

*This technical bulletin has been prepared jointly by the Manitoba Association of Architects and the Winnipeg Construction Association, and intended as guidelines to increase awareness of recommended practices*

## TECHNICAL BULLETIN #15

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### **SUBJECT: OPERATIONS AND MAINTENANCE MANUALS**

The MAA/WCA Joint Committee, has approved the issuance of Technical Bulletin #15 as the recommended standard for Operations and Maintenance manuals. The requirements out-lined below provide a consistent and acceptable method for ensuring that the manuals contain the basic information required, and that the number of manuals requested is reasonable.

#### **Operations and Maintenance Manuals**

Prior to substantial performance of the work the contractor shall compile, organize and review for content and completeness one (1) hard copy and one (1) digital copy of the Operation and Maintenance Manuals, and shall submit these to the Consultant. Manuals shall be written in the English language (or language of the contract) and shall be made up as the follows:

1. Enclose title sheet, labelled "Operation and Maintenance Manual", project name, date, list of contents.
2. Organize contents into applicable sections of work to parallel project specification breakdown.
3. A complete Table of Contents for the entire manual shall be available.
4. Names, addresses and phone numbers of subcontractors, suppliers and authors of reports. For all equipment, list manufacturer's name and address and equipment supplier's name.

#### **Information to be Included In Operation & Maintenance Manual**

1. Description, operation and maintenance instructions for all equipment and systems, including parts list. Indicate information such as make, size, capacity, etc. Instructions shall be complete for installation, operation, and maintenance (including safety measures) for all equipment and machinery that require regular normal maintenance.
2. List correct lubrication schedules, show type of bearings, grade of oil or grease required and how often lubrication is needed.
3. Technical information and data including non-propriety wiring diagrams of all panels and control circuits, sequence of operations, design calculations, performance characteristics, data and capacities (i.e., pump curves, fan curve, air and

fluid balance data, equipment operating data, test data, manufacturer's ratings, etc).

4. Specific Equipment including Extended Warranty Certificates where Applicable:
  - a. Mechanical Equipment
    - i. Valve directory as specified under heading "Identification of Valves".
    - ii. Equipment schedule (Directory) as specified under heading "Identification of Equipment".
  - b. Electrical Equipment
  - c. General Equipment

## **Shop Drawings Record**

Owner to receive one (1) digital copy of approved shop drawings (as well as one (1) hard copy, upon request).

## **Instruction of Operating Staff**

1. Contractor/Subcontractors shall instruct representatives of owner in the commissioning, operation, maintenance of all equipment, products, etc. by means of instructional type visits to the sites to train owner operators, representatives to be familiar with all aspects of equipment/products.
2. Instructions shall include complete "hands-on" operational runs, start-ups, shut downs, cycling, etc. of all equipment, products, forming part of the work.
3. Contractor shall record dates, instructions given, list owner attendees, and forward report to Consultant. Owner to arrange for adequate knowledgeable personnel to attend scheduled instructional meetings. Engineer to specify duration of training time when project is being tendered.

## **Exceptions**

The success of these standards for Operating and Maintenance Manuals is directly dependent upon the compliance of owners, design representatives and contractors. It is, however, recognized that some of those owners that have major operations, and are frequent buyers of equipment, may have different requirements for O & M Manuals than is provided through this bulletin. In those specific situations, the design authority may vary the requirements accordingly.