

**CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT**

**PURCHASE SPECIFICATION**

**FOR**

**MONITORING SYSTEM, DIST, POWER**

<b>DATE</b>	<b>PREPARED BY</b>	<b>ISSUANCE/REVISION</b>	<b>APPROVAL PROCESS SUPV. / MATERIALS SUPV.</b>
7-1-2009	Steve Booher	Issuance	_____ _____ _____

<i>Reason for Revision</i>	<i>Affected paragraphs</i>
Issuance	

This specification, until rescinded, shall apply to each future purchase and contract for the commodity described herein.

Retain for future reference.

## Purchase Description for Power Monitoring System

### 1. SCOPE AND CLASSIFICATION

#### 1.1 Scope

The City of Austin - Austin Energy (AE) sets forth this specification as the minimum requirements for operating characteristics, equipment and safety features for an Integrated Programmable Distribution Power Monitoring System.

#### 1.2 Classification

1.2.1 The Distribution Power Monitoring System will be used on a 7200/12470 Grd Y, 60 Hz, and 95 BIL electrical distribution system.

1.2.2 The Monitoring system will be used to measure and monitor the system performance of the distribution system.

1.2.3 The Distribution Monitoring System shall be a totally integrated field proven documented system.

1.2.4 The Monitoring System will be used in Austin, Texas area and installed at an altitude of less than 1,000 meters and subjected to an annual ambient temperature variance of -25° C to +40° C at 100% humidity. The average temperature for any twenty-four hour period will not exceed 33° C.

### 2. APPLICABLE STANDARDS

The Distribution Monitoring System under this specification shall conform to the latest NEMA, NEC, NESC, IEEE, ANSI/IEEE, ANSI, ASTM, applicable standards. In the case of a conflict between any of the standards mentioned in this specification and the contents of this specification, the AE Specification shall govern.

### 3. FUNCTIONAL REQUIREMENTS

3.1 The power monitoring system shall ship completely programmed ready to install in the Austin Energy distribution system with sensors mounted to a fiberglass cross arm pre-wired to a NEMA 3R control and communications/processor enclosure and 7200-120 volt transformer. The Monitoring system shall have the following functions.

3.1.1 Programmed Reliatronics 3200 RTU programmed to report the following:

3.1.1.1 Fault current magnitude for each A,B, and C phase. (Analog) 1kA to 17kA

3.1.1.2 Fault downline. (Status)

3.1.1.3 Voltage for each A, B and C phase. (Analog)

3.1.1.4 Current for each A, B and C phase. (Analog)

3.1.1.5 Current Neutral. (Analog)

3.1.1.6 kW total. (Analog)

3.1.1.7 PF for each A, B and C phase. (Analog)

3.1.1.8 kVA total. (Analog)

- 3.1.1.9 kVA for each A, B and C phase. (Analog)
- 3.1.1.10 Power factor overall (% Analog).
- 3.1.1.11 Power factor for each A, B and C phase (% Analog).
- 3.1.1.12 Phase angle overall. (Degrees)
- 3.1.1.13 Phase angle for each A, B and C phase. (degrees Analog)
- 3.1.1.14 Phase Rotation A, B and C
- 3.1.1.15 kVar for each A, B and C (Analog)
- 3.1.1.16 Low Battery (Status)

## 3.2 Material Requirements

- 3.2.1 1-10 foot fiberglass crossarm for sensor mounting.
- 3.2.2 Voltage transformer with galvanized bracket 15 kV class, 7.2 kV primary, 60:1 ratio to power system processor and radio. The voltage transformer shall be supplied with a 25 foot power cord with a Cannon Mil spec circular connector on the enclosure end for the cable. Voltage transformer GE model number JVW-5 with Lindsey bracket # R-19329-30 or buyer approved equal.
- 3.2.3 A,B and C phase Current/Voltage sensors for 7.2 kV line to ground, 0-1200 amp, 2-bolt NEMA pad with connecting cable with installed Cannon Mil spec circular connectors at both sensor end and enclosure end. Cold shrink insulating material shall be provided for each termination point. Each end of the sensor cable shall be phase identified marked A in red, B in blue and C in black.
- 3.2.4 The System shall be supplied with a NEMA 3 R gray steel with a three point pad lockable enclosure. The enclosure shall have a galvanized pole mounting bracket and lifting eyes for mounting to a wood pole. All sensor and power terminations shall be on the bottom of the enclosure plug in style.
- 3.2.5 The enclosure shall house the processor, battery, battery charger, antenna surge arrester, antenna and radio all mounted and point to point wired inside. Below listed are material manufacture part numbers:
  - 3.2.5.1 Landis & Gyr Radio 26-1046 .
  - 3.2.5.2 Poly phase IS-B50LN-C2 surge arrester or buyer approved equal.
  - 3.2.5.3 Reliatronics 3200 RTU or buyer approved equal.
  - 3.2.5.4 12 V, 10 AH Power- Sonic Battery or buyer approved equal.
  - 3.2.5.5. 12V, 5 Amp Power Tender Plus battery charger or buyer approved equal.
  - 3.2.5.6 Enclosure mounted multi-directional antenna 902-928 Mhz, 3db

#### 4. **TEST REQUIREMENTS**

##### 4.1 Notification

Austin Energy shall be notified two weeks prior to factory testing. At Austin Energy's discretion, an inspector may be scheduled to witness testing procedures at no additional cost to Austin Energy.

##### 4.2 Testing

Each System shall be tested before shipment as a complete system from high side of sensors to the receiving side of the radio.

##### 4.3 Field Commissioning

Price shall include a factory technician to commission the first installation.

##### 4.4 Bid Requirements

The Contractor shall provide sufficient information on the Power Monitoring System to technically evaluate the system being proposed. The Contractor shall include with their bid verifiable evidence of their qualifications, including, but not be limited to, quality assurance, totally integrated working system and three (3) references for which the Contractor has provided similar working equipment. Failure to supply the required information or the failure to promptly supplement such information upon request of the AE may be grounds for rejection of the bid.