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Application of the Commissioning Process to New HVAC&R Systems

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PREVIEW

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

FOREWORD

The Commissioning Process (Cx) is a quality-oriented process for verifying and documenting that the performance of facilities, systems, and assemblies meets defined objectives and criteria. The commissioning provider team uses a variety of methods and tools to verify that a project is achieving the Owner's Project Requirements (OPR) throughout the delivery of the project.

Cx procedures and requirements for the commissioning provider team are fully covered in ASHRAE Guideline 0, The Commissioning Process for New Buildings and New Systems, and ANSI/ASHRAE/IES Standard 202, The Commissioning Process Requirements for New Buildings and New Systems. These documents provide adequate guidance for implementing the Cx for all new building assemblies and systems for buildings. The Cx procedures for existing buildings, systems, and assemblies are found in ANSI/ASHRAE Standard 230, Commissioning Process for Existing Buildings and Systems; ASHRAE Guideline 0.2, The Commissioning Process for Existing Systems and Assemblies; and ASHRAE Guideline 1.2, Application of the Commissioning Process to Existing HVAC&R Systems.

To further assist owners, design teams, commissioning provider teams, contractors, and building/facility engineering, operations, and maintenance teams or staff, a number of supporting Cx technical guidelines have been developed or are under development. This particular guideline provides specific guidance on applying the Cx to new HVAC&R systems in buildings and facilities.

The Cx begins at project inception (during the Predesign Phase) and continues for the life of a facility (through the Occupancy and Operations Phase). The Cx includes specific tasks to be conducted during each phase to verify that design, construction, and training meet the OPR. ASHRAE Guideline 1.1 describes the specific tasks necessary to successfully implement the Cx for new HVAC&R systems and assemblies.

Due to the integration and interdependency of most systems in a facility, a performance deficiency in one system can result in less than optimal performance by other systems. Although Guideline 1.1 focuses on HVAC&R systems, a successful total building Cx will carefully validate interfaces and possible interferences between all building systems. Even though HVAC&R is often the primary focus of the Cx, coordination among disciplines is essential for success.

Informative Appendix A of this guideline assists with the implementation of the Cx to HVAC&R systems and assemblies. This appendix is based on current industry practice and illustrates application of the Cx to a variety of HVAC&R systems and equipment. This document also references SSPC 300 Informative Annexes. Informative Annexes have been developed by the ASHRAE SSPC 300 committee to provide coordinated and clear descriptions of common terms and concepts utilized in the Cx. These Informative Annexes should be viewed as examples of how to develop and define ongoing communications and planning tools including, but not limited to, the Owner's Project Requirements, Basis of Design, and Commissioning Plan documents.

Annexes are documents that constitute a subordinate, informative part of more than one commissioning standard or guideline. They are maintained as unique documents and referenced by number in relevant commissioning standards and guidelines. For example, the annex describing the issues and resolution log is referenced by multiple standards and guidelines in the ASHRAE SSPC 300 family, because it applies in most applications of the Cx, but it exists as a single document for easier maintenance and better clarity.

Note that the SSPC 300 Informative Annexes referenced in this document are hosted on the ASHRAE website. All annexes in the ASHRAE SSPC 300 family can be found at ***www.ashrae.org/xxxxxxxxxxxxxxxx****.*

In addition to the annexes, the website provides SSPC 300 Examples/Other Supplementary Informative Materials (also found at www.ashrae.org/xxxxxxxxxxxxxx), which include sample checklists, test procedures, and other supplemental data used specifically for this guideline.

1. PURPOSE

1.1 The purpose of this guideline is to provide specific technical detail that augments ASHRAE Guideline 0, *The Commissioning Process for New Buildings and New Systems*, and ANSI/ASHRAE/IES Standard 202, *The Commissioning Process Requirements for New Buildings and New Systems*, specific to commissioning new heating, ventilating, air-conditioning, and refrigerating (HVAC&R) systems.

2. SCOPE

2.1 This document provides specific commissioning content that expands on application of the Commissioning Process (Cx) contained in ASHRAE Guideline 0 and ANSI/ASHRAE/IES Standard 202 for each

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