

SECTION 230515 - INSTRUCTIONS AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

1.2 SCOPE

- A. Provide complete written and verbal operating and maintenance instruction to the Owner for all mechanical systems.

1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division 23 and to all other applicable portions of the Drawings and Specifications.
- B. This section directly relates in particular to sections which describe the following:
 - 1. Valves and piping systems components requiring maintenance and which are involved in the dynamic function of the systems.
 - 2. Pumps and related flow devices.
 - 3. Plumbing equipment (heat exchangers, packaged systems, etc.)
 - 4. HVAC equipment (all air handling equipment, terminal units, filter assemblies, etc).
 - 5. Control systems.

PART 2 - PRODUCTS

2.1 INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Provide Maintenance Manuals in PDF format as follows:
 - 1. Title sheet with job name, Contractor's, subcontractor's control subcontractor and related contractor's or material supplier's names, addresses and phone numbers.
 - 2. Index of contents.
 - 3. A signed copy of acknowledgment of instructions to the Owner or his authorized representative. Two additional copies of the signed acknowledgment shall be sent directly to the Architect as soon as possible after receipt.
 - 4. Operating instructions for the Owner's personnel describing the following for each piece of equipment and systems:
 - a. How to start and stop each piece of equipment.
 - b. How to set equipment and systems for normal operation.
 - c. Normal restarting procedures before contacting the service contractor.
 - d. Complete description of functions and operations of each piece of equipment including description of how equipment operates in conjunction with automatic control systems.

- e. Instructions for cleaning, oiling, greasing, fueling and similar tasks.
- 5. Approved shop drawings and submittal data and parts and maintenance booklet for each item of material and equipment furnished under this Division, including (but not limited to) the following:
 - a. Spare parts list and source of supply for each equipment item.
 - b. List of valves with location, service, size, model and operating position.
 - c. Diagrams clearly indicating automatic control hook-up.
- 6. Any as-built wiring diagrams as called for in other sections of this division as needed to show how equipment controls interface with related systems.
- 7. Copies of certificates of inspection.
- 8. Guarantees.

PART 3 - EXECUTION

3.1 VERBAL INSTRUCTION

- A. Provide verbal, hands-on, operating and maintenance instruction to Owner's authorized personnel for each equipment item and system. Instruction shall be given by competent personnel.
 - 1. Duration: Total instruction period for all systems of this Division 23 shall be not less than fifteen (15) working days. The Owner reserves the right to audio-tape or video-tape the instruction procedure.

3.2 MANUFACTURERS' SERVICE REPRESENTATIVES

- A. Verbal instruction at the site for the following equipment items and systems shall be given jointly by the contractor and the authorized manufacturer's service representative. (Contractor and manufacturer's service representative shall provide instruction to Owner for each equipment item of no less duration than the hours indicated in parenthesis. Duration shall be greater if otherwise specified).
 - 1. Air Handling Units. (48 hours)
 - 2. Terminal Units. (8 hours)

END OF SECTION 230515