Draft 2016 Nonresidential Compliance Documents**

2016-NRCC-CXR-01-E DESIGN REVIEW KICKOFF - Certificate of Compliance

**E. LIST OF MEETING ATTENDEES**

- ☐ Owner: \_\_\_\_\_ ☐ Design Reviewer: \_\_\_\_\_
- ☐ Project Manager: \_\_\_\_\_ ☐ Design Engineer(s): \_\_\_\_\_

**Proposed Revision:****E. LIST OF MEETING ATTENDEES**

- ☐ Owner: \_\_\_\_\_ ☐ Design Reviewer: \_\_\_\_\_
- ☐ Project Manager: \_\_\_\_\_ ☐ Design **Architect/**Engineer(s): \_\_\_\_\_

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

## 7. NRCCs – Draft 2016 Nonresidential Compliance Documents

2016-NRCC-CXR-01-E DESIGN REVIEW KICKOFF - Certificate of Compliance

G. Design Review Meeting Topics:

HVAC SYSTEM SELECTION:

**Proposed Revision:**

HVAC/**LIGHTING** SYSTEM SELECTION:

**Rationale:** As lighting systems consume large amounts of energy, the reasoning behind which lighting system is selected should be identified.

## 8. NRCC-CXR-01-E User Instructions

This compliance document is used to record that the requirement to hold a design review kickoff meeting between the owner, design engineer and design reviewer has been met. The intent of the kickoff meeting is to discuss the project scope, design, project schedule, and the design reviewer's involvement using schematic design documents, the OPR and the BOD. The kickoff meeting should be held during the schematic design phase. The design reviewer will deliver the appropriate Certificates of Compliance – Cx Construction Documents to the project design team at the kickoff meeting for guidance in development of the construction documents.

**Proposed Revision:**

This compliance document is used to record that the requirement to hold a design review kickoff meeting between the owner, architect, design engineer and design reviewer has been met. The intent of the kickoff meeting is to discuss the project scope, design, project schedule, and the design reviewer's involvement using schematic design documents, the OPR and the BOD. The kickoff meeting should be held during the schematic design phase. The design reviewer will deliver the appropriate Certificates of Compliance – Cx Construction Documents to the project design team at the kickoff meeting for guidance in development of the construction documents.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

## 9. NRCC-CXR-01-E User Instructions

Section A. General Information

2. BUILDING TYPE is specified because code requirements and design decisions are influenced by building type. It is possible for a building to include more than one building type.

**Proposed Revision:**

2. **Occupancy Classification & Construction Type: is specified because the California Building Code classifies structures with respect to occupancy in one or more groups defined in Section 302.**

**Construction type is specified because the California Building Code classifies buildings erected to be one of the five construction types defined in Sections 602.2 through 602.5.**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

## 10. NRCC-CXR-01-E User Instructions

### Section D. Design Reviewer Qualifications

This section consists of three check boxes that are used to identify the qualifications of the design reviewer based on project size and complexity of mechanical systems. Contractors accepting the responsibilities of the engineer under the provisions of the Business and Profession Code may also complete and sign these certificates. The commissioning coordinator who meets the requirements of 120.8(d) may also fill the role of design reviewer. Complete the check box for the qualification being met by the project's design reviewer.

#### **Proposed Revision:**

This section consists of three check boxes that are used to identify the qualifications of the design reviewer based on project size and complexity of mechanical systems. Contractors accepting the responsibilities of the **architect** or engineer under the provisions of the Business and Profession Code may also complete and sign these certificates. The commissioning coordinator who meets the requirements of 120.8(d) may also fill the role of design reviewer. Complete the check box for the qualification being met by the project's design reviewer.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

## 11. NRCC-CXR-01-E User Instructions

### Section E. List of Meeting Attendees

Meeting attendees should be identified on this section of the compliance document. Mechanical and/or electrical engineers may be identified under the design engineer check box.

#### **Proposed Revision:**

Meeting attendees should be identified on this section of the compliance document. **Architect, m**echanical and/or electrical engineers may be identified under the design engineer check box.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

## 12. NRCC-CXR-01-E User Instructions

### Section G. Design Review Meeting Topics

The meeting topics section identifies five areas that should be discussed between the owner, design engineer(s), design reviewer and project manager. These topics include the following:

#### **Proposed Revision:**

The meeting topics section identifies five areas that should be discussed between the owner, **architect,** design engineer(s), design reviewer and project manager. These topics include the following:

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

### 13. NRCC-CXR-01-E User Instructions

Section G. Design Review Meeting Topics – 3, HVAC SYSTEM SELECTION

HVAC SYSTEM SELECTION identifies the HVAC system type and the reasoning behind that selection to include items such as energy efficiency requirements, building limitations (i.e. no mechanical equipment on the roof), owner preferences, etc.

**Proposed Revision:**

HVAC/**LIGHTING** SYSTEM SELECTION identifies the HVAC **and lighting** system types and the reasoning behind that selection to include items such as energy efficiency requirements, building limitations (i.e. no mechanical equipment on the roof), owner preferences, etc.

