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ICC 1000

Application of the Commissioning Process

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CHAPTER 1: ADMINISTRATION

101 GENERAL

101.1 Purpose: This standard provides requirements relating to the application of the overall commissioning process described in commissioning process standards. This provides criteria for code officials, owners, and agencies to accept, implement, enforce and document the commissioning provisions established in codes and standards.

101.2 Scope: This standard establishes minimum requirements for the application of the process of commissioning as required by the local jurisdiction having authority.

102 APPLICABILITY

102.1 Applicability. The commissioning process of buildings and systems shall comply with this standard.

103 COMPLIANCE ALTERNATIVES

103.1 Compliance alternatives. Nothing in this standard is intended to prevent the use of alternatives to those prescribed by this standard, where equivalence is provided, and such equivalence is approved by the administrative authority adopting this standard.

104 REFERENCED DOCUMENTS

104.1 Reference documents. The codes and standards referenced in this standard shall be considered part of the requirements of this standard to the prescribed extent of each such reference. (See appendix D for additional industry standards and information on Commissioning)

* ASTM E2813-12, - Standard Practice for Building Enclosure Commissioning

105 SUBMITTAL DOCUMENTS

105.1 General. Submittal documents shall be prepared containing the information required by the applicable code, the authority having jurisdiction, and this section.

105.2 Commissioning documentation required at permit application. At the time of permit application, the following documentation and verification shall be provided for each system for which applicable codes require commissioning:

a. Where an Owner’s Project Requirements document is required by an applicable code or the code official, it shall be provided according to the requirements of Section 402.

b. Where a Basis of Design document is required by an applicable code or code official, it shall be...
provided according to the requirements of Section 404.

c. The preliminary Commissioning Plan has been developed according to Section 403.2.

d. Design documents include a requirement to perform commissioning in accordance with this standard and applicable codes, and the design documents have been reviewed by the Commissioning Provider according to Section 405 and 406.

105.3 Commissioning documentation required before final inspection or issuance of the certificate of occupancy. Prior to final inspection and issuance of the certificate of occupancy, documentation shall be provided (see checklists in Appendix C) demonstrating that the Final Commissioning plan was created prior to the start of functional and performance testing, and that the following commissioning work has been completed for each system for which applicable codes, standards, and the local jurisdiction require commissioning.

a. Materials, equipment, and systems submittals have been reviewed by the commissioning team for conformance to code requirements and project documentation, according to Section 407.

b. Commissioning Issue and Resolution Logs have been created and maintained and code required items completed in accordance with Section 408.

c. Equipment testing has been conducted and witnessed by the commissioning team, and is in accordance with Section 409 for all equipment and systems completed and commissioned before final inspection.

d. Project documents available at the time of final inspection have been assembled into the Systems Manual in accordance with Section 410 for all equipment and systems completed and commissioned before final inspection.

e. The building operations, maintenance, and facility staff has been trained on the installed and commissioned equipment and systems, in accordance with Section 411. The training plans and records shall be retained and updated for use in later training.

f. The preliminary commissioning report has been completed in accordance with Section 412 and provided to the owner for all equipment and systems completed and commissioned before final inspection.

105.4 Final Documentation. The final and record documents including; Issue and Resolution logs, Systems Manual and Commissioning Report shall be provided to the owner at project Commissioning completion. A copy will be provided to the code authorities when requested.

CHAPTER 2
ABREVIATIONS AND DEFINITIONS

201 GENERAL

201.1 General. For the purpose of this standard, the terms listed in Section 202 have the indicated meaning.

201.2 Undefined terms. The meaning of terms not specifically defined in this document or in referenced codes and standards shall have ordinarily accepted meanings such as the context implies.
201.3 Interchangeability. Words, terms and phrases used in the singular include the plural and the plural the singular.

Section 202

Acronyms

202.1 The following acronyms are used throughout the standard.

- BAS Building automation system
- BOD Basis of design
- CF Compliance Form
- Cx Commissioning
- CxA Commissioning Authority
- CxP Commissioning Provider
- EPA Environmental Protection Agency
- FT Functional Test
- PT Performance Test
- HVAC Heating, ventilating and air conditioning
- LEED Leadership in Energy and Environmental Design
- OCx On-Going Commissioning Process
- O&M Operations and maintenance
- OPR Owner’s project requirements

Section 203

Definitions

Acceptance: A formal action, taken by a person with appropriate authority (which may or may not be contractually defined) to declare that some aspect of the project meets defined requirements.

Basis of Design (BOD): A document that records the concepts, calculations, decisions, and product selections used to meet the Owner’s Project Requirements and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

Checklists: Project and element-specific checklists that are developed and used during all phases of the commissioning process to verify that the Owner’s Project Requirements are being achieved. Checklists are used for general evaluation, testing, training, and other design and construction requirements.

Commissioning: (Cx): Commissioning Process.

Commissioning Agency: An established and recognized agent or agency regularly engaged in conducting tests and furnishing commissioning services. The agency may consist of one or multiple individuals having applicable expertise. The Commissioning Agency can be a third-party commissioning provider or the owner’s in-house staff member.

Commissioning Authority (CxA): Commissioning Provider

Comment [JK4]: Should these be in an appendix?
**Commissioning Plan (Cx Plan):** A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the Commissioning Process. The commissioning plan establishes the commissioning process guideline for the project and the commissioning team’s level of effort by identifying the required commissioning activities to ensure that the OPR and the BOD are met.

**Commissioning Process:** A quality-focused process for enhancing the delivery of a project. The process focuses upon verifying and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the Owner's Project Requirements.

**Commissioning Progress Report:** A written document that details activities completed as part of the Commissioning Process and significant findings from those activities.

**Commissioning Provider (CxP):** An individual or agency identified by the owner that is responsible for the overall building commissioning process and who leads, plans, schedules, and coordinates the commissioning team to implement the Commissioning Process. Other commonly used terms for this individual or agency include, but are not limited to; commissioning authority or commissioning agent.

**Commissioning Specialist:** A individual who works on a project to conduct commissioning on a specific technical area or system.

