

**PART E**  
**SPECIFICATIONS**

## PART E - SPECIFICATIONS

### GENERAL

#### E1. GENERAL

E1.1 These Specifications shall apply to the Work.

#### E2. GOODS

E2.1 The Contractor shall supply and install an uninterruptible power supply and a maintenance bypass switch in accordance with the requirements hereinafter specified.

E2.2 Item No. (1) – the UPS shall be one (1) new Powerware 9390 Model 80 KVA UPS. It shall have, as a minimum, the following salient features:

- (a) The unit shall be CSA approved for its intended use
- (b) Input voltage to be 208 VAC 3 phase, 3 wire plus ground.
- (c) Output voltage to be 120/208 VAC 3phase, 4 wire plus ground..
- (d) The UPS must be of the type “online”, defined as “A UPS in which the inverter is on during normal operating conditions supplying conditioned power to the load through an inverter or converter that constantly controls the AC output of the UPS regardless of the utility line input. In the event of a utility power failure, there is no delay or transfer time to backup power”.
- (e) The unit will have an internal automatic bypass switch, that will operate automatically upon any fault, internal to the UPS, and allows the unit to switch to the internal hydro bypass seamlessly. This requirement also assumes the units input and output power when the unit is in “normal” operation will be in phase.
- (f) The unit will have a battery bank that is dual parallel batteries sized so that the battery is sufficient to power a full load for 13 minutes (80 KVA).
- (g) The UPS shall have an “emergency power off button” and provision for an external power off control (fire alarm). The unit’s EPO shall be protected from accidental activation.
- (h) The UPS shall have provision for battery status monitoring, which shall include automatic battery tests on a scheduled basis, and be able to report on battery life remaining (estimate), total number of discharges, total time in discharge, The power to the load of the unit shall be completely protected from unanticipated battery failure during these tests.
- (i) The UPS shall be capable of limiting battery charging while its input power is being provided by a Motor Generator Set.

The UPS shall include the following minimum controls, alarms, and descriptive status information:

- (j) UPS alarms (minor and major),
- (k) Operating characteristics,
- (l) input voltage, (average across three phases),
- (m) input current (in amperes, average across three phases)
- (n) input P.F.
- (o) output voltage (average across three phases)
- (p) output current (in amperes, average across three phases),
- (q) output P.F.
- (r) input or output frequency in hertz,

- (s) battery voltage (D.C. volts)
  - (t) battery current (amperes either charge(+)or discharge(-))
- E2.3 **Item No. (2)** - an external manual bypass switch shall be of the type “make before break”. It shall be CSA approved for its intended use. Operating instructions shall be clearly indicated on the switch
- (a) It shall be wall mountable, housed in a separate cabinet from the UPS.
  - (b) The switch will be electrically sized for the UPS output capacity.
- E2.4 **Item No. (3)** - Software shall permit the monitoring/control of the UPS over a network connection.
- (a) The software shall be able to communicate over a TCP/IP network connection to the UPS.
  - (b) The software shall be able to monitor and control the UPS as well as communicate to UPS connected devices to provide for an orderly shutdown of those devices.
  - (c) The UPS shall be capable of logging all events, including bypass events (hydro power failure, dips, over voltages, frequency changes etc.) These logged events shall be saved even when the unit is powered off, either externally or via automatic shutdown procedures.
  - (d) The UPS shall be capable of logging all events. The event logger shall be at least 100 entries long.
  - (e) The UPS shall include a full “mimic” display that will indicate in picture format the operating status of the unit in real time.
  - (f) The UPS SNMP software/hardware shall be fully compatible with the ‘Lansafe Version 5’ software currently in use on the City’s Powerware 9330-40. If upgraded SNMP software or hardware is bid then the bidder shall include the appropriate upgrade for the 9330-40 at no additional cost to the City.
  - (g) The SNMP software shall be capable of sending a predefined shutdown command to any attached device on the network. The shutdown command will have a predefined shutdown period of time, before the UPS shutdown actually occurs (defined shutdown delay), this will allow the servers time to come to an orderly shutdown, in advance of UPS shutdown.

### **E3. DELIVERY**

- E3.1 Goods shall be delivered and installed before December 31, 2004., f.o.b. destination, freight prepaid. The earliest delivery date shall be co-ordinated and determined by the Contract Administrator, this date is vital to the City of Winnipeg as it is co-ordinated with the removal of equipment in the Computer Room where the UPS will be installed..
- E3.2 24 hour advance notice of delivery shall be provided to the Contract Administrator.
- E3.3 The delivery company shall make themselves aware of the special delivery considerations and limitations of the off loading delivery location at 510 Main St.
- E3.4 Goods shall be delivered between 8:30 a.m. and 4:30 p.m. on Business Days.
- E3.5 The Delivery agent shall move goods to the seventh (7<sup>th</sup>) floor as directed at the delivery location, and by the Contract Administrator Delivery will not be considered to be complete until all of the goods are delivered to the 7<sup>th</sup> floor Admin. Bldg.