SECTION 33 71 73.33 (16211)

ELECTRICITY METERING GUIDELINES

PART 1  GENERAL

1.1 SYSTEM DESCRIPTION: Provide digital revenue meters on all new electrical services including alternate sources, emergency, and on-site generator transfer switches (See ES-12). Stanford has adopted a proprietary data acquisition system which operates only with the meters that are compatible with the ION system designed and manufactured by Schneider/Square D (www.powerlogic.com/).

Exception 1: Self contained, socket type meters may be accepted for outdoor services up to 200 amperes. Contact Project and Power Systems Manager for approval.

Exception 2: Non-standard meters may be accepted for specific indoor sub-metering applications. Contact the Project and Power Systems Manager for approval.

1.2 PHYSICAL LAYOUT:

A. Make provisions for removal of electronic meters without interrupting power to the load.

B. Provide current transformer shorting switches. Terminal blocks with shorting pins are not acceptable.

C. Provide pull-out fuse holders for voltage inputs and control power.

D. Refer to drawings ES-22 for applicable wiring.

1.3 CURRENT TRANSFORMERS

Provide metering class current transformers for all meters.

1.4 CONSTRUCTION SITE TEMP POWER METERING

Provide socket type meter for construction power system switchboard in construction site. Installation must be approved by Stanford High Volt Shop.
PART 2  PRODUCTS

2.1  METERS

A. Provide meters compatible with Stanford SCADA system per referenced drawings.

B. Where approved, self-contained socket type meters for services up to 200 amperes for 120/240 Volt, single phase, and 208Y/120 Volt, three phases, shall be Class 200. Single-phase meters shall be four (4) terminal, Form 2S. Poly-phase meters shall be seven (7) terminal, Form 14S or Form 16S.

2.2  CURRENT TRANSFORMERS:

A. Provide three ANSI metering class current transformers with 0.3 percent accuracy. Select the ratio to produce five (5) amps at eighty percent (80%) of the ampere rating of the service. (Example 800 to 5 for a 1000 Amp service).

B. Provide current transformer shorting switches (States type MTS or approved equal) in an accessible location adjacent to meter. Shorting switches shall be mounted on the outside of the metering compartment, with removable cover.

PART 3  EXECUTION

3.1  GENERAL

A. Mounting heights above the bottom of the enclosure: Sixty inches (60 in.) maximum; fifty-eight inches (58 in.) minimum. (It is anticipated that the meter will actually be sixty-four inches (64 in.) above the floor, accounting for approx . 4 inch of concrete pad).

B. Where more than one digital meter is installed (such as double ended switchgear), connect the communications terminals together with a shielded twisted pair and terminate on an accessible terminal block according to the meter Manufacturer’s instructions.

C. Install the meters strictly according to the meter Manufacturer’s instructions. Meters, instrument transformers, and accessories shall be furnished, installed, wired, and tested by the switchboard Manufacturer.

D. Ground the digital meter to the switchboard ground bus. Door hinges shall not be used for the ground path.

E. Mark current and voltage transformer ratios on the switchboard with permanent engraved nameplates.

F. Meter wiring shall be neatly bundled with tie wraps, supported, and properly marked with approved wire marker.
G. Provide 1-1/2 inch conduit from meter cubicle to connection point for communication cable by Stanford.

H. For RD&E locations and locations where it is not possible to install conduit from the meter cubicle to the IT room, please provide the following cellular parts needed for the installation of the cellular unit for communication to the Stanford SCADA system:

- 1 each Airlink LX60 unit- Sierra Wireless AirLink LX60 Dual Ethernet Cellular mobile router
- 1 each Antenna with 10 ft cable Parsec Technologies 2-in-1 PRO-S Antenna With 10 foot cable
- 1 each 24v power supply- Power Supply HDR-15-24
- 1 each LX60 I/O cable

I. Provide 2 inch conduit from switch to metering location.

END OF SECTION