**Commissioning Team:** The individuals and agencies that are responsible for implementing the Commissioning Process.

**Commissioning Testing:** The evaluation and documentation of the equipment and assemblies: delivery and condition; installation; proper function according to the manufacturer’s specifications, and project documentation to meet the criteria in the Owner’s Project Requirements.

**Construction Checklist:** A form used by the commissioning team to verify that appropriate materials and components are correctly installed, functional, and in compliance with the Owner’s Project Requirements.

**Construction Documents:** Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the element of a project necessary for obtaining a building permit.

**Contract Documents:** Documents that detail the Owner’s needs, as well as regulations, laws, and jurisdictional requirements. Contract Documents frequently include price agreements, construction management process, sub-contractor agreements or requirements, requirements and procedures for submittals, changes, and other construction requirements, timeline for completion, and the Construction Documents.

**Coordination Drawings:** Drawings showing the work of all trades to illustrate that equipment can be installed in the space allocated without compromising equipment function or access for maintenance and replacement. These drawings graphically illustrate and dimension manufacturers’ recommended maintenance clearances.
**Design Checklist**: A form developed by the commissioning team to verify that elements of the design are in compliance with the Owner's Project Requirements. Also see Checklists.

**Design Review – PEER**: An independent and objective technical review of the design of the Project or a part thereof, conducted at specified stages of design completion by one or more qualified professionals, for the purpose of enhancing the quality of the design.

**Design Review – Constructability**: Review of the proposed design, construction and field operation of a project to reduce or prevent errors, delays and cost overruns and determine conformance with project objectives.

**Design Review – Commissioning**: A review of the design documents to determine compliance with the Owner's Project Requirements, including coordination between systems and assemblies being commissioned, features and access for testing, commissioning and maintenance, and other reviews required by the OPR and commissioning plan.

**Evaluation**: The process by which specific documents, components, equipment, assemblies, systems, and interfaces among systems and their performance are confirmed with respect to the criteria required in the Owner's Project Requirements.

**Existing Building Commissioning Process**: A quality-focused process for attaining the Current Facility Requirements of an existing facility and its systems and assemblies being commissioned. The process focuses on planning, investigating, implementing, verifying, and documenting that the facility and/or its systems and assemblies are operated and maintained to meet the Current Facility Requirements, with a program to maintain the enhancements for the remaining life of the facility.

**Functional Test**: Functional Testing is the process of verifying that a material, product, assembly, or system is properly installed and operates in accordance with design and manufacturer's specifications.

**Commissioning Report**: A document that records the activities and results of the Commissioning Process and is developed from the Commissioning Plan with all of its attached appendices.

**Issues and Resolution Log**: A record of design, construction, and operations questions, problems or concerns from the owner, designers, contractors and the Commissioning Team during the course of the Commissioning Process.

**O&M manuals**: Documents that provide information necessary for the operation and maintenance of installed equipment and systems.

**On-Going Commissioning Process (OCx)**: A continuation of the Commissioning Process to improve the operation and performance of a facility to meet current and evolving Current Facility Requirements or Owner's Project Requirements. On-Going Commissioning Process activities occur throughout the life of the facility; some of these will be close to continuous in implementation, and others will be either scheduled or un-scheduled as needed.

**Owner**: The individual or entity holding title to the property on which the building is constructed.
Owner’s Project Requirements (OPR): A written document that details the requirements of a project and the expectations of how it will be used and operated. This includes project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information. (The term Project Intent or Design Intent is used by some owners for their Commissioning Process Owner’s Project Requirements.)

Owner’s Representative. An individual or entity assigned by the owner to act and sign on the owner’s behalf.

Performance Test (PT): Performance Testing is the process of verifying that a material, product, assembly, or system meets defined performance criteria. The methods and conditions under which performance is verified are described in one or more test protocols.

Process equipment. Energy-using equipment and components that are not used for HVAC, electrical, plumbing and irrigation operations. Such devices include, but are not limited to, heat transfer, water purifying, air cleaning, air vacuum and air compressing.

Re-Commissioning: (See Existing Building Commissioning.) An application of the Commissioning Process requirements to a project that has been delivered using the Commissioning Process.

Retro-Commissioning: (See Existing Building Commissioning.) The Commissioning Process applied to an existing facility that was not previously commissioned.

Sequence of operation. A written description of the intended performance and operation of each control element and feature of the equipment and associated systems based on a given set of anticipated operating conditions.

Systems Manual: A system-focused composite document that includes the design and construction documentation, facility guide and operation manual, maintenance information, training information, commissioning process records, and additional information of use to the Owner during occupancy and operations.

Test Procedure: A written protocol that defines methods, personnel, and expectations for tests conducted on components, equipment, assemblies, systems, and interfaces among systems to verify compliance with the Owner’s Project Requirements.

Training Plan: A written document that details the expectations, schedule, duration and deliverables of Commissioning Process activities related to training of project operating and maintenance personnel, users, and occupants.

Section 301

Commissioning Provider and Specialist

301.1 Commissioning. Where commissioning is required by code, local jurisdictions, and project documentation, it shall be performed by qualified and certified commissioning providers and specialists.
301.2 Commissioning provider and specialists requirements. Commissioning providers and specialists performing code required commissioning of any part of the commissioned systems shall be certified by an organization accredited to the criteria set forth in International Accreditation Service (IAS) AC 476

301.3 Verification. Documentation shall be submitted to the code official verifying certification of commissioning personnel.

Section 401
Commissioning Process

401.1 Commissioning Process Management: A qualified Commissioning Provider shall be designated to coordinate the commissioning process and the work of any Commissioning Specialists, and to submit the documentation required by code, and the jurisdiction. Qualified Commissioning Specialists shall be designated to commission systems for which specialized technical certification or licenses are required.

Where more than one system and more than one person or entity is involved in the commissioning process, there shall be a designated Commissioning Provider to coordinate the process and the documentation.

401.2 Documentation of Applicable Commissioning Code Requirements

The following documentation shall be provided for each instance of commissioning in an applicable code, standard, and jurisdictional requirement.

