SECTION 21 08 00

COMMISSIONING OF FIRE PROTECTION SYSTEMS

PART 1 – GENERAL

1.1 PURPOSE

A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 **LESSONS LEARNED AND DESIGN CONSIDERATIONS**

A.

1.3 SUMMARY

A. This Section includes commissioning process requirements for Fire Protection systems, assemblies, controls, and equipment.

B. This project will have selected building systems commissioned. The equipment and systems to be commissioned are specified “SECTION 01 91 00 – GENERAL COMMISSIONING REQUIREMENTS”.

1.4 RELATED SECTIONS

A. SECTION 01 91 00 - COMMISSIONING GENERAL REQUIREMENTS
B. SECTION 22 08 00 – COMMISSIONING OF PLUMBING SYSTEMS
C. SECTION 23 08 00 – COMMISSIONING OF HVAC SYSTEMS
D. SECTION 26 08 00 – COMMISSIONING OF ELECTRICAL SYSTEMS
E. SECTION 28 08 00 – COMMISSIONING OF FIRE ALARM SYSTEMS

1.5 DEFINITIONS

A. Refer to section 01 91 00 - GENERAL COMMISSIONING REQUIREMENTS

1.6 REFERENCES

A. NFPA 3 Standard for Commissioning of Fire Protection and Life Safety Systems, 2021

1.7 SUBMITTALS

A. Certificate Of Readiness, signed by the Contractor, certifying that systems, assemblies, equipment, components, and associated controls are ready for testing.

B. Manufacturer’s completed start-up reports for equipment and systems.

1.8 CONTRACTOR'S RESPONSIBILITIES

A. Reference Project Specification Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS for details of contractor’s responsibilities related to commissioning.

B. Perform commissioning tests at the direction of the CxA.

C. Attend commissioning meetings.

D. Provide information requested by the CxA for functional testing and for final commissioning documentation.

E. Provide measuring instruments and logging devices to record test data, and provide data acquisition equipment to record data for the complete range of testing for the required test period.

F. Functional testing of systems will be carried out solely by contractor’s personnel, under the direction of CxA. Provide experienced personnel, familiar with the systems being installed under this project.

1.9 CxA'S RESPONSIBILITIES

A. Reference Project Specification Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS for details of contractor’s responsibilities related to commissioning.

B. CxA will direct commissioning testing.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 GENERAL TESTING REQUIREMENTS

A. Equipment Testing and Acceptance Procedures: Testing requirements are specified in Division 21 Sections. Provide submittals, test data, inspector record, and certification to the CxA.
B. Reference Project Specification Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS for detailed requirements of commissioning of Mechanical systems.
C. Provide technicians, instrumentation, and tools to perform commissioning test at the direction of the CxA.
D. Test all operating modes, interlocks, control responses, and responses to abnormal or emergency conditions, and verify proper response of building automation system controllers and sensors.
E. Tests will be performed using design conditions whenever possible.

3.2 SYSTEM START-UP

A. Contractor is solely responsible for system start-up. CxA may, at his discretion, witness start up procedures, but will not perform any Functional Testing of systems until Contractor has completed start-up and resolved all operating deficiencies and has so certified.

3.3 TESTING PREPARATION

A. Certify that Fire Protection systems, subsystems, and equipment have been installed, calibrated, and started and are operating according to the Contract Documents.
B. Certify that testing, adjusting, and balancing procedures for Fire Protection systems have been completed and submitted, discrepancies corrected, and corrective work approved.
C. Set systems, subsystems, and equipment into operating mode to be tested (e.g., normal shutdown, normal auto position, normal manual position, unoccupied cycle, emergency power, and alarm conditions).
D. Inspect and verify the position of each device and interlock identified on checklists.
E. Check safety cutouts, alarms, and interlocks with life-safety systems during each mode of operation.

3.4 FUNCTIONAL TESTING / GENERAL

A. Reference Project Specification Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS for detailed requirements of commissioning of Plumbing systems.
B. Provide measuring instruments to record test data as directed by the CxA.

3.5 PIPING SYSTEMS

A. Pipe system cleaning, flushing, hydrostatic tests, and chemical treatment requirements are specified in Division 22 piping Sections. Plumbing Contractor shall prepare a pipe system cleaning, flushing, and hydrostatic testing plan. Provide cleaning, flushing, testing, and treating plan and final reports to the CxA. Include sequence of testing and testing procedures, description of equipment for flushing operations, drawings for each pipe sector, showing the physical location of each designated pipe test section, minimum flushing water velocity, and chemical treatment plan.

3.6 DEFERRED TESTING

A. Initial commissioning will be done as soon as contract work is completed, though building may not be at full occupancy and equipment may not be at full loading.
B. If adequate load may be artificially placed upon heating or cooling equipment, CxA, at his discretion, may perform functional testing during non-peak load periods. If testing cannot be carried out under these conditions to adequately verify system performance, testing will be deferred until such time as conditions are more satisfactory.
    1. Contractor is to provide services of personnel and participate in deferred or seasonal testing process in the same manner as he would in non-seasonal testing.
    2. If tests cannot be completed because of a deficiency outside the scope of the Plumbing system, document the deficiency and report it to the Owner. After deficiencies are resolved, reschedule tests.

END OF SECTION