

ATTACHMENT

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SECTION 01810 - GENERAL COMMISSIONING REQUIREMENTS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. OPR and BoD documentation are included by reference for information only.

1.2 SUMMARY

- A. Section includes general requirements that apply to implementation of commissioning without regard to specific systems, assemblies, or components.
- B. Related Sections:
 - 1. Division 1 Section "Sustainable Design Requirements".
 - 2. Division 1 Section "Commissioning of HVAC" for commissioning process activities for HVAC&R systems, assemblies, equipment, and components.

1.3 DEFINITIONS

- A. BoD: Basis of Design. A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.
- B. Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.
- C. CxA: Commissioning Authority.
- D. OPR: Owner's Project Requirements. A document that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.
- E. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.

1.4 COMMISSIONING TEAM

- A. Members Appointed by Contractor(s): Individuals, each having the authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, representatives of Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.

B. Members Appointed by Owner:

1. CxA: The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. Owner will engage the CxA under a separate contract.
2. Representatives of the facility user and operation and maintenance personnel.
3. Architect and engineering design professionals.

1.5 OWNER'S RESPONSIBILITIES

- A. Provide the OPR documentation to the CxA and Contractor for information and use.
- B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.
- C. Provide the BoD documentation, prepared by Architect and approved by Owner, to the CxA and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

1.6 CONTRACTOR'S RESPONSIBILITIES

- A. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:
 1. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
 2. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
 3. Attend commissioning team meetings held on a schedule determined by the CxA.
 4. Integrate and coordinate commissioning process activities with construction schedule.
 5. Review and accept construction checklists provided by the CxA.
 6. Complete construction checklists as Work is completed and provide to the Commissioning Authority on a weekly basis.
 7. Review and accept commissioning process test procedures provided by the Commissioning Authority.
 8. Complete commissioning process test procedures.

1.7 CxA'S RESPONSIBILITIES

- A. Organize and lead the commissioning team.
- B. Provide commissioning plan.
- C. Convene commissioning team meetings.
- D. Provide Project-specific construction checklists and commissioning process test procedures.
- E. Verify the execution of commissioning process activities using random sampling. The sampling rate may vary from 1 to 100 percent. Verification will include, but is not limited to, equipment submittals, construction checklists, training, operating and maintenance data, tests, and test reports to verify compliance with the OPR. When a random sample does not meet the requirement, the CxA will report the failure in the Issues Log.
- F. Prepare and maintain the Issues Log.

- G. Prepare and maintain completed construction checklist log.
- H. Witness systems, assemblies, equipment, and component startup.
- I. Compile test data, inspection reports, and certificates; include them in the systems manual and commissioning process report.

1.8 SYSTEMS TO BE COMMISSIONED

- A. HVAC Equipment and System:
 - 1. Variable Flow Refrigerant System
 - 2. Dedicated Outdoor System
 - 3. Seismic Controls For Mechanical Piping and Equipment
 - 4. Air Cooled Condensing Units
 - 5. Makeup Air Systems
 - 6. Air Handling Units
 - 7. Centrifugal Fans
 - 8. Fire/Smoke Dampers
 - 9. Automatic Temperature Controls
 - a. Include intentional sequence of operation.
 - 10. Kitchen Hoods
 - 11. Outside Air Intakes
 - 12. Intake Louvers
 - 13. Carbon Monoxide Detection System
 - 14. Infrared Heating Systems
 - 15. Dehumidifiers
 - 16. Ductwork
 - 17. Automotive Exhaust System
 - 18. Testing, Adjusting, and Balancing
- B. Electrical Equipment and System:
 - 1. Lighting Control Systems
 - 2. Lighting Control Programs
 - 3. Fire Alarm and Interface Items with HVAC
 - 4. Security/Access Control System
 - 5. Packaged Engine Generator
- C. Plumbing System:
 - 1. Domestic Water Heater
 - 2. Air Compressor and Dryer
 - 3. Storm Water Oil and Grit Separators
 - 4. Plumbing Fixtures
 - 5. Packaged Booster Pump
 - 6. Domestic Water Treatment
- D. Fire Protection System:
 - 1. Diesel-Drive Centrifugal Fire Pump and Accessories

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION