

## SECTION 15945

### CONTROLS TESTING AND ACCEPTANCE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. This section describes requirements for operational verification of the controls system.

##### 1.2 DESCRIPTION

- A. Provide the services of an agent independent of the HVAC control system installer to provide certification that the controls are installed and functioning as designed. The agent may be the Tenant's Engineer. The agent shall submit documentation demonstrating at least 4 years experience in commissioning HVAC controls.
- B. Loop damping and stability shall be verified through trend logging and charting of control loop controlled and feedback variables.
- C. Verification of installation and performance shall consist of the following:
  - 1. Installation Examination: Perform on-site Installation check out and start-up of each control point of the control system installation to verify each element of the control system is properly installed and is functioning.
  - 2. Functional Test Requirements: An on-site functional test to verify each controlled device is functioning according to the sequences of operation, and that all control loops are stable in their operation.

##### 1.3 SUBMITTALS

- A. Submit qualifications of the controls commissioning agent.
- B. Submit Certificate of Controls Completion. Certificate shall attest to:
  - 1. The Installation Examination has been complete, and all elements are installed correctly. Attach completed checklists.
  - 2. The Functional Test has been completed and that all controls are operating according to the sequences of operation, and that control loops are stable in operation. Attach completed checklists, point logs and trend logs demonstrating proper functioning of the system.

#### PART 2 - PRODUCTS - NOT USED

#### PART 3 - EXECUTION - NOT USED

END OF SECTION