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WELCOME TO ADVANCED NEW BUILDING CONSTRUCTION COMMISSIONING - NBCX

ONLINE TRAINING

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5. CONSTRUCTION PHASE

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COMMISSIONING SPECIALIST CURRICULUM



NEXT



Learning Objectives

- Introduction
- Objectives
- Construction Phase Activities
- Commissioning Team

Construction phase commissioning involves installation, start-up, functional testing, documentation, and training. The commissioning team ensures that equipment, systems, and assemblies are installed, integrated, and working according to the Owner's Project Requirements during construction (OPR). Functional testing and documentation establish performance benchmarks, acceptability requirements, and a baseline for facility operation and commissioning.





Overview

- Commissioning continues from planning to implementation during construction. Pre-construction creates and integrates commissioning schedules. The CxP examines submittals for commissioned systems and develops field observation, testing, functional and performance requirements, and checklists in commissioning plans.
- A project scoping meeting trains and coordinates the commissioning team, general contractor, subcontractors, manufacturers, and suppliers.
- Building controls are integrated with other alarm and operating systems in additional meetings. The CxP keeps an issues and resolution log to inform the Cx team and owner of project issues.
- The commissioning report includes the final log, updated throughout the project. The commissioning plan requires contractors to perform installation field observations and checklists, depending on project organisation.
- The CxP reviews completed checklists and adjusts functional performance tests (FPT) and timetables. Contractors execute FPTs with the CxP as a witness to match construction schedules. FPT results are used to create a preliminary commissioning report that the owner and local authorities assess. Includes deficit rectification and off-season testing plans.

Objectives

- The Commissioning Plan (Cx Plan), the OPR, and BOD are updated.
- Commissioning team members understand their roles and responsibilities for the construction phase commissioning activities.
- Equipment, systems, and assemblies are properly installed, maintainable, and functioning properly as required to meet the OPR.
- The operations and maintenance (O&M) personnel are provided with complete and proper systems operating documentation.
- The O&M personnel, and occupants as needed, are properly trained. Training materials and documentation compiled to facilitate repeating training and training new staff in the future.

Commissioning Team

- Owner's representative
- Commissioning Provider (CxP) and sub-consultants
- Design team
- Construction Management Representative
- Contractors
- Building occupant or user group representatives
- Personnel responsible for the building's O&M

Construction Activities

1. Updates to the Cx Plan, BOD, and the OPR to reflect changes made to the project by their original creators.
2. Each project should be evaluated and when sufficiently advantageous to the success of the project, utilize electronic and cloud-based Cx management processes.
3. Integrate the Commissioning Schedule into construction schedule.
4. Conduct construction phase commissioning kick-off meeting.
5. Review submittals.
6. Hold construction phase controls integration meetings.
7. Develop the master list of commissioned equipment, systems and assemblies. This list may also be utilized by the owner for O&M purposes.
8. Develop list of special requirements.
9. Complete development of project specific Construction Checklists.
10. Develop functional testing procedures and test data forms.
11. Maintain Issue Log. The CxP maintains an Issues Log to document and track commissioning items that do not comply with the construction documents and OPR.
12. Conduct regularly scheduled commissioning coordination meetings.
13. Construction Checklists.



Construction Activities +

- Conduct regularly scheduled site visits.
- Assist project team with resolution of issues. The commissioning provider provides constructive input for the resolution of system deficiencies.
- Review Start-up Reports.
- CxP reviews requests for information and change orders of commissioned equipment. Comment as warranted to maintain the OPR.
- Review the Testing, Adjusting and Balancing (TAB) plan and report.
- Confirm Functional Test Readiness.
- Coordinate, execute and document functional testing.
- CxP reviews contractor as-built documents, warranties and O&M Manuals.
- Compile the Construction Phase Commissioning Report.
- Prepare the Commissioning Record.
- Assemble the Contractor's Project Turnover Documentation.
- Verify training of the owner O&M personnel and end users.





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