- Applicable code requirements, with code section reference numbers and including any performance, environmental, sustainability, or efficiency requirements of those codes;
- Description of technical approach to compliance;
- Equipment and systems to be commissioned; and
- Specific process requirements for the commissioning of each element, including: plans, reviews, logs, evaluation, testing, training, reports, and documentation.

Section 402
Owner’s Project Requirements

402.1 Contents. The contents of the Owner’s Project Requirements (OPR), for submission to the jurisdiction if required, shall include the following information applicable to the code requirements:

- Facility size, location, user requirements, including space usage, occupancy, operation and project schedules, codes, standards, and indoor environment requirements, including temperature, humidity, and ventilation.
- Commissioning process requirements, including: plans, contractor direction, reviews logs, testing, and reports.
- Equipment, systems and assemblies to be commissioned identified in a list with installation evaluation and testing requirements including: maintainability, access, acceptance criteria and operational performance requirements.
- Environmental, sustainability, and efficiency goals and benchmarks for code requirements.
e. Project documentation requirements and formats including; Basis of Design, Commissioning Plans and Reports, and the Systems Manual.

f. Training requirements for owner’s operation and maintenance personnel and occupants.

Section 403
Commissioning Plan

403.1 Commissioning Plan. The Preliminary Commissioning Plan and Final Commissioning Plan shall be provided as required in Sections 403.2 and 403.3.

403.2 Preliminary Commissioning Plan. At the time of permit application, a Preliminary Commissioning Plan based on applicable codes and standards shall be provided. Contents of the Preliminary Commissioning Plan shall comply with applicable code requirements and include:

a. Overview of the commissioning process

b. Commissioning schedules developed specifically for each phase of the project, from design through occupancy and operations;

c. General roles and responsibilities for the Commissioning Team throughout the project. The responsibilities shall delineate the duties of the commissioning providers, commissioning specialists, inspectors, contractors, suppliers, and other agencies;

d. Documentation of general communication channels including the distribution of the Commissioning Plan and documentation during the design and construction processes. This includes the development and utilization of the Issues and Resolution Logs and a preliminary listing of required reports including format, reviews and approvals;

e. Project construction design documentation review and submittal evaluation procedures and reports;

f. The list of building operations, systems and assemblies that will be commissioned and/or verified. Performance criteria shall be included when available and where not shown on the construction documents;

g. Format for commissioning checklists, commissioning testing forms, and Commissioning Progress Reports.

h. Guidelines and formats that will be used to develop the Systems Manual, Training Plans, and Final Commissioning Report; and

i. The procedures to follow whenever Commissioning Process evaluation results do not meet the code requirements, the OPR, or the construction document requirements.

403.3 Final Commissioning Plan: The Final Commissioning Plan shall be completed before the start of functional and performance testing. It shall update the contents and procedures in the Preliminary Commissioning Plan in Section 403.2 as required and include the following information:

a. Detailed description of Commissioning Process activities, the schedule of activities and the list of building operations, systems and assemblies that will be commissioned or inspected, including evaluation procedures and performance criteria.
b. Final listing of required reports including format, reviews and approvals. Detailed testing procedures and checklists for functional testing and performance testing for all commissioned equipment, systems and assemblies, including verification of sequences of operation and, where relevant, conditions under which the testing will be performed.

Section 404
Basis of Design

404.1 Basis of Design (BOD).

The BOD shall be completed at the start of the design phase of the building project, and updated as necessary during the design and construction phases.

404.2 Contents. The BOD document shall include compliance with the requirements of the applicable code, the jurisdiction, and the following:

a. Description of the design team’s proposed technical method to meet the requirements;

b. Coordination of applicable technical, standards, and code requirements as well as the commissioning requirements for systems and assemblies being commissioned;

c. Design criteria and design assumptions in agreement with the OPR and code requirements;

d. Requirements for sustainable design and other certifications when required; and

e. Requirements that systems, assemblies, and equipment be located, installed, commissioned and maintainable, and that training be provided to operations and maintenance staff.

Section 405
Commissioning Measures Shown in the Construction Documents

405.1 Commissioning requirements. Commissioning requirements for code required equipment, systems and assemblies shall be included in the design and construction processes and documents.

405.2 Contents. The project commissioning requirements in the construction documents shall include:

a. Commissioning specifications developed for all systems and assemblies being commissioned, and included in the construction documents;

b. Roles and responsibilities, communications requirements, issue resolution, meetings and schedules;

c. Documentation development, application and control requirements including commissioning checklists and system manual production and utilization;

d. Applicable Commissioning Process specifications and requirements that shall be included in all contracts with contractors, sub-contractors, suppliers, service providers, and manufacturers for equipment, systems and assemblies being commissioned; and
e. Requirements for contractors, sub-contractors suppliers, service providers, and manufacturers to provide the required testing and documentation as defined in the contract documents and commissioning plan.

Section 406
Commissioning Review of Design Documents

406.1 Commissioning requirements. Construction documents shall require the commissioning procedures required by code and by this standard for all applicable systems and equipment.

406.2 Commissioning Design Reviews. The Commissioning Provider shall review equipment and systems requirements in the design documents to evaluate compliance with commissioning requirements in applicable codes, standards, OPR and commissioning plan.

406.3 Design Review Response. The design team shall respond to the design review report and document the modifications made to the design documents prior to completion of the construction documents.

Section 407
Commissioning Review of Construction Submittals

407.1 Commissioning Submittal Reviews. A review of construction submittals for commissioned equipment, systems and assemblies shall be performed to evaluate compliance with project requirements, design documents and the commissioning plan.

407.2 List of Submittals. The Commissioning Provider shall identify those construction submittals required to be provided by the Contractor for review of the systems being commissioned by the commissioning team.

407.3 Submittal Report. The submittal review report shall include a listing of the submittals reviewed, the date reviewed and a summary of any properties or procedures identified that do not meet project requirements or reporting requirements of this standard.

