

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 23 05 01 - Common Work Results for Mechanical.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Demonstrate operation and maintenance of equipment and systems to Departmental Representative's personnel two weeks prior to date of substantial performance.
- .2 Departmental Representative: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed-upon times.
- .3 Preparation:
 - .1 Verify conditions for demonstration and instructions comply with requirements.
 - .2 Verify designated personnel are present.
 - .3 Ensure equipment has been inspected and put into operation in accordance with contract documents.
 - .4 Ensure testing, adjusting, and balancing has been performed in accordance with Section 23 05 01 and equipment and systems are fully operational.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative's approval.
- .3 Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
- .4 Give time and date of each demonstration, with list of persons present.
- .5 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

1.4 QUALITY ASSURANCE

- .1 When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:
 - .1 Instruct Departmental Representative's personnel.
 - .2 Provide written report that demonstration and instructions have been completed.
Products

1.5 DEMONSTRATION AND TRAINING

- .1 The Contractor shall provide the services of competent instructors who will provide instruction to designated personnel in the adjustment, operation and maintenance, including pertinent safety requirements, of the equipment and system specified. The training shall be oriented toward the system installed rather than being general "canned"
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training course. Instructors shall be thoroughly familiar with all aspects of the subject matter they are to teach.

- .2 Provide one (1) - eight (8) hour day of classroom instruction. One (1) comprehensive training manual (English) shall be provided for each trainee which describes in detail the data included in each training program. All equipment and material required for classroom training shall be provided by the Contractor.
- .3 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times, at the equipment location.
- .4 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.
- .5 Review contents of manual in detail to explain aspects of operation and maintenance.
- .6 Prepare and insert additional data in operations and maintenance manuals when needed during instructions.
- .7 Training Program:
 - .1 Operating personnel will be trained in the functional operations of the system installed and the procedures that the operators will employ for system operation. This phase shall be augmented with on-the-job training during the fifteen (15) day acceptance period. Training shall include the following:
 - .1 General EMCS architecture (overview).
 - .2 On-site review of all system components with brief descriptions of functions and details.
 - .3 System Communications (overview).
 - .4 Operator interface functions for control of HVAC systems (detailed).
 - .5 Control descriptive logic (detailed for each system).
 - .6 Report generation (overview).
 - .7 Elementary preventative maintenance (detailed).
 - .1 General equipment layout.
 - .2 Troubleshooting of all EMCS components.
 - .3 Preventative maintenance of all EMCS components.

Sensors and controls maintenance and calibration.

Part 2 Products

2.1 NOT USED

- .1 Not Used
 - .1 Not Used
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Part 3	Execution
3.1	NOT USED
.1	Not Used
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