1.00 GENERAL

1.01 The electric utility shall furnish and connect all meters, instrument transformers, test switches, and meter control wiring necessary to complete the meter installation.

1.02 The customer shall furnish and install all self-contained meter sockets, and other equipment directly related to the housing and protection of the metering equipment. No provision for automatic circuit by pass shall be permitted in self-contained metering.

1.03 All devices associated with the housing of electric utility owned metering equipment shall be for the exclusive use of the electric utility and conform to the physical and electrical requirements outlined below and in ESD 0100 - ESD 0114.

2.00 PHYSICAL AND ELECTRICAL REQUIREMENTS

2.01 Equipment shall be manufactured in accordance with the latest revision of AEIC-EEI-NEMA Standards for Watthour Meter Sockets, Publication ANSI C12.7, Underwriters Laboratories Standard for Meter Sockets UL414, and SUB approved EUSERC standards.

2.02 Provision shall be made for grounding with a No. 8 copper wire, or larger, (as required per NEC code article 250) from the neutral to the ground rod and for bonding the neutral to the meter enclosure.

2.03 The meter base shall be labeled with the manufacture's name, catalog number, electrical rating for volts and amps, and service and load terminal wire size range for copper and aluminum wire.

2.04 All meter bases, CT cabinets and enclosures containing unmetered conductors shall have provision for electric utility security seals. The seal shall be in full view and readily accessible for inspection. The customer shall not be permitted to cut any seal without express permission of the electric utility.

2.05 There shall be no unmetered wire in any conduct, raceway or other enclosure which contains metered wire without the express permission of the electric utility.

2.06 There shall be an approved electrical inspection notice affixed to the meter base or immediate vicinity prior to energizing customer's service.

2.07 Mobile home meter pedestals (see ESD 0109)

a) Line and load compartments must be separated by a stable barrier.

b) The line compartment shall provide for padlocking and/or electric utility seals.

c) The pedestal top must be fastened so as not to allow easy access to line terminals or buss.

d) All load circuits shall be protected by a circuit breaker or breakers at the pedestal.

e) The load wiring from the pedestal shall not inhibit the entrance to the service compartment.

f) Steel pedestals shall have adequate coating on the burial portion for permanent protection from corrosion.

g) Aluminum pedestals will not be approved for burial.

h) When a direct burial pedestal is installed, a concrete collar shall be poured or placed at or below ground level to provide the necessary stability to withstand forces applied when meter is installed.

3.00 METER LOCATION

3.01 The electric utility shall always be consulted on location of meters to be installed and will strive to select a location that will be the most suitable to both parties.

3.02 All meters shall be installed on the exterior of the structure being served, unless otherwise permitted by the electric utility, in a location were they will be protected from mechanical damage. This includes provisions for the radius of door sweep, with an adequate stop provided. There shall be three feet of clearance for foot traffic, moving machinery, and a permanent barricade for vehicle traffic.

3.03 Residential meters on site built homes shall be installed on the street-side exterior, or within 2 feet (24 inches) of the street-side exterior. Meters shall not be located in areas such as carports, open porches, breezeways, etc., which are susceptible to subsequent enclosure by walls or screens. In the event a meter area is later enclosed, the customer shall, at their expense, have the meter facilities moved to an outside location. *Care should be taken in locating the meter where the meter side of the conduit is lower than the UTILITIES secondary connection point as water may enter the meter socket enclosure.*

3.04 Meters which are presently located within an enclosed area shall be moved outside should any electrical or structural remodeling occur. Consult with the Electric Utility for acceptable meter relocation.

3.05 Commercial metering shall be installed outdoors with exceptions listed in paragraph 3.06 of this section.

3.06 Commercial Nonresidential meters shall be located outdoors unless the utility confirms prior to installation that acceptable outdoor location is not available. Any indoor location **must have prior approval by the electric utility**. Indoor meters shall be located inside a dedicated mechanical room with an exterior door accessible to electric utility employees (from the outside of the building) at all times, and the room is in no way used for storage. The mechanical room shall be located in a clean, dry, safe place away from any machinery which may endanger the safety of those working on the meter. A clear space of at least 36 inches shall be maintained in front of all meters for reading and testing, door swing shall be to the exterior of the structure if meters are located within 36 inches of the door.

3.07 Meter sockets and enclosures shall be securely mounted to a rigid surface and must be in a plumb and level position. Meters may be recessed in any wall material providing the meter base cover can be readily removed by SUB personnel without damage to the wall or the meter itself. The center of the meters shall be 5 feet 6 inches +/-6 inches from the finished grade or floor unless otherwise noted in ESD 0109.

4.00 SINGLE AND THREE PHASE METERING INSTALLATIONS

4.01 The customer shall furnish and install the meter socket(s) in accordance with sections 1.00 and 2.00.

4.02 For three phase services, the customer load shall be connected such that it is evenly distributed across the phases.

4.03 Customers planning to connect additional load to existing facilities contact the electric utility's Engineering Division to determine the available capacity. The customer shall be responsible for damage resulting from failure to comply with this policy.

5.00 MULTIPLE UNIT METER INSTALLATIONS

5.01 There shall be one meter per customer. Each meter socket shall be permanently labeled with the address or unit designation of the customer (i.e. 1/2" mail box number or label).

A drawing depicting the arrangement shall be submitted to the Engineering Division prior to meter installation.

5.02 In multiple occupancy buildings, where it is at all possible to segregate individual services, each customer shall be separately metered. The only exception to this policy is if the occupants of the unit are transient in nature (i.e. motels and transient trailer parks).

