Existing Building Commissioning Guidelines
(ASHRAE Guidelines 0.2 & 1.2)

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Overview

ASHRAE Guidelines for EBCX Best Practices

- General description and context
- EBCX Process and Specific Tasks
- Comparison to New Commissioning
- Terminology
- Keys Concepts
- Characteristics of a CX Provider for EBCX
Title, Purpose & Scope:

“The Commissioning Process for Existing Building Systems and Assemblies”

- **Purpose:** The purpose of this guideline is to describe the procedures, methods, documentation requirements and physical activities of the commissioning process using the principles developed in **ASHRAE Guideline 0**, The Commissioning Process.
- **Scope:** This guideline applies to existing building systems and assemblies.
ASHRAE Guideline 1.2

Title, Purpose & Scope:
“HVAC&R Technical Requirements of the Commissioning Process for Existing Building Systems and Assemblies”

• **Purpose:** The purpose of this guideline is to describe the technical requirements of the commissioning process for existing HVAC&R systems and assemblies, based on the processes described in ASHRAE Guideline 0.2P-200X, The Commissioning Process for Existing Systems and Assemblies.

• **Scope:** The guideline applies to existing HVAC&R systems and assemblies.

HVAC&R TECHNICAL REQUIREMENTS GUIDELINE
Terminology

• What is the difference between:

  “Retrocommissioning”
  and
  “Recommissioning”?

• Guideline is for “Existing Building Commissioning” – EBCX
  o Covers all existing buildings
  o Acknowledges if CX previously:
    - some steps may not be needed
    - same level of effort not required
Overall Process: Flow Chart/Major Tasks

FLOW IS NOT LINEAR
Process is typically ITERATIVE
(loops between tasks)

Multiple Facility Planning
Assessment
Investigation
Implementation
Hand-off
On Going Commissioning
Multiple Facility Planning

Multiple Facilities

Yes

Assemble EBCxP Planning Team

Define EBCxP Program Goals & Objectives

Assemble and Rank Facilities

Develop EBCxP Program Plan

No

Decision To Proceed

Yes

To Assessment Phase

To Assessment Phase
Assessment

- Define Owner’s EBCxP Objectives
- Conduct EBCxP Planning Meeting
- Document EBCxP Goals and Objectives
- Select Initial EBCx Team
- Develop Current Facility Requirements (CFR)
- Perform Facility Assessment
- Develop Initial EBCxP Plan
- Develop EBCxP Assessment Report

Resolution of Issues

Decision To Proceed

Yes → To Investigation Phase

No
Investigation

Assemble EBCxP Investigation Team

Conduct Investigation Planning Meeting

Review Existing System Records

Update EBCxP Plan

Perform Site Investigation and Testing

Perform Issue and Opportunity Analysis

Yes

Additional Investigation

Create Investigation Report

Resolution of Issues

No

Decision To Proceed

Yes

To Implementation Phase
Implementation

Select Recommendations

Select EBCxP Implementation Team

Incorporate Informal Training

Update the EBCxP Plan

Implement Recommendations

Verify Completed Recommendations

Update EBCxP Report for Implementation Report

Yes

To Investigation

No

New Discovery

To Hand-off Phase

Capital Project

Yes

Implement Capital Projects

Commissioning of Capital Project

Create Commissioning Report

No
Hand Off

- Develop On Going Commissioning Plan
- Update and Complete Systems Manual
- Provide Project Documents to Owner
- Train Facility Personnel
- Verify Training Effectiveness
- Conduct Lessons Learned Workshop
- Update Systems Manual & EBCxP Plan Report

Resolution of Issues

Owner Acceptance

Yes → Ongoing Commissioning

No → Resolution of Issues
Ongoing Commissioning

Assemble OCx Team

Update OCx Plan

Verify Achievement of Current Facility Requirements

Investigate Unacceptable Performance or Outcome

Implement Corrective Actions

Update Systems Manual

Update Facility Personnel Training

Write/Deliver OCx Report

Resolution of Issues

Owner Acceptance

Yes

No
Comparison: Overall Process

Existing Building – Gdl 0.2

Multiple Facility Planning
Assessment
Investigation
Implementation
Hand-Off
On Going Commissioning

New Construction – Gdl 0

Pre-Design
Design
Construction
Occupancy & Operation
On Going Commissioning
Terminology

Existing Buildings
- CFR
- MACFR
- EBCX Plan
- Issues Log
- List of Findings & Recommendations

New Buildings
- OPR
- BOD
- CX Plan
- Issues Log

- EBCX Report
- Systems Manual: Facility Guide
- On-Going CX Plan
- Implementation/Plan

- CX Report
- Systems Manual
- Facility Guide
- On-Going CX Plan
- Construction/Design
Key Concepts

Success:

- Recommendations improve facilities
- Don’t stop at investigation
- On-going process
- Not too cost prohibitive
- Document and verify benefits
- Fit the operation to current need
Key Concepts

Current Facility Requirements (CFR)

• Establish before you begin
• Involve Key stakeholders
• What will make the facility a success?
• Not going back to Original Design
• Update through life of building
Key Concepts

Maintaining Benefits (Persistence)

• Training
• Systems Manual
• On-Going Commissioning
• Build in features to assist
• Document means to achieve CFR (MACFR)

STOP SAVING THE SAME KWH OVER & OVER
Key Concepts

Investigation/Testing

• Quick Fixes
• Targeted
• Testing – Everything?
• 80/20 Rule
Key Concepts

Training
• Systems Manual
• Facility Guide
• Involve staff throughout process
• Informal & Formal
• Evaluate Training
• Update in On-going CX
Key Concepts

Measurement & Verification

• Quantify benefits
• Verification of improvements
• Approach Appropriate
  o Match requirements
  o Agree with owner
  o Fits size and scope
• Repeatable
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