**Rationale:** As lighting systems consume large amounts of energy, the reasoning behind which lighting system is selected should be identified.

### 14. NRCC-CXR-01-E User Instructions

Section H. Coordination

The design reviewer, owner, design engineer and project manager should coordinate on timing of the construction documents design review. The construction documents design review and completion of NRCC-CXR-02-E through NRCC-CXR-04-E should occur late in the construction document phase, so the timing must be coordinated such that the design engineer can review the completed compliance documents and provide any required changes prior to the project schedule permit submittal date.

**Proposed Revision:**

The design reviewer, **architect**, owner, design engineer and project manager should coordinate on timing of the construction documents design review. The construction documents design review and completion of NRCC-CXR-02-E through NRCC-CXR-04-E should occur late in the construction document phase, so the timing must be coordinated such that the design engineer can review the completed compliance documents and provide any required changes prior to the project schedule permit submittal date.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

### 15. NRCCs – Draft 2016 Nonresidential Compliance Documents

NRCC-CXR-02-E COMMISSIONING CONSTRUCTION DOCUMENTS - General - Certificate of Compliance

#### A. GENERAL INFORMATION

Building Type:

**Proposed Revision:**

Change Building Type to **Occupancy Classification & Construction Type:**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

**16. NRCCs – Draft 2016 Nonresidential Compliance Documents**

NRCC-CXR-02-E COMMISSIONING CONSTRUCTION DOCUMENTS - General - Certificate of Compliance

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

Responsible Designer Name:	Responsible Designer Name:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

**Proposed Revision:**

Responsible <b><u>Person</u></b> Name:	Responsible <b><u>Person</u></b> Name:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

**Rationale:** This revision will provide consistency with the 2016-NRCC-CXR-01-E Design Review Kickoff Certificate of Compliance.

**17. NRCC-CXR-02-E User Instructions - Section A. General Information**

2. BUILDING TYPE is specified because code requirements and design decisions are influenced by building type. It is possible for a building to include more than one building type.

**Proposed Revision:**

2. **Occupancy Classification & Construction Type: is specified because the California Building Code classifies structures with respect to occupancy in one or more groups defined in Section 302. Construction type is specified because the California Building Code classifies buildings erected to be one of the five construction types defined in Sections 602.2 through 602.5.**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.



**18. NRCCs – Draft 2016 Nonresidential Compliance Documents**

NRCC-CXR-03-E CONSTRUCTION DOCUMENTS – Simple HVAC Systems Certificate of Compliance

**A. GENERAL INFORMATION**

Building Type:

**Proposed Revision:**Change Building Type to **Occupancy Classification & Construction Type:****Rationale:** This revision will provide consistency with other provisions within the California Building Codes.**19. NRCCs – Draft 2016 Nonresidential Compliance Documents**

NRCC-CXR-03-E COMMISSIONING CONSTRUCTION DOCUMENTS – Simple HVAC Systems Certificate of Compliance

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

Responsible Designer Name:	Responsible Designer Name:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

**Proposed Revision:**

Responsible <b><u>Person</u></b> Name:	Responsible <b><u>Person</u></b> Name:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

**Rationale:** This revision will provide consistency with the 2016-NRCC-CXR-01-E Design Review Kickoff Certificate of Compliance.**20. NRCC-CXR-03-E User Instructions - Section A. General Information**

2. BUILDING TYPE is specified because code requirements and design decisions are influenced by building type. It is possible for a building to include more than one building type.

**Proposed Revision:**

2. **Occupancy Classification & Construction Type: is specified because the California Building Code classifies structures with respect to occupancy in one or more groups defined in Section 302. Construction type is specified because the California Building Code classifies buildings erected to be one of the five construction types defined in Sections 602.2 through 602.5.**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

## 21. NRCCs – Draft 2016 Nonresidential Compliance Documents

NRCC-CXR-04-E COMMISSIONING CONSTRUCTION DOCUMENTS – Complex HVAC Systems  
Certificate of Compliance

### A. GENERAL INFORMATION

Building Type:

#### Proposed Revision:

Change Building Type to **Occupancy Classification & Construction Type:**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

## 22. NRCCs – Draft 2016 Nonresidential Compliance Documents

NRCC-CXR-04-E COMMISSIONING CONSTRUCTION DOCUMENTS – Complex HVAC Systems  
Certificate of Compliance

### RESPONSIBLE PERSON'S DECLARATION STATEMENT

Responsible Designer Name:	Responsible Designer Name:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

#### Proposed Revision:

Responsible <b><u>Person</u></b> Name:	Responsible <b><u>Person</u></b> Name:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

**Rationale:** This revision will provide consistency with the 2016-NRCC-CXR-01-E Design Review Kickoff Certificate of Compliance.

## 23. NRCC-CXR-04-E User Instructions - Section A. General Information

2. BUILDING TYPE is specified because code requirements and design decisions are influenced by building type. It is possible for a building to include more than one building type.

**Proposed Revision:**

- 2. Occupancy Classification & Construction Type: is specified because the California Building Code classifies structures with respect to occupancy in one or more groups defined in Section 302. Construction type is specified because the California Building Code classifies buildings erected to be one of the five construction types defined in Sections 602.2 through 602.5.**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

**24. NRCC-CXR-05-E COMMISSIONING – DESIGN REVIEW SIGNATURE PAGE****A. GENERAL INFORMATION**

Building Type:

**Proposed Revision:**

Change Building Type to **Occupancy Classification & Construction Type:**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

**25. NRCCs – Draft 2016 Nonresidential Compliance Documents****NRCC-CXR-05-E COMMISSIONING – DESIGN REVIEW SIGNATURE PAGE**

B. Date of Design Review Kickoff		
Owner/Owner's Representative (Print Name):	Signature:	Date:
Design Engineer (Print Name):	Signature:	Date:
Design Reviewer (Print Name):	Signature:	Date:

**Proposed Revision:**

B. Date of Design Review Kickoff		
Owner/Owner's Representative (Print Name):	Signature:	Date:
Design <b><u>Architect</u></b> /Engineer (Print Name):	Signature:	Date:
Design Reviewer (Print Name):	Signature:	Date:

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

**26. NRCCs – Draft 2016 Nonresidential Compliance Documents****NRCC-CXR-05-E COMMISSIONING – DESIGN REVIEW SIGNATURE PAGE**

<b>C. Date of Construction Document Checklist</b>	<b>//</b>
Checklists Completed:	
General Checklist – Completed by all Buildings	
HVAC Simple	
HVAC Complex	

Owner/Owner's Representative (Print Name):	Signature:	Date:
Design Engineer (Print Name):	Signature:	Date:
Design Reviewer (Print Name):	Signature:	Date:

**Proposed Revision:**

<b>C. Date of Construction Document Checklist</b>		<b>//</b>
Checklists Completed:		
General Checklist – Completed by all Buildings		
HVAC Simple		
HVAC Complex		
Owner/Owner's <b>Representative</b> (Print Name):	Signature:	Date:
Design <b>Architect</b> /Engineer (Print Name):	Signature:	Date:
Design Reviewer (Print Name):	Signature:	Date:

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

**27. NRCC-CXR-05-E User Instructions – Section A. General Information**

2. BUILDING TYPE is specified because code requirements and design decisions are influenced by building type. It is possible for a building to include more than one building type.

**Proposed Revision:**

2. **Occupancy Classification & Construction Type: is specified because the California Building Code classifies structures with respect to occupancy in one or more groups defined in Section 302. Construction type is specified because the California Building Code classifies buildings erected to be one of the five construction types defined in Sections 602.2 through 602.5.**

**Rationale:** This revision will provide consistency with other provisions within the California Building Codes.

**28. NRCC-CXR-05-E User Instructions - Section B. Date of Design Review Kickoff**

1. DATE OF DESIGN REVIEW KICKOFF is the date the meeting was held with the project owner, design engineer and design reviewer. This date must be consistent with NRCC-CXR-01-E.
2. The owner, design engineer and design reviewer must all print, sign and date under the DESIGN REVIEW KICKOFF section to document that they participated in the kickoff meeting.
3. The DATE OF CONSTRUCTION DOCUMENT CHECKLIST COMPLETION is the date that the NRCC-CXR-02-E through NRCC-CXR-04-E compliance documents were completed by both the design reviewer and design engineer and presented to the owner.

**Proposed Revision:**

1. DATE OF DESIGN REVIEW KICKOFF is the date the meeting was held with the project owner, **architect**, design engineer(s) and design reviewer. This date must be consistent with NRCC-CXR-01-E.
2. The owner, **architect**, design engineer and design reviewer must all print, sign and date under the DESIGN REVIEW KICKOFF section to document that they participated in the kickoff meeting.

3. The DATE OF CONSTRUCTION DOCUMENT CHECKLIST COMPLETION is the date that the NRCC-CXR-02-E through NRCC-CXR-04-E compliance documents were completed by both the design reviewer, and architect, design engineer and presented to the owner.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

## 29. NRCC-CXR-05-E User Instructions - Section C. Date of Construction Document Checklist

1. The CHECKLISTS COMPLETED section checkboxes must be completed for each of the three construction documents design review checklists indicating which were completed.
2. A second set of signatures by the owner or owner's representative, design engineer and design reviewer are required to indicate that all checklists were completed by both the design reviewer and the design engineer and the owner received copies of these completed compliance documents.

### Proposed Revision:

1. The CHECKLISTS COMPLETED section checkboxes must be completed for each of the three construction documents design review checklists indicating which were completed.
2. A second set of signatures by the owner or owner's representative, architect, design engineer and design reviewer are required to indicate that all checklists were completed by both the design reviewer and the design engineer and the owner received copies of these completed compliance documents.

**Rationale:** This revision will provide consistency with other provisions within the 2016 Building Energy Efficiency Standards.

Please contact me at 916-376-1715 should you have any questions regarding my comments.

Sincerely,



Diane Elliott  
Capital Outlay Program Manager