5.03 Existing multiple occupancy buildings where it is possible to segregate individual services but are presently "master-metered" shall be allowed providing the account is in the owner's name. "Sub-metering by the customer for billing purposes will not be permitted. Separate meters shall be installed in a building should any electrical remodeling occur.

5.04 There shall be only one service entrance and one service voltage per building except as permitted under the NEC.

6.00 INSTRUMENT TRANSFORMER INSTALLATIONS

6.01 Current transformers shall be required when the customer's rated service exceeds 225 A and the service is not a 4-jaw (2S meter) service. The electric utility shall furnish all current transformers.

6.02 Potential transformers may be required on service voltages of 480 and above. Any request for primary metering (above 480 volt) shall be submitted to the Engineering Division for the facilities being planned. The electric utility shall furnish and install all potential transformers.

6.03 All current transformer cabinets, meter bases, and interconnecting raceways for current transformer secondary wiring shall be furnished and installed by the customer with the exception of primary metering. The current transformer cabinet shall be sized according to SUB's accepted EUSERC standards, *and shall be located within 50 circuit feet of the meter base(s)* in a location that accommodates inspection, testing and removal of current transformers. Any service conductor splices made in the CT cabinet shall be done on the load side of the CT buss bars. The CT cabinet shall not serve as a junction box for wires other than service conductors. It shall contain no equipment other than CT's. *Customer shall install grounding to all current transformer cabinets and meter bases with a #6 solid copper or larger conductor.*

6.04 *Window type* Current transformers shall be installed by the customer. Should bar type current transformers be required by the customer, the electric utility will supply the bars. Current transformers shall be mounted such that the polarity indication is to the source side of the service wire.

6.05 All current transformer secondary wiring will be furnished and installed by the electric utility. All instrument transformer installations shall have provisions for a test switch. *The test switch will be installed by the utility.*

6.06 The customer is to provide and install the meter socket and the conduit, with a nonconductive pull line installed between the current transformer cabinet and the meter cabinet, along with bonding by code/ approved methods. Conduit will normally be limited to 50 feet with not over 270 degrees in bends (consult the electric utility if length or number of bends exceeds those stated). All conduit shall be one inch inside diameter rigid metal, free of all other circuits. One inch EMT or flex will be permitted only if it is enclosed completely in a wall, ceiling or concrete floor. Short radius elbows and condulets will not be permitted.

6.07 Current Transformers shall be located outdoors unless the utility confirms prior to installation that acceptable outdoor location is not available. Any indoor location **must have prior approval by the electric utility**. Indoor metering current transformers shall be located inside a dedicated mechanical room with an exterior door accessible to electric utility employees (from the outside of the building) at all times, and the room is in no way used for storage. The mechanical room shall be located in a clean, dry, safe place away from any machinery which may endanger the safety of those working on them. A clear space of at least 36 inches shall be maintained in front of all current transformer cabinets for testing. The mechanical room door swing shall be to the exterior of the structure if current transformers are located within 36 inches of the door.

6.08 Instrument transformers located in Metal-Clad switchgear shall comply with the following:

a) All instrument transformers furnished by the electric utility are for the exclusive use of the electric utility.

b) Current transformers shall be located ahead of all breakers or switches unless specifically waived by the *Electric Utility Engineering Division.*

c) A separate compartment shall be provided to contain three current transformers (and potential transformers when required) and designed such that the transformers can be readily changed after the switchgear is installed. *The compartment shall have hinged or removable doors and be sealable. The covers shall be made of cold gauge metal; if non-hinged panels are used as covers, they shall be provided with lifting handles and be attached with sealable studs and wing nuts.*

d) The customer shall provide the electric utility with detailed drawings of the instrument transformer arrangement for acceptance and approval prior to constructing the switchgear.

6.09 Instrument transformer installations in padmount transformers are only applicable where services for a single metered customer (see ESD 0114). In these cases, the following requirements apply.

a) Instrument transformers are not to be installed in electric utility controlled padmount transformers without approval of the Engineering Division.
b) A one inch conduit must extend from the transformer vault to the approved meter location.
c) Instrument transformers and secondary wiring will be furnished and installed by the electric utility.
d) No potential transformers will be permitted in a padmount transformer.
e) Meter socket(s) shall be mounted on a wall or a steel channel support. Steel supports shall have adequate coating on the burial portion for permanent protection from corrosion.
f) When a direct burial support is installed, a concrete collar shall be poured or placed at or below ground level to provide the necessary stability to withstand forces applied when meter is installed.

TABLE 1.

CURRENT TRANSFORMER CABINETS

SERVICE		CURRENT TRANSFORMER CABINET SIZE
SINGLE PHASE	225 to 400 Amps	18” x 24” x 6” – Residential only 24” x 32” x 9” – All others
	400 to 800 Amps	24” x 32” x 9”
	800 to 1200 Amps	30” x 36” x 9”
	Above 1200 Amps	Consult the Engineering Division
THREE PHASE	225 to 400 Amps	24” x 32” x 9”
	400 to 800 Amps	30” x 36” x 9”
	800 to 1200 Amps	30” x 36” x 9”
	Above 1200 Amps	Consult the Engineering Division

NOTES:

1. Current transformer cabinets shall be NEMA approved.

2. Sizes stated herein are minimum standards only.

7.00 REVISION TABLE

Number	Date	By	Description
0	6/19/1997	VSA/TWW/RCL	Oldest electronic version.
1	4/5/2010	N. Amann	Add Revision Table (7.00). Removed remote read (3.05), update power factor metering requirements (5.01), cleanup document spelling and grammar. Clarified requirements for CT installations (6.01).