

**CHAPTER 16**  
**COMMISSIONING**

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## 16.1 GENERAL

This chapter provides general guidance regarding commissioning of building systems. The specific commissioning team members, activities, and level of rigor should be tailored to individual projects based on size, complexity, and the planned quality management. The requirements or guidelines in this chapter are specifically written for medium-high complexity MILCON projects. Lower levels of commissioning may be suitable for small, low-complexity projects. Example: a project with several small split-systems with no direct digital controls may only require the typical USACE contractor quality control and quality assurance. Higher levels of commissioning may be necessary for large, very complex projects. Example: Complex laboratory projects or hospitals.

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## 16.2 CRITERIA

Commissioning requirements for Army, Air Force, and other Department of Defense facilities are outlined by UFC 1-200-02 High Performance and Sustainable Building Requirements, ASHRAE Standard 189.1 Standard for the Design of High-Performance Green Buildings, and Engineering Regulation 1110-345-723 Systems Commissioning Procedures. If a project has a Leadership in Energy and Environmental Design (LEED) requirement, commissioning requirements are imposed by the LEED Rating Systems.

## 16.3 COMMISSIONING SPECIALIST

By default, the construction contract shall require the construction or design-build contractor to hire the commissioning specialist for the project. USACE will provide quality assurance level oversight of the process and participate as an Owner's representative in the commissioning procedures.

Louisville District can accommodate independent or 3<sup>rd</sup> party commissioning specialists at the request of the funding agency. USACE will either self-perform or hire a commissioning specialist directly or through an A-E firm. This is a recommended approach for very complex projects or when the USACE construction field office does not have the appropriate personnel to sufficiently oversee the commissioning process.

A combination of the approaches described may be used for extremely complex projects wherein the contractor hires a commissioning specialist to organize and coordinate the contractor and sub-contractors, develop very detailed procedures, etc. while an independent, USACE-hired commissioning specialist with relevant specialized experience provides close oversight of the processes and procedures and coordinates the interests a variety of stakeholders.

### 16.3.1 CONTRACTOR HIRED COMMISSIONING SPECIALIST

Specification 01 46 00.00 06 Total Building Commissioning (Contractor Hired CxA) shall be used when the construction or design-build contractor is required to hire a commissioning specialist. The contractor will be required to organize and coordinate the entire commissioning process while USACE ensures that the processes and procedures implemented conform to contract requirements and participates as the Owner's representative.

### 16.3.2 INDEPENDENT COMMISSIONING SPECIALIST

USACE in-house personnel have first right of refusal as the commissioning specialist for any project that requires independent or 3<sup>rd</sup> party commissioning. In the event the in-house personnel do not have sufficient capacity or capability, the commissioning specialist will be hired through the A-E IDIQ.

A task order to hire a commissioning specialist must be developed for each individual project. Applicable criteria and needs vary from project to project; therefore, the task order scope of work must be tailored specifically for each project. Early in pre-solicitation phase of the project, the USACE PE/A must engage the Louisville District commissioning coordinator to determine how to implement independent or 3<sup>rd</sup> party commissioning and to develop a scope of work for the commissioning specialist.

## **16.4 SPECIFICATIONS**

Construction or Design-Build projects in the Louisville District shall use the LRL specifications 01 46 00.00 06 Total Building Commissioning (Contractor Hired CxA) or 01 46 00.10 06 Total Building Commissioning (Independent CxA).

Specification 01 46 00.00 06 is to be used when the construction or design-build contractor will be required to provide the commissioning specialist. Specification 01 46 00.10 06 is to be used when USACE has hired a commissioning specialist to work with the construction or design-build contractor.

The appropriate specification shall be edited in accordance with the specifier notes therein and shall be included in the solicitation of the construction or design-build contract.

## **16.5 COMMISSIONING DESIGN REVIEW**

Projects using 3<sup>rd</sup> party or independent commissioning shall have the commissioning specialist review the design documents, the Owner's Project Requirements, and the Basis of Design document with the interim submission. The commissioning specialist shall also review the final submission and backcheck comments. Commissioning comments shall be entered and addressed through DrChecks similar to other required design reviews.

## **16.6 COMMISSIONING DOCUMENTS**

### **16.6.1 OWNER'S PROJECT DOCUMENTS**

The Owner's Project Requirements (OPR) document shall be developed by the AE preparing the design or design-build RFP. A design-build RFP shall not serve as the OPR document. The OPR shall include the information required by LEED and ASHRAE Standard 189.1 and shall be attached to the project commissioning specification as an appendix.

The AE shall have the OPR complete prior to the interim submission of the design documents for review by the commissioning specialist.

### **16.6.2 BASIS OF DESIGN**

The Basis of Design (BOD) document shall be developed by the designer of record. The AE shall prepare the BOD for design-bid-build projects and include it as an appendix to the project commissioning specification. A draft BOD shall be completed prior to the interim submission of the design documents for review by the commissioning specialist. For design-build projects, the design-build contractor's design team develops the BOD.

### **16.6.3 COMMISSIONING PLAN**

The Commissioning Plan will be developed by the commissioning specialist. For 3<sup>rd</sup> party or independent commissioning projects, the AE shall attach the Commissioning Plan to the project commissioning specification for both design-bid-build and design-build projects. For other projects, the contractor's commissioning specialist develops the Commissioning Plan.

**16.6.4 CHECKLISTS**

Example commissioning checklists are included in the commissioning specification templates. For projects with a contractor hired commissioning specialist, the AE shall retain the example checklists as appendices in the commissioning specification. The commissioning specialist will be required to provide project specific checklists.

For design-bid-build projects with 3<sup>rd</sup> party or independent commissioning, the commissioning specialist shall develop and provide project specific checklist which the AE shall attach as appendices to the commissioning specification. For design-build projects with independent commissioning, the AE shall retain the example checklists or provide examples prepared by the commissioning specialist as appendices in the commissioning specification.

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