SECTION 019310 OPERATION AND MAINTENANCE MANUALS

A. General

Submit six copies of all manufacturer's operation and maintenance manuals and data pertinent to equipment supplied for the project. Prepare and organize the material in three-ring binders with divider tabs and labels. Include a table of contents. Include an electronic copy with the entire submittal in PDF format on cd.

B. Submittals

1. Submittals shall include:

   a. List of equipment furnished for project with name, address, and telephone number of each vendor.

   b. List of serial numbers of equipment furnished.

   c. A copy of shop drawings for mechanical, electrical, and instrument equipment in final form.

   d. Manufacturer's operation and maintenance instructions and parts lists.

2. Provide manuals for each piece of equipment including individual components and subsystems of complete assemblies. Line out nonapplicable text and illustrations. The section of the manual on operation shall describe the functions and limitations of each component and its relationship to the system of which it is a part. Where several models, options, or styles are described, the manual shall identify the items actually provided.

3. Each manual shall contain the following:

   a. Manufacturer's identification, including order number, model, and serial number.

   b. Blue line prints or reviewed shop drawings and diagrams of all systems.

   c. Certified equipment drawings or reviewed shop drawing data clearly marked for equipment furnished.

   d. Complete operating and maintenance instructions for each and every item of equipment, setting forth in detail and step-by-step the procedure for starting, stopping, operating, and maintaining the entire

system as installed. Include a schedule of recommended maintenance intervals.

e. Complete parts list of replaceable parts, their part numbers, and the name, telephone number, and address of their nearest vendor.

f. Any special emergency operating instruction and a list of service organizations (including addresses and telephone numbers) capable of rendering emergency service to the various parts of the system.

g. Copy of manufacturer's equipment guarantees and warranties.

4. Brochures shall be loose leaf with durable plastic or fiberboard covers. Each sheet shall be reinforced to prevent tearing from continued use, and each brochure shall have the following information clearly printed on its cover:

a. Project name, name of Owner, and address.

b. Name and address of Owner's Representative.

c. Name and addresses of contractors and subcontractors and department to contact.

d. Telephone number of contractors, including night and emergency numbers.

e. Major equipment vendors' names and telephone numbers.

5. Submit complete manuals at least four weeks before the date of the instructions required by the subsections on "Manufacturer's Services" in the various specification sections.

6. Operation and maintenance manuals specified herein are in addition to any operation, maintenance, or installation instructions required by the Contractor to install, test, and start up equipment.

C. Equipment Data Sheets

Provide six sets of equipment data sheets, bound in three-ring binders, summarizing the equipment manufacturer's maintenance instructions and recommendations. A blank data sheet is attached.

Preventive Maintenance and Operating Requirement Sheets

| | | |
|---|---|---|
| Preventive Maintenance Program | Equipment Record Number | |
| EQUIPMENT DESCRIPTION | ELECTRICAL OR MECHANICAL DATA | |
| Name: | Size: | |
| Serial No.: | Model: | |
| Vendor: | | |
| Vendor Address: | Type: | |
| | Mfr.: | |
| Vendor Rep: | Voltage: | Amps: |
| Phone: | Phase: | rpm: |
| Maintenance Work to be Done | | Frequency* |
| | | |
| OPERATING REQUIREMENTS AND REFERENCE | | |

*D - Daily; W - Weekly; B - Biweekly; M - Monthly; Q - Quarterly;
S - Semiannually; A - Annually.

END OF SECTION