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MODULE 11

O&M, Systems Manual, CxA Report

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PRE- AND POST-OCCUPANCY PHASE COMMISSIONING PROCESS OVERVIEW

Pre- and post-occupancy typically commence at Substantial Completion, when the building is turned over to the Owner, although some construction phase activities may continue. In the Occupancy and Operations Phase, project closeout activities and long-term building performance maintenance and performance processes are developed and implemented.

Learning Objectives

- Introduction and Occupancy Phase Overview
- Commissioning Meetings
- Operations and Maintenance (O&M)
- Systems Manual
- Final Commissioning Report
- Seasonal or Delayed Tests and Training
- Warranty Activities
- Acceptance Phase Overview
- Optimisation and Adjustment
- Monitoring ,Ongoing CxA & Recommissioning

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INTRODUCTION

- The construction documents identify a milestone referred to as "substantial completion."
- Before a contractor can declare substantial completion, the construction specifications must clearly outline all requirements that must be met.
- As discussed in the preceding lecture, substantial completion requirements include the status of commissioning requirements' completion.
- Commissioning seeks to achieve Nevertheless, there are frequently valid reasons why certain commissioning tasks cannot be completed until after the facility has been occupied.

COMMISSIONING MEETINGS

The Commissioning Provider (CxP) leads Cx Team meetings during Occupancy and Operations. The CxP may meet with the project manager, owner or owner's representative, occupants, end users, and O&M staff.Cx Team meetings during the Occupancy and Operations Phase may cover the following topics:

- Seasonal testing.
- Operations and maintenance (O&M) staff training
- Post-construction project site walk-through.
- Warranty activities.
- Ongoing commissioning (OCx), including monitoring-based commissioning (MBCx),
- Current Facility Requirements (CFR) development
- Energy management and sustainability priorities
- Preventive maintenance planning
- System manual development
- Final Commissioning Report Development



OPERATIONS AND MAINTENANCE (O&M)

- After the project is finished, effective facility operations and maintenance (O&M) procedures, detailed documentation of commissioned building systems, and comprehensive O&M staff training should help maintain building system performance.
- The commissioning provider (CxP) should consider O&M from project initiation to final occupancy and operations during comprehensive building systems commissioning.
- Commissioning activities and deliverables focus on O&M documentation and staff training.
- Building engineers perform most daily O&M on building systems.
- The building engineering team works closely with facility management or property management to ensure occupant and end user satisfaction.



SYSTEMS MANUAL

- The Systems Manual is a comprehensive compilation of instructions and guidelines for operating and maintaining the building's systems.
- In the Owner's Project Requirements (OPR) or Current Facility Requirements (CFR), the Commissioning Plan (Cx Plan), and the project specifications, the necessary contributions to the Systems Manual should be specified in detail.
- If the Systems Manual is kept up-to-date and relevant, the information can be used for reference, training, operations, and performance evaluation of building systems.
- Consider the Systems Manual to be a one-stop shop for all available information regarding the operational building systems.
- The CxP should approach the development of the systems manual from the owner's perspective first and foremost.



FINAL COMMISSIONING REPORT

- The Commissioning Provider (CxP) delivers the Final Commissioning Report to the owner during the Occupancy and Operations Phase, completing the building systems commissioning process.
- The CxP's final commissioning plan (Cx Plan) guides the report's structure.
- Although the CxP assembles and writes parts of the Final Commissioning Report, other project team members contribute content.
- The Commissioning Design Review and CxP design review meeting notes and minutes are included in the Final Commissioning Reports, which are not in the Cx Plan.
- The Final Commissioning Report includes the CxP's comments on design document reviews and OPR/CFR and BoD development.



FINAL COMMISSIONING REPORT +

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FINAL COMMISSIONING REPORT+

Standard 202 outlines the following minimum consensus-required elements of the Final Commissioning Report:

- Executive summary.
- Copy of the final CX Plan
- Copies of the final OPR and BoD (or references to their locations).
- References to the location of project record drawings
- Copies of the design document and construction submittal review reports
- Copies of checklists completed by contractors and suppliers
- Copies of testing procedures and report forms.
- Copies of start-up, observation, and testing reports
- Copies of Commissioning Progress Reports
- Copy of the Issues and Resolution Log



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