Section 408
Commissioning Issue and Resolution Logs

408.1 The Commissioning Provider and Commissioning Team shall develop an Issues and Resolutions Log with supporting documentation including:

a. Procedures to maintain the issues and resolution log throughout the project until all issues are resolved or accepted by the Owner;

b. Procedures to distribute the logs to the Commissioning Team at intervals prescribed in the Commissioning Plan;

c. Resolution of each issue in the log with final approval by the owner for all non-compliant items that are not code required;
408.2 Contents. The contents of the Issue and Resolution Logs shall include:

a. All open and continuing issues, with status and the person or organization responsible for resolution;

Section 409
Commissioning Testing

409.1 Checklists and test procedures. The following shall be established and fully documented prior to testing.

a. Project-specific construction and startup checklists and commissioning testing checklists and procedures

b. Where test data results are required for specific equipment or systems, there shall be an item in the associated checklist for the test data to be submitted to the Commissioning Provider by the responsible party;

c. A listing of the entities responsible for executing each of the tests; and

d. A uniform and effective process to document Commissioning testing of and interaction between commissioned equipment and systems.

409.2 Evaluation. Evaluation of the equipment and systems shall include the following:

a. Verification that the installed equipment and systems match those defined in the construction documents and approved construction submittals;

b. Verification that the equipment and systems were properly installed, associated documentation meets contract requirements, and components are accessible for commissioning, testing and maintenance; and

c. Test results for the installed equipment and systems shall be compared to the relevant requirements of the project documents, specifications, submittals and codes;

409.3 Test reports. Completed test reports including checklists and test procedures shall be submitted to the project commissioning team for review and to the Commissioning Provider for evaluation and inclusion in the Commissioning Report.

Section 410
Project Documentation and Systems Manual

410.1 Systems Manual: The systems manual shall include documentation needed to understand, operate, and maintain the building’s equipment and systems. It shall be delivered to the building owner. A digital copy of the systems Manual shall be provided to the code official when requested. The systems manual shall include the documentation required by applicable codes and standards, and the commissioning plan.
410.2 Contents: The Systems Manual for all commissioned systems shall include:

a. Owners project requirements or current facility requirements and basis of design documentation when required for the project;

b. Construction record documents including; record plans, specifications and approved submittals;

c. Facility, systems and assemblies information including:
   1. Manufacturer’s operation and maintenance data for installed equipment, systems and assemblies including wiring diagrams and schematics;
   2. Warranties
   3. Contractor, supplier, or service agency listing and contact information;

d. A facility operations guide, including building and equipment operating schedules, set-points and ranges, sequences of operation, system and equipment limitations and emergency procedures;

e. Where training is provided, training plans, materials and records shall be included; and

f. A final commissioning report in accordance with Section 412.

410.3 Training. To the extent available the information in 410.2 a through d shall be completed and made available for the training process in Section 411.

Section 411. Training

411.1 Training and Training Plan. The construction documents shall require training of the facility’s operating and maintenance staff and include a training plan. The training plan shall include:

a. Outline of instructional topics related to the systems, subsystems, equipment, and assemblies required by code and the commissioning plan. These topics shall address the design, construction, operation, and maintenance of commissioned systems and equipment. A review and utilization of the Systems Manual shall be included in the training process.

b. Learning objectives and training delivery methods, locations and duration for each instructional topic in conformance to the Commissioning Plan.

c. Training materials and instructor requirements to be employed during the instructional process.

d. Format and requirements for the training report and records.
Section 412
Commissioning Report

412.1 Commissioning report. A commissioning report shall be completed and provided to the owner at the completion of the project commissioning process.

412.2 Contents. The contents of the commissioning report shall include:

a. Documentation of the commissioning activities included in the commissioning plan and those required by this standard and all applicable codes, including any delayed testing.

b. The final commissioning plan, including functional test and performance test procedures used for reproducible results and the criteria for test acceptance.

c. The list of code-required commissioning and the design and submittal reviews required by the Commissioning Plan.

d. The results of all evaluations, start-up data, functional tests, and performance tests, and reports in the commissioning plan and for code-required commissioning.

e. Issue logs and disposition of all issues and deficiencies found during testing and evaluation, including corrective measures used or proposed.

f. A resolution plan identifying any tests that are deferred and issues that are unresolved or incomplete, plus the conditions for completion and the individuals responsible for completion.
A.1 Commissioning Activities. The commissioning process shall include a series of activities and schedules that delineate the commissioning requirements, and the documentation of the performance results and training for the systems, and assemblies commissioned. The activities in the commissioning process shall include:

a. Initiation of the Commissioning Process and retention of the commissioning provider at the beginning of the project, determination of the roles and responsibilities of the project and commissioning teams and development and execution of procedures and contracts.

b. Project requirements determination and documentation, including the site and building scope, use and performance, contractor instruction, training, commissioning and documentation requirements. The deliverable for this activity is the Owner’s Project Requirements (OPR) document which is the criteria for the project, which is updated throughout the project.

c. Commissioning Plan development showing the commissioning scope, roles and responsibilities, communication procedures, and design and construction requirements for providing and integrating commissioning into the project. This Commissioning Plan is updated throughout the project with checklists, functional, and performance testing protocols and procedures, schedules and documentation details.

d. Design team determination and documentation of the design approach to meet the Owner’s Project Requirements. The commissioning provider reviews this Basis of Design (BOD) for conformance to the OPR.

e. Contractor, supplier and manufacturer requirements and specifications for the commissioning process included in the contract and construction documentation.

f. Commissioning provider reviews of the design documents for conformance to the OPR, and the design review report.

g. Commissioning team reviews of the materials and equipment submittals for conformance to the OPR and construction documents.

h. Commissioning team observation and verification of the installation and witnessing of the equipment start up and testing. At system completion, functional testing, and performance testing is conducted and documented in checklists, logs and reports to verify performance compliance with the OPR and design documents.

i. Project design and construction documents assembly into the systems manual that provides the details and history of the design and construction of the building, and information needed to properly operate the building.
j. Training of the building operations, maintenance, and facility staff on the installed and commissioned equipment and systems including use and application of the systems manual. The training plans and records are retained and updated for use in later training.

k. Commissioning logs and interim reports collected throughout the project and distributed as required by the commissioning plan. At the completion of the project, the commissioning report is assembled and provided to the owner and others as required by the OPR, project documents, and local jurisdiction requirements.

