

TRAINING

1. DESCRIPTION

- .1 This Section contains requirements for training the City's personnel, by persons retained by the Contractor specifically for the purpose, in the proper operation and maintenance of the equipment and systems supplied and installed under this Contract. Training for City Supplied Equipment will be provided by the Supply Contractors.
- .2 Two categories of training sessions are required: one set during the Commissioning Period, and one set during the Warranty Period, within six (6) months after Total Performance. The intent of the latter training session is to enable the City's personnel to ask particular questions on the operation of the specified equipment, based on their actual experience. There will be 2 different training sessions and 2 different trips.
 - .1 Provide 1 session during commissioning
 - .2 Provide 1 session during the warranty period
- .3 Each training session will include a minimum of four (4) to eight (8) hours for each item of equipment and sub-system. All training sessions will be coordinated with the Contract Administrator.
- .4 Training requirements may be modified by the Contract Administrator. In this event, the Contractor will be compensated for training requirements above and beyond the training requirements of this Contract.
- .5 It is the Contractors responsibility to provide Manufacturer's Representatives as specified for training purposes.

2. QUALITY ASSURANCE

- .1 Training includes instruction of the City's personnel in equipment operation and preventive maintenance and instruction of mechanics, electricians, instrumentation and communications technicians in normal maintenance up to major repair.
- .2 Where required by the detailed Specifications, provide on-the-job training of the City's personnel. Training sessions shall be conducted by qualified, experienced (2 years minimum), factory-trained representatives of the various equipment manufacturers. Trainers shall be capable of providing "qualified trainers" in the sessions provided as agreed upon by the Contract Administrator.

3. SUBMITTALS

- .1 Submit the following information in accordance with Section 01300 - Submittals. For phased testing and start-up activities, separate submittals can be prepared for equipment items or systems. The material will receive a "reviewed" or "reviewed as modified" status by the Contract Administrator no later than 4 weeks prior to delivery of the training:

TRAINING

- .1 Lesson plans and training manuals, handouts, visual aids, and other reference materials for each training session to be conducted by the Manufacturer's Representatives.
 - .2 Date, time, and subject of each training session and identity and qualifications of individuals to be conducting the training.
 - .3 Training schedule. Concurrent classes will not be allowed unless approved by the Contract Administrator.
 - .4 The Contract Administrator requires a minimum of ten (10) business days to review training materials.
- .2 Provide the following to verify the trainer's qualifications:
 - .1 Certification in related coursework.
 - .2 Three references for similar assignments where training was conducted for operation and maintenance staff.

4. LOCATION

- .1 Where specified, conduct training sessions for the City's operation and maintenance personnel on the operation, care, and maintenance of the equipment and systems installed under this Contract. Training will take place at the Site or within the City of Winnipeg at an alternative site designated by the City, and under the conditions specified in the following paragraphs.
- .2 Field training sessions will take place at the Site. Classroom training will take place at the Site or within the City of Winnipeg at an alternative location designated by the City. The Contract Administrator will confirm the location of classroom training.

5. LESSON PLANS

- .1 Prepare formal written lesson plans for each training session and coordinate with the Contract Administrator. Lesson plans to contain an outline of the material to be presented along with a description of visual aids to be utilized during the session. Each plan will contain a time allocation for each subject. Furnish twenty copies of final training manuals, handouts, visual aids and reference materials at least 2 weeks prior to each training session.

6. FORMAT AND CONTENT

- .1 As a minimum, cover the following topics for each item of equipment or system:
 - .1 Familiarization
 - .2 Safety

TRAINING

- .3 Operation
- .4 Instrumentation and Control
- .5 Troubleshooting
- .6 Preventive and regular maintenance
- .7 Corrective maintenance
- .8 Parts
- .9 Local representatives

7. DVD RECORDING

- .1 DVD record each training session to provide a permanent record for the City's use. Turn CD or DVDs over to the Contract Administrator after the training is completed. Advise all Manufacturers providing training sessions that the training material will be video recorded.

8. TRAINING

8.1 General Requirements

- .1 Conduct training in conjunction with the Commissioning Period.
- .2 Provide acceptable operation and maintenance manuals prior to Form 103 Substantial Performance.
- .3 Contractor shall be responsible for any Audio-Visual aids required for training sessions.

8.2 Operator Hands-On Training

- .1 As a minimum, classroom equipment training for operations personnel shall include:
 - .1 Identifying instrumentation: Location of primary element; location of instrument readout; discuss purpose, basic operation and information interpretation.
 - .2 Discussing, demonstrating and performing standard operating procedures and round checks.
 - .3 Discussing and performing the preventative maintenance activities.
 - .4 Discussing and performing start-up and shutdown procedures.
 - .5 Performing the required equipment exercise procedures.

TRAINING

- .6 Performing routine disassembly and assembly of equipment if applicable.
- .7 Identifying and reviewing safety items and performing safety procedures, if feasible.
- .8 Safety procedures.

8.3 Maintenance Hands-On Training

- .1 Hands-on equipment training for maintenance and repair personnel shall include:
 - .1 Locating and identifying equipment components.
 - .2 Reviewing the equipment function and theory of operation.
 - .3 Reviewing normal repair procedures.
 - .4 Performing routine start-up and shutdown procedures.
 - .5 Reviewing and performing the safety procedures.
 - .6 Performing City-approved practice maintenance and repair job(s), including mechanical and electrical adjustments and calibration and troubleshooting equipment problems.
 - .7 Reviewing and using equipment manufacturer's manuals in the hands-on training.

8.4 Equipment and Systems for Training

- .1 As a minimum, provide training during the Commissioning Period for all equipment and sub-systems listed in all Divisions in the technical specifications and shown on the contract drawings.
- .2 City Supplied Equipment training during Commissioning Period will be provided by the Supply Contractors.
- .3 Provide training for the equipment during the Warranty Period six (6) months after Total Performance.
- .4 Coordinate and finalize with the Contract Administrator on training schedules and duration of each training session.

8.5 Training Completion Forms

- .1 Form T1: To be completed for initial training. One (1) form is to be used for each equipment/ system for which training has been provided.

TRAINING

**CERTIFICATE OF SATISFACTORY TRAINING
FORM T1**

We certify that the initial training for the equipment listed below has been provided as per the Specifications.

PROJECT: _____

ITEM OF EQUIPMENT: _____

TAG NO: _____

REFERENCE SPECIFICATION: _____

(Trainer)

Date

(Contractor)

Date

(Authorized Signing Representative of the City)

Date

END OF SECTION