

## **PART 1 – GENERAL**

The commissioning process is to certify to the Port of Seattle that Mechanical and other related systems, equipment, and controls function together properly to meet performance requirements, acceptance criteria, and design intent in accordance with the contract documents.

### **1.01      MECHANICAL SYSTEM COMMISSIONING**

All Projects will be commissioned. The level of commissioning will be defined by the Port of Seattle Project Manager based on the complexity and critical nature of systems and equipment to sustain operations at the Port. At a minimum, the HVAC, Utility (Steam, Chilled Water, Natural Gas, Compressed Air, Fuel, DDC, etc.), Lighting and Control, Domestic Hot Water, Pump, and Renewable Energy Systems shall be commissioned as they apply to projects. All systems and equipment will be commissioned in accordance with the project.

A. The commissioning process will incorporate the below listed consecutive commissioning phases:

1. Designate Commissioning Authority
2. Document Owner Project Requirements
3. Conduct Commissioning Design Review
4. Develop and Implement Commissioning Plan. The Plan shall be developed during the design phase of the project.
5. Review Contractor Submittals
6. Installation verification checklist
7. Pre-operational checklist
8. Functional testing and Performance Trending. Process shall be in accordance with the project.
9. Develop deficiency reports
10. Review O&M manuals
11. Participate and observe in training
12. Complete Final Commissioning Report

B. If the project is pursuing LEED certification, additional commissioning requirements may be required.

**1.02      DESIGN CRITERIA**

Mechanical system design shall incorporate complete testing of mechanical system and components prior to commissioning. Design shall incorporate provisions to test and commission at design conditions and in all modes of operation. All systems and equipment to be commissioned to be agreed upon by the Port of Seattle Project Team.

**1.03      PERFORMANCE STANDARDS**

Performance standards shall be developed by the designer to meet the owner's requirements as a benchmark to evaluate acceptance criteria and functional testing results to performance standards. Performance standards will be specified within each technical section under Division 15, subsection "General" labeled "Performance Standards."

**1.04      ACCEPTANCE CRITERIA**

Detailed acceptance criteria will be developed by the designer defining functional testing requirements. Functional testing will be performed by the contractor to prove system and equipment performance meets the acceptance criteria. Acceptance criteria will be specified within each technical section under Division 15, subsection "Execution" labeled "Functional Testing Requirements."

**1.05      SYSTEMS AND EQUIPMENT LIST**

Designer with Port Project Manager or the Port's Commissioning Agent will edit Division 1, "Commissioning" Section System and Equipment list for specific project requirements.

**1.06      COMMISSIONING SUBMITTAL REQUIREMENTS**

Designer will review with Project Manager Port of Seattle's submittal checklist to define specific project requirements.

**1.07      COMMISSIONING SUPPORT**

Provide Commissioning team with materials & information required for system Commissioning. Inspects & assure contractor installation and system/equipment meet design intent and specified standards. Resolve issues as defined during the

Commissioning process, respond to RFI's or clarifications for design intent & system/equipment performance. Sign off that final system/equipment installation & performance meets design criteria & performance.

**1.08      REPORT REQUIREMENTS**

- A. The Commissioning Plan will be required to be submitted and approved prior to construction commencement phase of project.
- B. The Final Commissioning Report will be required to be submitted and approved prior to final acceptance and project turnover. The report shall be comprised of the following sections:
  - 1. Executive Summary
  - 2. Verification of Commissioning Design Review
  - 3. Verification of Construction Submittal Review
  - 4. Pre-Operational Checklist
  - 5. Functional Testing
  - 6. Deficiency Reports
  - 7. Verification of O&M Review
  - 8. Verification of Training
  - 9. Performance & Trending Report

END OF SECTION