Appendix B:
Commissioning Process Documentation Required - Summary.

The following information applicable to the commissioning process shall be supplied as required for the commissioned systems:

1. An owners project requirements document (OPR), including requirements for commissioning identified in the adopted codes and standards complying with Section 402.1;
2. A project-specific commissioning plan that includes the elements listed in the 403.2 and 403.3; and a Preliminary Commissioning and Final Commissioning Plan.
3. A basis of design document (BOD) complying with Section 404.1 and 404.2;
4. Construction documents complying with the applicable code and containing the information in Section 405.1 and 405.2;
5. A project-specific commissioning review report that includes the information contained in Sections 406.2 through 406.4;
6. A project-specific commissioning review report that includes the information contained in Sections 407.2 through 407.3;
7. A project-specific issues and resolutions log that includes the elements listed in 408.2;
8. Documentation and reports in accordance with Section 409.2;
9. A project Systems Manual containing the information within Section 410.2;
10. A project-specific training plan and report containing the information listed in Section 411.2; and
11. A commissioning report containing the requirements identified in the adopted codes and standards and Section 412.2;
The following checklists and forms are provided to assist in the performance of the commissioning process. These can be used as checklists by the owner, designer, commissioning provider, code official and others to show compliance with the commissioning requirements. They can also be used as approval documents. These forms are not intended to be mandatory requirements of this standard unless so designated by the jurisdictional authority.

### CODE-REQUIRED COMMISSIONING COMPLIANCE FORM

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<tr>
<td></td>
<td>Commissioning Process</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Commissioning process scope and requirements, including logs, reviews, reports and listing of equipment and systems requiring commissioning, with installation, evaluation and testing requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment and Systems</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Commissioned equipment and system requirements, including maintainability, access, and operational performance requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Quality and Efficiency Requirements</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Environmental, sustainability, and efficiency goals and benchmarks where required by codes or jurisdiction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Documentation</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Project documentation requirements and formats including Commissioning Plans, Commissioning Reports, and Systems Manual.</td>
<td></td>
</tr>
</tbody>
</table>

**Commissioning Provider Acknowledgement**

I have reviewed the CRC document and verified that it includes all of the code required commissioning documentation listed in this form:

Name: ____________________________

Company Name: ____________________________

Agency Signature: ____________________________ Date: ____________________________
<table>
<thead>
<tr>
<th>ITEM #</th>
<th>CODE-REQUIRED COMMISSIONING DOCUMENTATION</th>
<th>DATE COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Project Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Code and Owner's Project Requirements (Section 402)</td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Preliminary Commissioning Plan (Section 403)</td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Final Commissioning Plan (Section 403)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Design Data</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Basis of Design, criteria and assumptions (Section 404)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Contractor and Construction Instructions</strong></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Plans and Specifications (Section 405)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Design Review</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Commissioning Design Documents Review and Report (Section 406)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Construction Submittal Review</strong></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Submittal Review and Report (Section 407)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Commissioning Issue and Resolution Log</strong></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Commissioning Issue and Resolution Log (Section 408)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Commissioning Testing</strong></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Completed Commissioning Checklists and Reports (Section 409)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Systems Manual</strong></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Project Documentation and Systems Manual (Section 410)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Training</strong></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Operations, Maintenance and Occupant Training (Section 411)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Commissioning Report</strong></td>
<td></td>
</tr>
<tr>
<td>11a</td>
<td>Preliminary Commissioning Report (Section 412)</td>
<td></td>
</tr>
<tr>
<td>11b</td>
<td>Final Commissioning Report (Section 412)</td>
<td></td>
</tr>
</tbody>
</table>

**Commissioning Provider Acknowledgement**

I have reviewed the project documents and verified that it includes all of the code required commissioning documentation listed in this form:

Name: ____________________________

Company Name: ____________________________

Agency Signature: ____________________________ Date: __________

Comment [JK19]: New checklist
**OWNER’S PROJECT REQUIREMENTS COMPLIANCE FORM**  
**CF-2 – Section 402**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>OWNER’S PROJECT REQUIREMENTS ITEMS</th>
<th>PAGE NUMBER IN OPR DOC.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Project Program</strong></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Facility size, location, user requirements, including space usage, occupancy, operation and project schedules and codes, standards and indoor environment requirements, including temperature, humidity, and ventilation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Commissioning Process</strong></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Commissioning process requirements, including: plans, contractor direction, reviews logs, testing, and reports.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Systems and Assemblies</strong></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Equipment, systems and assemblies to be commissioned identified in a list with installation evaluation and testing requirements including: maintainability, access, acceptance criteria and operational performance requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Environmental Quality and Efficiency Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Environmental, sustainability, and efficiency goals and benchmarks for code requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Documentation</strong></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Project documentation requirements and formats including; Basis of Design, Commissioning Plans and Reports, and Systems Manual.</td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Training requirements for owner’s operation and maintenance personnel and occupants</td>
<td></td>
</tr>
</tbody>
</table>

**Commissioning Provider Acknowledgement**

I have reviewed the OPR document and verified that it meets the owner’s project requirements:

Name: ____________________________  
Company Name: ____________________________  
Agency Signature: ____________________________ Date: __________

**Owner/Owner’s Representative Acknowledgement**

The OPR includes the items listed in this form and have been accepted by the owner or owner’s representative:

Name: ____________________________  
Owner [ ] Owner’s Representative [ ]  
Company Name: ____________________________  
Signature: ____________________________ Date: __________
# COMMISSIONING PLAN COMPLIANCE FORM

**CF-3 – Section 403**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>PRELIMINARY COMMISSIONING PLAN ITEMS Submitted with permit application</th>
<th>PAGE NUMBER IN Cx PLAN</th>
</tr>
</thead>
</table>

## General Project Information

a. Overview of the commissioning process.

b. Commissioning schedules developed specifically for each phase of the project, from design through occupancy and operations;

## Roles and Responsibilities

c. General roles and responsibilities for the Commissioning Team throughout the project. The responsibilities shall delineate the duties of the commissioning providers, commissioning specialists, inspectors, contractors, suppliers, and other agencies.

## Communication Channels

d. Documentation of general communication channels including the distribution of the Commissioning Plan and documentation during the design and construction processes. This includes the development and utilization of the Issues and Resolution Logs and a preliminary listing of required reports including format, reviews and approvals.

## Documentation and Submittal Review

e. Project construction design documentation review and submittal evaluation procedures and reports...

## Commissioned Systems and Assemblies

f. The preliminary list of building operations, systems and assemblies that will be commissioned and/or verified, including performance criteria.

## Checklists, Forms, Logs and Reports

g. Preliminary format for Commissioning checklists and testing forms and Commissioning Progress Reports.


h. Guidelines and formats that will be used to develop the Systems Manual, Training Plans, and Final Commissioning Report.

## Resolution Process

i. Procedures to follow whenever Commissioning Process evaluation results do not meet the code requirements or the construction document requirements.
### FINAL COMMISSIONING PLAN ITEMS

**Completed before start of functional testing activities**

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the Preliminary Commissioning Plan items have been updated</td>
<td>as required to reflect any project changes</td>
</tr>
<tr>
<td>a. Detailed description of Commissioning Process activities, the</td>
<td>schedule of activities and the list of operations, systems and assemblies that will be</td>
</tr>
<tr>
<td>commissioning or inspected, including evaluation procedures and</td>
<td>commissioned or inspected, including evaluation procedures and performance criteria.</td>
</tr>
<tr>
<td>performance criteria.</td>
<td></td>
</tr>
<tr>
<td>b. Final listing of required reports including format, reviews and</td>
<td>approvals.</td>
</tr>
<tr>
<td>approvals.</td>
<td></td>
</tr>
<tr>
<td>c. Detailed testing procedures and checklists for functional testing</td>
<td>Detailed testing procedures and checklists for functional testing and performance testing</td>
</tr>
<tr>
<td>and performance testing for all commissioned systems and assemblies,</td>
<td>for all commissioned systems and assemblies, including verification of sequences of</td>
</tr>
<tr>
<td>including verification of sequences of operation and, where</td>
<td>operation and, where relevant, conditions under which the testing will be performed.</td>
</tr>
<tr>
<td>relevant, conditions under which the testing will be performed.</td>
<td></td>
</tr>
</tbody>
</table>

#### Commissioning Provider Acknowledgement – Preliminary

I have reviewed the Preliminary Commissioning Plan and verified that it meets the requirements of this standard for code-required commissioning.

Name: ________________________________________________________________

Company Name _________________________________________________________

Agency Signature: _____________________________ Date: _________________

#### Commissioning Provider Acknowledgement – Final

I have reviewed the Final Commissioning Plan and verified that it meets the requirements of this standard for code-required commissioning.

Name: ________________________________________________________________

Company Name _________________________________________________________

Agency Signature: _____________________________ Date: _________________
BASIS OF DESIGN COMPLIANCE FORM  
CF- 4 – Section 404

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>BASIS OF DESIGN ITEMS</th>
<th>PAGE NUMBER IN BOD DOC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Approach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Description of the design team’s proposed technical method to meet the requirements.</td>
<td></td>
</tr>
<tr>
<td>Codes and Commissioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Coordination of applicable technical, standards, and code requirements as well as the commissioning requirements for systems and assemblies being commissioned</td>
<td></td>
</tr>
<tr>
<td>Criteria and Assumptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Design criteria and design assumptions in agreement with the OPR and code requirements.</td>
<td></td>
</tr>
<tr>
<td>Sustainability and Related Criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Requirements for sustainable design and other certifications when required.</td>
<td></td>
</tr>
<tr>
<td>Maintenance and Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Requirements that systems, assemblies, and equipment be located, installed, commissioned and maintainable, and that training be provided to operations and maintenance staff</td>
<td></td>
</tr>
</tbody>
</table>

Commissioning Provider Acknowledgement

I have reviewed the Basis of Design and verified that it meet the owner’s project requirements:

Name: ______________________________________________________________

Company Name: ______________________________________________________

Agency Signature: ____________________________ Date: _________________

Designer of Record

The Basis of Design include the items listed in this form and have been accepted

Name: ______________________________________________________________

☑ ☐

Company Name: ______________________________________________________

Signature: ____________________________ Date: _________________
### COMMISSIONING MEASURES IN CONSTRUCTION DOCUMENTS COMPLIANCE FORM
CF-5 – Section 405

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>SPECIFICATION ITEMS</th>
<th>PAGE NUMBER IN DESIGN REV. DOC.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>General Project Specification Information</strong></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Commissioning specifications developed for all systems and assemblies being commissioned, and included in the construction documents.</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Roles and responsibilities, communications requirements, issue resolution, meetings and schedules</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Documentation development, application and control requirements including commissioning checklists and system manual production and utilization.</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Applicable Commissioning Process specification and requirements that shall be included in all contracts with contractors, sub-contractors, suppliers, service providers, and manufacturers for systems and assemblies being commissioned.</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Requirements for contractors, sub-contractors, suppliers, service providers, and manufacturers to provide the required documentation as defined in the contract documents and commissioning plan.</td>
<td></td>
</tr>
</tbody>
</table>

### Commissioning Provider Acknowledgement

I have reviewed the design documents and verified that they meet the owner's project requirements:

Name: ____________________________________________________________________________

Company Name: ____________________________________________________________________

Agency Signature: __________________________ Date: ____________________________


## COMMISSIONING REVIEW OF DESIGN DOCUMENTS COMPLIANCE FORM

**CF-6 – Section 406**

### Commissioning Requirements

Construction documents shall require the commissioning procedures required by code and by this standard for all applicable systems and equipment.

### Commissioning Design Reviews

1. The Commissioning Provider shall review equipment and systems in the design documents to evaluate compliance with commissioning requirements in applicable codes, standards and commissioning plan.

### Design Review Response

1. The design team shall respond to the design review report and document the modifications made to the design documents prior to completion of the construction documents.

