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ASHRAE Guideline 1.2-2019
Technical Requirements for the Commissioning Process for Existing HVAC&R Systems and Assemblies

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NOTE

Approved addenda, errata, or interpretations for this guideline can be downloaded free of charge from the ASHRAE website at www.ashrae.org/technology.

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(This foreword is not part of this guideline. It is merely informative and does not contain requirements necessary for conformance to the guideline.)

FOREWORD

ASHRAE Guideline 1.2 presents an organized, quality-oriented process for planning, assessing, investigating, implementing, verifying, and documenting that improves the performance of HVAC&R facilities, systems, and assemblies to meet defined operational requirements and criteria for the facility. Guideline 1.2 uses the same numbering format as Guideline 0.2 for the for the first three numerals in the section numbering. Therefore, sections that are purely process descriptions in Guideline 0.2 will not be used in this document.

1. PURPOSE

1.1 The purpose of this guideline is to provide requirements for the application of the Commissioning (Cx) Process described in ASHRAE Guideline 0.2 to existing heating, ventilating, air-conditioning, and refrigerating (HVAC&R) systems and assemblies.

2. SCOPE

2.1 This guideline applies to the procedures, methods, and documentation requirements for each phase of the Commissioning (Cx) Process applied to existing HVAC&R systems and assemblies, including:

a. Development of facility goals and Current Facility Requirements (CFR)
b. Discovery and evaluation of available documentation for existing HVAC&R systems
c. Evaluation of the condition of existing HVAC&R systems
d. Development of a prioritized Cx Plan, including schedule and budget estimates
e. Development of recommendations
f. Implementation of recommendations
g. Verification of completed recommendations
h. Development of Systems Manual
i. Training of facility personnel
j. Development of Cx Reports
k. Ongoing commissioning (OCx) activities

2.2 This guideline focuses on the following:

a. Energy use
b. Operations and Maintenance (O&M)
c. Indoor Environmental Quality (IEQ)

3. DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

Terms defined in ASHRAE Guideline 0.2, *The Existing Building Commissioning Process*, also apply to this guideline.

Facility Guide: similar to an operator's manual, the Facility Guide is intended to provide the basic information necessary for the building operations staff to operate the building on a day-to-day basis. It includes a simple description of the building systems and their normal operation, schedules, set points, and limitations. The Facility Guide also includes routine maintenance for the systems to keep them in good condition but not major maintenance or repair functions. Scheduled start-up and shut-down functions should be included. Refer to ASHRAE Guideline 1.4, *Systems Manual* for additional information.

3.2 Initialisms and Acronyms

AHJ	=	authority having jurisdiction
BAS	=	building automation system
CFR	=	Current Facility Requirements
Cx	=	Commissioning Process
CxP	=	Commissioning Provider
EBCx	=	Existing Building Commissioning
FG	=	Facility Guide
FPT	=	functional performance test
HVAC&R	=	heating, ventilating, air conditioning, and refrigeration
IEQ	=	indoor environmental quality
M&V	=	measurement and verification
O&M	=	operations and maintenance
OCx	=	Ongoing Commissioning
TAB	=	testing, adjusting, and balancing

4. PROCESS OVERVIEW

4.1 Refer to ASHRAE Guideline 0.2 for process overview.

4.1.1 Objectives. Heating, ventilating, air conditioning, and refrigeration (HVAC&R) covers a wide range of interests and issues. As such, Guideline 1.2 limits its scope to three main areas:

a. Energy
b. Operations and maintenance (O&M)
c. Indoor environmental quality (IEQ)

The Existing Building Commissioning (EBCx) Process may require the team to address energy and water simultaneously when the HVAC&R system's associated energy and water use may be linked or intertwined, as in cooling load and evaporative cooling.

4.2 The EBCx Process is highly cost effective for improving existing HVAC&R systems. Experience shows many projects pay for themselves in one to three years. The total cost to the Owner of the EBCx project consists of several factors: the Commissioning Provider's (CxP's) cost; staff time; additional costs for improvements, repair, or replacement of equipment; and the cost of specialty consultants and contractors. EBCx is only cost effective when recommendations are implemented, so even though the cost of these recommendations are unknown until after the investigation, it is important that money and resources are set aside from the beginning to implement both low- and higher-cost recommendations. Utility and government incentive programs may offset a portion of the direct costs. Older or less-well-maintained facilities may need to budget for greater costs compared to facilities in better condition.

4.2.1 The funding mechanisms for EBCx projects can take many forms, from direct-funding to financing from savings.