

Annexure-1

Supply, Installation, Commissioning and Testing of GPRS + GSM based EMI flow meters on the Bulk water connections ranging from 100 mm to 300mm. The electromagnetic meters should comprise of the specifications given in the notes of this chapter. III) Providing Electromagnetic Induction AMR water meters for 100 mm to 300 mm diameter. Supply, Installation, Commissioning and Testing of GPRS + GSM based EMI flow meters on the Bulk waters connections ranging from 100 mm to 300 mm. The electromagnetic meters should comprise of following specification. Specification: 1. Specification of electromagnetic induction Flow meters Application : Raw or Potable Water with chlorine content Conductivity : Maximum 500 MS/CM Accuracy : +/- 0.5% flow reading. Velocity Range : 0 .3 m / sec to 10 m/ sec Power Supply : For the entire diameter pipes (100 mm to 300 mm) 230 Volts AC power supply with surge arrester. Inbuilt rechargeable battery to provide backup for minimum 6 hrs battery backup in the absence of Grid Supply. Galvanic Isolation : All circuits of output and power supply to Galvanizically Isolated. Tube Lining Material : PTFE liner. Electrode material : SS 316L Flow meter Housing : Fully Welded and corrosive resistant Painted Carbon / Sheet Steel. (Housing Single unit) Electrodes : 2 measuring electrodes/4 measuring electrodes Display Unit : 2 or 3 Line LCD display 16 characters per line with backlight to see the reading during night time. All diagEachtics should be visible on the LCD screen 1st line : Flow Rate in m³ / hr 2nd line : Totaliser m³ 3rd Line : Electrode deposition / tamper status display Flange material : CS Flange Type of Flange : ANSI/ DIN type Flange Sensor protection : IP 68 Transmitter Protection Flow meter Ambient Temperature : up to 60 ° C Exact full model code and datasheet of the flow meter to be provided for Each line size. Data Logger: Internal / External with flow meter and data to be transmitted to server automatically for every 1 hour. Flow meter shall send 24 data message per day to remote server. Locally for every 5 minutes of interval in data logger. Per day 288 readings will be logged, per month 8640. Data of previous 1 year should be logged in to either internal / external data logger 2. Specification for Flow Sensors : Mounting : In field on pipeline (flow through flow Sensor). Line Sizes : 100 mm to 300 mm. Material of Flow Tube : SS316 / SS304 Grounding : Grounding / Earthing is required to protect flow meter from spurious signal. Earthing rings shall be provided at both flange ends. This will provide high degree of protection as compared to earthing electrode Electrodes : SS316L Weather Protection for Flow Tube : IP68 Empty Pipe Detection (EPD) : Integral part of design with electrode. The sensors should be as per ISO Standard lengths (ISO 13359) as applicable, so that interchangeability can be carried out. The sensors shall also have built in grounding and empty pipe detection facility 3. Specification for Flow Transmitter/Computation: Mounting : Transmitter panel mounted outside the meter Chamber in proper location. Type : Microprocessor based : 4 wire Protection : IP67 Power supply : For the entire diameter pipes (100 mm to 300 mm) 230 Volts, AC power supply with surge arrester. Inbuilt techargeable battery to provde backup for minimum 6 hrs battery backup in the absence of Grid supply. Output : 4-20 m Amps, digital and pulse outputs, Status Outputs, GPRS (Should Support GSM also). Data Logger Output : Through RS 485/ Ethernet. Unit of Display : m³ (Cubic Meter) / hr, MLD, ML (Programmable). Enclosure Material: Aluminum alloy with polyurethane quoting. Flow meter Standards : Testing & Calliratin : IS / ISO 17025 ,ISO 9140 Meter Standard : ISO 4064 Calibration and Testing: All the flow meters to be calibrated at manufacturer work place. Calibration / Test certificates to be provided as per IS / ISO 17025, periodical calibration facility to be provided if required. Specification for Padestal Panel for Transmitter Unit : 1) The electronic display unit shall be installed on a removable backboard. It should be an anti corrosive material. Enclosure should be designed for IP54, separate compartment for energy meter & converter and flow meter display unit & modem. Generated heat inside the flow meter should be dissipated and should not cause any harmful effects inside enclosure, wall or post mounting cabinet enclosure. The enclosure shall be constructed from galvanized steel which is at least 3 mm thick. The enclosure shall have a hinged access door, which shall have a facility for padlocking in the closed position. Batteries shall be easily accessible for periodic changing. For floor mounting enclosures, the enclosure shall be mounted on a concrete plinth, the surface of which shall be at least 120 cm above the surrounding finished ground level. A cable duct shall pass through the ;linth to enable the cable from the flow sensor to enter the enclosure. A lable showing details of the Employer's

name and the water meter's unique reference number shall be fixed to the external face of the access door. Contractors or equipment manufacturer's details shall not be fixed to the external face of the access door. 2) Transparent toughened glass of size 10 cm x 5 cm to be provided to see reading of BESCOM energy meter and flow meter separately. Panel should be provided with lock, master key, fan & filter for cooling / heat dissipation. 3) The enclosure shall be well-ventilated, dust-proof and vermin-proof, and be suitable for robust use in a tropical climate. It shall also be suitable for : a) the housing of the integral data logger and the temporary housing of a battery powered data logger which could periodically be used in conjunction with the water meter. b) the permanent housing of any lightning protection system the permanent housing of GPRS transmitter and battery pack, and any other items necessary to facilitate communication with the central server. c) The permanent housing of BESCOM energy meter. The bulk meter totalizer / register shall be started immediately on installation of water meter. Concerned officer shall strictly check testing and calibration certificate to ensure quality. Necessary agreement shall be made by concerned officer for warranty and other conditions. The bulk meter reading shall be synchronized to remote server at Cauvery Bhavan immediately. Civil, Mechanical and Electrical charges extra to be estimated. 1. The bulk meter totalizer / register shall be started immediately on installation of water meter. 2. Concerned officer shall strictly check testing and calibration certificate to ensure quality. 3. Necessary agreement shall be made by concerned officer for warranty and other conditions. 4. The bulk meter reading shall be synchronized to remote server at Cauvery Bhavan immediately. 5. Civil, Mechanical and Electrical charges extra to be estimated. For Bulk Flow Meters, sensors, transmitter, panels etc. for 300mm dia. complete with all lead and lift etc, as per specification and as per directed by the Engineer in Charge.