### Commissioning Provider Acknowledgement

I have reviewed the design documents and verified that they meet the owner’s project requirements:

- **Name:** ________________________________
- **Company Name:** ________________________________
- **Agency/Signature:** ________________________________ **Date:** ________________

---

**Project Name:** ____________________________________________

**Project Address:** ____________________________________________

**Permit Number:** ________________________________

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>COMMISSIONING SUBMITTAL REVIEW ITEMS</th>
<th>PAGE NUMBER IN DESIGN REV. DOC.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**COMMISSIONING REVIEW OF DESIGN DOCUMENTS COMPLIANCE FORM**

**CF-6 – Section 406**

DRAFT 5-10-14- GJKettler  Page 29
# COMMISSIONING REVIEW OF SUBMITTAL DOCUMENTS COMPLIANCE FORM

**CF-7 – Section 407**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>COMMISSIONING SUBMITTAL REVIEW ITEMS</th>
<th>PAGE NUMBER IN Cx REVIEW DOC.</th>
</tr>
</thead>
</table>

## Commissioning Submittal Reviews

**a** A review of construction submittals for commissioned systems and assemblies shall be performed to evaluate compliance with project requirements, design documents, and the commissioning plan.

## List of Submittals

**b** The Commissioning Provider shall identify those construction submittals required to be provided by the Contractor for review of the systems being commissioned by the commissioning team.

## Submittal Report

**c** The submittal review report shall include a listing of the submittals reviewed, the date reviewed and a summary of any properties or procedures identified that do not meet project requirements or reporting requirements of this standard.

## Commissioning Provider Acknowledgement

I have reviewed the submittals documents and verified that they meet the owner’s project requirements:

- **Name:** ____________________________
- **Company Name:** ____________________________
- **Agency’ Signature:** ____________________________ **Date:** ____________________________
### COMMISSIONING ISSUES AND RESOLUTION LOG COMPLIANCE FORM

**CF-8 Section 408**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>COMMISSIONING ISSUES AND RESOLUTION LOG ITEMS</th>
<th>PAGE NUMBER IN Cx ISSUES LOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>All open and continuing items, with status and responsible person or organization for resolution</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Procedures to maintain and distribute the issues and resolutions throughout the project until all issues are resolved</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Procedures to distribute the logs to the Commissioning Team at intervals prescribed in the Commissioning Plan;</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Resolution of each issue in the log with final approval by the owner for all non-compliant items that are not code required.</td>
<td></td>
</tr>
</tbody>
</table>

#### General Project Information

- All open and continuing items, with status and responsible person or organization for resolution

#### Checklists and Procedures

- Procedures to maintain and distribute the issues and resolutions throughout the project until all issues are resolved

#### Distribution

- Procedures to distribute the logs to the Commissioning Team at intervals prescribed in the Commissioning Plan;
- Resolution of each issue in the log with final approval by the owner for all non-compliant items that are not code required.

### Commissioning Provider Acknowledgement

I have reviewed the Issues Log and verified that it meets the owner’s project requirements:

- Name: ____________________________________________________________
- Company Name: ___________________________________________________
- Agency Signature: ___________________________ Date: ________________

### Owner/Owner’s Representative Acknowledgement

The Issues Log includes the items listed in this form and have been accepted by the owner or owner’s representative:

- Name: ____________________________________________________________
- Owner [ ] Owner’s Representative [ ]
- Company Name: ___________________________________________________
- Signature: ___________________________ Date: ________________
# COMMISSIONING TESTING COMPLIANCE FORM

**CF-9 – Section 409**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>COMMISSIONING TESTING ITEMS</th>
<th>PAGE NUMBER IN Cx TESTING DOC.</th>
</tr>
</thead>
</table>
| a      | Project-specific construction and startup
checklists and commissioning testing procedures; | |
| b      | Where test data results are required for specific equipment or systems,
there shall be an item in the associated Construction Checklist for the test
data to be submitted to the Commissioning Provider by the responsible
party; | |
| c      | A listing of the entities responsible for executing each of the tests; and | |
| d      | A uniform and effective process to document Commissioning testing of and
interaction between commissioned equipment and systems. | |

## Checklists and test procedures 409.1

- a. Verification that the installed equipment and systems match those
defined in the construction documents and approved construction
submittals;
- b. Verification that the equipment and systems were properly installed,
associated documentation meets contract requirements, and
components are accessible for commissioning, testing and
maintenance;
- c. Test results for the installed equipment and systems shall be compared to the relevant requirements of the specifications,
submittals and codes; and

## Evaluation 409.2

- a. Completed test reports including checklists and test procedures shall be submitted to the project team for review and to the
Commissioning Provider for evaluation and inclusion in the Commissioning Report.

## Commissioning Provider Acknowledgement

I have reviewed the Commissioning Testing documents and verified that it meets the owner’s project requirements:

Name: ________________________________

Company Name: ________________________________

Agency’s Signature: ____________________________ Date: ________________
## DOCUMENTATION AND SYSTEMS MANUAL COMPLIANCE FORM

### CF-10 – Section 410

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>SYSTEMS MANUAL ITEMS</th>
<th>PAGE NUMBER IN SYSTEMS MANUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Project requirements</strong></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Owners project requirements or current facility requirements and basis of design documentation when available for the project.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Construction Documents</strong></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Construction record documents including; record plans, specifications and approved submittals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Systems and Assemblies Information</strong></td>
<td></td>
</tr>
</tbody>
</table>
| c      | Facility, systems and assemblies information including:  
1. Manufacturer’s operation and maintenance data and warranties for installed equipment systems and assemblies including wiring diagrams and schematics.  
2. Warranties  
3. Contractor, supplier, or service agency listing and contact information |                             |
|        | **Operation Information** |                             |
| d      | A facility operations guide, including building and equipment operating schedules, set-points and ranges, sequences of operation, system and equipment limitations and emergency procedures. |                             |
|        | **Training** |                             |
| e      | Where training is provided, training plans, materials and records shall be provided. |                             |
|        | **Commissioning Report** |                             |
| f      | A final commissioning report in accordance with Section 412. |                             |

