

## **Part 1        General**

### **1.1        DEFINITIONS**

- .1    Acronyms:
  - .1    BMM - Building Management Manual.
  - .2    Cx - Commissioning.
  - .3    HVAC - Heating, Ventilation and Air Conditioning.
  - .4    PI - Product Information.
  - .5    PV - Performance Verification.
  - .6    TAB - Testing, Adjusting and Balancing.
  - .7    WHMIS - Workplace Hazardous Materials Information System.

### **1.2        GENERAL REQUIREMENTS**

- .1    Standard letter size paper 216mm x 279mm.
- .2    Methodology used to facilitate updating.
- .3    Drawings, diagrams and schematics to be professionally developed.
- .4    Electronic copy of data to be in a format accepted and approved by Departmental Representative.

### **1.3        APPROVALS**

- .1    Prior to commencement, co-ordinate requirements for preparation, submission and approval with Departmental Representative.

### **1.4        GENERAL INFORMATION**

- .1    Provide Departmental Representative the following for insertion into appropriate Part and Section of BMM:
  - .1    Complete list of names, addresses, telephone and fax numbers of contractor, sub-contractors that participated in delivery of project - as indicated in Section 1.2 of BMM.
  - .2    Summary of mechanical and electrical systems installed and commissioned - as indicated in Section 1.4 of BMM.
    - .1    Including sequence of operation as finalized after commissioning is complete as indicated in Section 2.0 of BMM.
  - .3    Description of building operation under conditions of heightened security and emergencies as indicated in Section 2.0 of BMM.
  - .4    System, equipment and components Maintenance Management System (MMS) identification - Section 2.1 of BMM..
  - .5    Information on operation and maintenance of mechanical systems and equipment installed and commissioned - Section 2.0 of BMM.
  - .6    Operating and maintenance manual - Section 3.2 of BMM.
  - .7    Final commissioning plan as actually implemented.

- .8 Completed commissioning checklists.
- .9 Commissioning test procedures employed.
- .10 Completed Product Information (PI) and Performance Verification (PV) report forms, approved and accepted by Departmental Representative.
- .11 Commissioning reports.

## **1.5 CONTENTS OF OPERATING AND MAINTENANCE MANUAL**

- .1 For detailed requirements refer to Section 01 78 00- Closeout Submittals.
- .2 Departmental Representative] to review and approve format and organization within 12 weeks of award of contract.
- .3 Include original manufactures brochures and written information on products and equipment installed on this project.
- .4 Record and organize for easy access and retrieval of information contained in BMM.
- .5 Include completed PI report forms, data and information from other sources as required.
- .6 Inventory directory relating to information on installed systems, equipment and components.
- .7 Approved project shop-drawings, product and maintenance data.
- .8 Manufacturer's data and recommendations relating: manufacturing process, installation, commissioning, start-up, O&M, shutdown and training materials.
- .9 Inventory and location of spare parts, special tools and maintenance materials.
- .10 Warranty information.
- .11 Inspection certificates with expiration dates, which require on-going re-certification inspections.
- .12 Maintenance program supporting information including:
  - .1 Recommended maintenance procedures and schedule.
  - .2 Information to removal and replacement of equipment including, required equipment, points of lift and means of entry and egress.

## **1.6 SUPPORTING DOCUMENTATION FOR INSERTION INTO SUPPORTING APPENDICES**

- .1 Provide Departmental Representative supporting documentation relating to installed equipment and system, including:
  - .1 General:
    - .1 Finalized commissioning plan.
    - .2 Approved "as-built" drawings and specifications.
    - .3 Procedures used during commissioning.
    - .4 Cross-Reference to specification sections.
  - .2 Mechanical:

- .1 Installation permits, inspection certificates.
      - .2 Piping pressure test certificates.
      - .3 Ducting leakage test reports.
      - .4 TAB and PV reports.
      - .5 Charts of valves and steam traps.
      - .6 Copies of posted instructions.
    - .3 Electrical:
      - .1 Installation permits, inspection certificates.
      - .2 TAB and PV reports.
      - .3 Electrical work log book.
      - .4 Schedules.
      - .5 Locations of cables and components.
      - .6 Copies of posted instructions.
  - .2 Assist Departmental Representative with preparation of BMM.
- 1.7 LANGUAGE**
- .1 English.
- 1.8 USE OF CURRENT TECHNOLOGY**
- .1 Use current technology for production of documentation. Emphasis on ease of accessibility at all times, maintain in up-to-date state, compatibility with user's requirements.
  - .2 Obtain Departmental Representative's approval before starting Work.
- Part 2 Products**
- 2.1 NOT USED**
- .1 Not used.
- Part 3 Execution**
- 3.1 NOT USED**
- .1 Not used.

**END OF SECTION**