
PART 1 - GENERAL

1.1 Related Sections

.1 Common Works Results - Electrical
Section 26 05 01

1.2 References

.1 Measurement Canada Installation
Requirements; PS-E-04-E Installation
requirements for Multiple Customer Metering
Systems.

1.3 Existing
Components

.1 The existing Carma submetering system
was installed in 2007 and includes the
following for each of 3 existing panels.
.1 1- Energy Monitoring Pod c/w Local
Meter Display and extended Memory.
.2 3 - 120 /240 volt Potential
Transformers.
.3 1 - Potential Transformer Enclosure
10"X 10"x 4" Hinged door c/w a 2 pole
fused Disconnect and CSA factory
assembled approval.
.4 28 - 100 amp Current transducers.
.2 Computer based electronic submetering
system includes submetering data collection
and communications with local field displays
integral with the field panels.
.1 The System is designed to measure,
gather , store and transmit the
following;
.1 Instantaneous RMS voltage and
amperage for each phase or leg.
.2 Instantaneous and present Kw
and Kva demand.
.3 Kwhr. energy consumption.

1.1 Operation
and Maintenance
Materials

.1 Provide operation and maintenance data for
Submetering System for incorporation into O&M
manual specified in section 01 33 00 - Shop

Drawings and other Submittal Procedures.
with parts catalogue numbers.

and Maintenance
Materials
(Cont'd)

- .2 Provide maintenance materials in accordance with Section 26 05 01 Common Work Results - Electrical.
- .3 Provide one year's free maintenance with two inspections by manufacturer during year.
 - .1 Interim Inspection
 - .2 One (1) year warranty inspection.

1.2 Training

- .1 Arrange and pay for on-site lectures and demonstrations by Customer Submetering manufacturer to train operational personnel in use and maintenance of Customer Submetering System.

PART 2 - PRODUCTS

2.1 Certification

- .1 Units to be Bench Verified and sealed by Measurement Canada for legalized submetering.
 - .1 Measurement Canada approved field panel electronics to be fully removable and to be non disruptive to EMP field terminations.
 - .2 If required existing current transducers are to be certified by Measurement Canada specifically for this application

2.2 System
Software

- 1. To receive the legal metering measurements from all submetering sensors and to store the information in a central Data Collection (DCU) or central computer.
 - .1 To monitor, acknowledge and control communications with remote metering points and to log any disruption of the communication link or unauthorized system access or tampering.
 - .2 Provide a Windows based simplified user interface for system operation.
 - .3 To automate the generation of energy billings in a format similar to that provided by the local Utility supplier. To permit the energy costs calculations to be derived from the bill received from the local Utility supplier, allowing for the incorporation of

2.1 Certification .1
(Cont'd)

- (Cont'd)
- .3 (Cont'd)
- co-incident demand charges and time of use rates allocated to each user.
- .4 To permit multiple metering points to be allocated to a single user file in order to totalize a number of metering points and energy costs to a single user file.
- .5 To permit reconfiguration of tenant accounts through menu selection.
- .6 To list all tenant accounts including the tenant history file.
- .7 To access the actual metering measurements used in deriving each users invoice.
- .8 To include service menus for diagnostic monitoring of the metering equipment and through a modem and telephone link to permit remote diagnostics by the manufacturer's service technicians. Security access control shall permit remote diagnostics to be locked out.

2.3 Portable Operator Interface

- .1 Metering system manufacturer to provide a Portable operator terminal that shall be capable of accessing all system data.
- .2 Portable Operator Terminal shall be IBM compatible notebook style PC including all software and hardware required.
- .3 This Portable Operator Terminal will be kept on site.
- .4 The PC is the main user interface to the meter manager System. The PC is to remain operational 24 hours per day. The PC is to be dedicated to running the meter manager system.
- .5 Portable Operator Interface minimum requirements.
- .1 Pentium IV, 2.66 GHz or better
- .2 512 MB Ram or better
- .3 40 GB Hard Drive or better
- .4 CD-RW Drive for system Backup.
- .5 Intel Graphics Media Accelerator or equivalent.
- .6 9 Pin Serial port for network interface unit.
- .7 PS/2 mouse Port or additional serial port .
- .8 Compatible mouse.

2.3 Portable Operator.1 (Cont'd)

.9 56.6 Baud US Robotics Modem 10.
Windows XP Professional Operating System.
latest version. 11. Microsoft Excel 2000
or XP

PART 3 - EXECUTION

3.1 Installation

- .1 Provide 120 volt grounded power for EMPs.
- .2 Provide for wireless communication to Central Computer.
- .3 Mount Pt's and connect to proper phase legs as per EMP wiring charts.
- .4 Install Cts on phase legs corresponding to assigned PTs as per EMP wiring charts.
- .5 Ensure that Cts and PTs are accessible to Measurement Canada Inspection and Reverification Personnel.
- .6 Provide certification by Measurement Canada
- .7 Ensure proper operation.
- .8 Provide training to Harbour Authority designated personnel.

3.1 Field Quality Control

- .1 Perform tests in accordance with Section 26 05 01- Common Work Results - Electrical .
- .2 Arrange, provide and pay for Manufacturers' representative presence on site to commission the complete system.