HVAC SYSTEMS COMMISSIONING MANUAL

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SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC.
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SECOND EDITION 2013

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FOREWORD

Commissioning includes the final act of verifying compliance with project specifications and the owner's project requirements. The term commissioning has evolved to represent a total quality management process in the construction trades. It includes demonstrating and verifying system and subsystem operational performance and is a detailed testing and documentation of building systems and components. Finally, it is the foundation of and includes training provided to facility managers to be used by building management throughout the operational life of the building. While commissioning can be applied to all components of a structure, this manual only focuses on the HVAC systems and the parties responsible for the proper design, installation, verification, operation, and maintenance of these systems.

HVAC systems are typically the most energy intensive systems in a building. HVAC systems can be the source of indoor air quality (IAQ) problems or the vehicle to the solution of those problems. Poorly designed, improperly installed, or inadequately maintained HVAC systems can cause high operating costs, occupant discomfort, affecting the long term financial viability of a building. The purpose of this manual is to introduce the commissioning process and to provide all stakeholders an understanding of the skills and expertise required to apply the concepts to the most critical element in most buildings—the HVAC system. Contractors who understand the process will be in position to offer this service to building owners and designers. Owners who understand the value commissioning adds to their building will demand it be an integral part of the construction process.

The original group tasked with developing the first edition of this standard, the SMACNA Building Services Committee, decided to introduce the commissioning process as a multi-level concept applicable to projects large and small, simple and complex. The current task force agreed with multi-level concept which is continued in this edition. The manual treats the subject in sufficient detail to provide a professionally run organization, with a commitment to the total quality management process, the tools to direct the activities of a commissioning team. The concept of commissioning an existing building which is sometimes called re-commissioning or retro-commissioning is covered in this standard. The commissioning process can be utilized in renovation and retrofit projects as well as part of an ongoing building maintenance program for any building.

New to this edition is a chapter on LEED® projects. As the United States Green Building Council is evolving and changing its system for rating buildings it is important that all parties involved in these types of projects be familiar with the changing requirements. LEEDv3 (2009) is the basis for the chapter on LEED® commissioning requirements.

The manual includes sample specifications and sample commissioning reports. Also included are samples of commissioning checklists for a wide variety of HVAC systems and components. Although these checklists are comprehensive, they are intended as guidelines to develop forms specific for the building or components being commissioned. Since each building and its systems are unique, forms used in the commissioning process are customized for the equipment and systems involved and to reflect the requirements of the commissioning authority.

This manual will be updated in the future as industry needs change and evolve. Continuing efforts will be made to provide the industry with the latest methods and engineering data from recognized sources, supplemented by SMACNA research, the services of local SMACNA chapters, and the growing experience base of SMACNA contractors.

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