



The Commissioning Process for Delivering Quality Constructed Projects ***Daily Agenda: In-person Courses***

MONDAY

- 7:30 *Registration / Check-in*
- 8:00 Welcome and Introductions
- 8:30 Overview of the Commissioning Process (CxP)
- What is the ASHRAE Guideline 0 commissioning process?
 - Current best practice
 - What is a quality delivery process?
 - Benefits of the commissioning process
 - What occurs in each phase of project delivery?
- 11:15 Pre-Design Phase Commissioning Tasks (Part 1)
- Developing the owner's project requirements (OPR)
 - Owner's workshop: preparation and participants, Nominal Group Technique (NGT), procedures and results
- 12:00 *Lunch*
- 1:00 The Owner's Project Requirements Workshop
- Executing an OPR workshop
 - Determining which questions to ask – project success criteria
 - Class activity: workshop in action
- 3:15 Pre-Design Phase Commissioning Tasks (Part 2)
- Planning the CxP effort
 - Commissioning plan fundamentals, key milestones, structure
 - Evaluating the benefits of pre-design phase involvement
 - The CxP as a strategic quality plan
- 4:15 Workshop: Defining CxP Needs
- 5:00 *Daily Adjournment*

TUESDAY

- 8:00 Workshop Reports
- 8:15 Developing the OPR Document
- Review of key OPR concepts
 - Typical information required
 - Steps in document creation
 - Review of example document

- 9:45 CxP Activities in the Design Phase
- Pre-design meetings
 - Design checklists
 - Basis of design development
 - CxP design review process
 - CxPlan update
- 10:45 Design Review Workshop
- Group workshop using the four steps of a CxP design review procedure
- 12:00 *Lunch*
- 1:00 Design Review Workshop continues
- 1:30 Commissioning Specifications
- Format options
 - Types of requirements: contractor participation; maintainability; checklist implementation; shop drawings, training, and systems manual; testing and verification
- 3:00 Commissioning Process Checklists
- Purpose, goals
 - Use in all project phases
 - Construction checklists: development, tracking methods, verification, statistical sampling, checklist work session
- 4:00 Systems Manual and Training
- Systems manual (role in all phases)
 - Training (role in all phases)
- 4:55 *Daily Adjournment*
- 5:00 University of Wisconsin CxP Certification Exam Review (part 1, for 1 hour)

WEDNESDAY

- 8:00 Construction Phase CxP Tasks
- Pre-construction activities (pre-bid, workshops, partnering)
 - Cx meetings and coordination, role of the CxA
 - Tracking commissioning activities
 - Cx schedule
 - Testing
 - Commissioning reports
 - Benefits/issues log
- 9:30 Commissioning Process Tests
- Developing test protocols
 - Confirmation of readiness
 - Implementation steps
 - Documentation
- 10:30 Test Development Workshop

- 11:20 Integrating CxP with Contractor Efforts
- Quality processes
 - Overlaps and gaps
- 12:00 *Lunch*
- 1:00 Electronic and Web-Based Commissioning Tools
- Computer tools for site tracking
 - Electronic systems manuals
- 1:30 Acceptance Phase, First Year of Operation, and Beyond
- Training
 - Systems manual
 - Project CxP report(s)
 - Warranty review and seasonal testing
 - On-going commissioning
- 2:00 Analyzing the Benefits of Commissioning: Case Studies
- Scope of commissioning
 - Detailed cost analysis
 - Benefits and lessons learned
- 2:45 Special Topics in the CxP
- Review of LEED Cx process
 - Review of existing building Cx process
- 4:00 *Course Adjourns*