### Commissioning Provider Acknowledgement

I have reviewed the Systems Manual and verified that it meets the owner’s project requirements:

Name: __________________________________________________________

Company Name: _________________________________________________

Agency Signature: _____________________________________________  Date: ______

---
## TRAINING COMPLIANCE FORM

**CF-11 – Section 410**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>TRAINING ITEMS</th>
<th>PAGE NUMBER IN TRAINING PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Training Information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Outline of instructional topics related to the systems, subsystems, equipment, and assemblies required by code and the commissioning plan. These topics shall address the design, construction, operation, and maintenance of commissioned systems and equipment. A review and utilization of the Systems Manual shall be included in the training process.</td>
<td></td>
</tr>
<tr>
<td><strong>Objectives and Methods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Learning objectives and training delivery methods, locations and duration for each instructional topic in conformance to the Commissioning Plan.</td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Training materials and instructor requirements to be employed during the instructional process.</td>
<td></td>
</tr>
<tr>
<td><strong>Training Records</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Format and requirements for the training report and records</td>
<td></td>
</tr>
</tbody>
</table>

### Commissioning Provider Acknowledgement

I have reviewed the training plan and verified that it meets the owner’s project requirements:

Name: ________________________________

Company Name: ____________________________________________________________

Agency Signature: ________________________ Date: _________________
**COMMISSIONING REPORT SAMPLE COMPLIANCE FORM**

**CF12 – Section 412**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>COMMISSIONING REPORT ITEMS</th>
<th>PAGE NUMBER IN Cx Report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Commissioning Scope</strong></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Documentation of the commissioning activities included in the commissioning plan and those required by this standard and all applicable codes, including any delayed testing</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Commissioning Plan</strong></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>The final commissioning plan, including functional test and performance test procedures used and the criteria for test acceptance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Design Documents and Reviews</strong></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>The list of code-required commissioning and the design and submittal reviews required by the Commissioning Plan.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>System Evaluations</strong></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>The results of all evaluations, start-up data, functional tests, and performance tests, and reports for code-required commissioning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Reports</strong></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Issue logs and disposition of all deficiencies found during testing and evaluation, including corrective measures used or proposed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Issues and resolutions</strong></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>A resolution plan identifying any tests that are deferred and issues that are unresolved or incomplete, plus the conditions for completion and the individuals responsible for completion.</td>
<td></td>
</tr>
</tbody>
</table>

**Commissioning Provider Acknowledgement**

I have reviewed the commissioning report and verified that it meets the owner's project requirements:

Name: _____________________________________________________________

Company Name: _________________________________________________

Agency' Signature: __________________________ Date: _______________
This appendix is not a mandatory part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. The information in the following documents may or may not conform to the Commissioning Process in ASHRAE Standard 202-2013, The Commissioning Process for Buildings and Systems or this Standard.

ASHRAE Commissioning Information Publications

The following ASHRAE Guidelines and documents are available as ASHRAE publications. These can provide additional guidance on the Commissioning Process:

- Standard 202-2013 The Commissioning Process for Buildings and Systems
- Guideline 0-2005-2013, The Commissioning Process
- Guideline 1.1-2007, HVAC&R Technical Requirements for The Commissioning Process
- Guideline 1.4-2014, Procedures for Assembling Systems Manuals
- Guideline 1.5-2012, The Commissioning Process for Smoke Control Systems
- ASHRAE Applications Handbook-2011, Chapter 43, HVAC Commissioning
- ASHRAE Refrigeration Commissioning Guide

The following publications relating to the Commissioning Process are available from the publishing organization. These publications may or may not conform to the requirements of ASHRAE Standard 202-2013 or this standard.

- AABC Commissioning Group (ACG) – ACG Commissioning Guideline.
- ASTM E2813-12, - Standard Practice for Building Enclosure Commissioning
- Building Commissioning Association – Building Commissioning Handbook
  - Best Practices in Commissioning New Construction
  - Best Practices in Commissioning Existing Buildings
- National Environmental Balance Bureau (NEBB)– Procedural Standards for Building System Commissioning


- *Whole Building Design Guide, Commissioning*


U.S. General Services Administration, - *The Building Commissioning Guide-2005*

The following organization and agencies have produced information relating to the Commissioning Process that is available from the that organization. This information may or may not conform to the requirements of ASHRAE Standard 202-2013 or this standard. This list is provided as a resource for those using and providing commissioning services. Since publications can change frequently, the organization websites are the best source of current documents.


**ASTM International**, 100 Bar Harbor Drive, PO Box C700, West Conshokoken, PA, 19428-2959 E2813-12, [http://www.astm.org/standard/index.shtml](http://www.astm.org/standard/index.shtml)

**Building Commissioning Association (BCA)**, 1600 NW Compton Drive, Suite 200, Beaverton, OR 97006, [http://www.bcxa.org/knowledgcenter](http://www.bcxa.org/knowledgcenter)

**California Commissioning Collaborative (CCC)**, [http://www.cacx.org/resources/index.html](http://www.cacx.org/resources/index.html)


**Chartered Institution of Building Services Engineers (CIBSE)**, 222 Balham High Road, London, SW12 9BS, [http://www.cibseknowledgeportal.co.uk/cibse-commissioning-codes](http://www.cibseknowledgeportal.co.uk/cibse-commissioning-codes)


**International Code Council (ICC)**, 500 Ne Jersey Ave. NW, 6th Floor, Washington, DC 20001, [http://www.iccsafe.org/icc-q4-2012-guideline-for-commissioning-1.html](http://www.iccsafe.org/icc-q4-2012-guideline-for-commissioning-1.html)

National Environmental Balance Bureau (NEBB), 8575 Grovemont Circle, Gathersburg, MD 20877, http://www.nebb.org/resources/standards/

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 82169, http://nfpa.org/codes


Portland Energy Conservation Incorporated, 100 SW Main Street, Suite 1600, Portland, OR 97204 http://peci.org/resources

Sheet Metal and Air Conditioning Contractors National Association, 4201 Lafayette Center Drive, Chantilly, VA, 20151, http://www.smacna.org/technical