

SECTION 26 27 13
ELECTRICITY METERING

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies the furnishing, complete installation, and connection of the electric meters for special loads.

1.2 RELATED WORK

Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General electrical requirements and items that is common to more than one section of Division 26.

1.3 SUBMITTALS

- A. Submit in accordance with Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS.
- B. Shop Drawings:
 - 1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
 - 2. Include electrical ratings, dimensions, weights, mounting details and clearances required for servicing.
- C. Manuals: Two weeks prior to the final inspection, submit four copies of the following to the COTR:
 - 1. Complete maintenance, operating and testing manuals including wiring diagrams, technical data sheets and information for ordering replacement parts:
- D. Certifications: Two weeks prior to final inspection, submit four copies of the following to the COTR:
 - 1. Certification by the manufacturer that the meter conforms to the requirements of the drawings and specifications, and the meter has been properly calibrated.
 - 2. Certification by the contractor that the meter has been properly installed, adjusted, and tested.

1.4 APPLICABLE PUBLICATIONS

- A. Publications listed below (including amendments, addenda, revisions, supplements and errata) form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. American National Standards Institute (ANSI):
 - C12.1-01.....Electric Meters Code for Electricity Metering
 - C12.10-04.....American National Standard for Watt-hour Meters

- C. Institute of Electrical and Electronic Engineers (IEEE):
C37-90.1-02.....Standard Surge Withstand Capability (SWC) Tests
for Protection Relays and Relay Systems
- D. National Fire Protection Association (NFPA):
70-05.....National Electrical Code (NEC)
- E. Underwriters Laboratories, Inc. (UL):
414-04.....Standard for Safety Meter Sockets.

PART 2 - PRODUCTS

2.1 SUBMETERING EQUIPMENT FOR SPECIAL LOADS

- A. The equipment shall meter all of the three phase electrical service used by the equipment shown on the drawings
- B. Polyphase watt-hour and recording demand/submetering equipment:
 - 1. Shall be microprocessor-based:
 - a. Microprocessor meters shall monitor the energy used on the ac systems voltages as specified on drawings.
 - b. The unit shall be provided with three compatible doughnut type current transformers.
 - c. The unit shall display the following:
 - 1) Watts, Amps, Volts, KVA, KVAR, PF, THD.
 - 2) Demand-Present.
 - 3) Demand-Peak.
 - d. The unit shall be provided with an adjustable demand window of 5-, 10-, 15-, 30-, or 60-minute intervals.
 - e. Accuracy of the meter shall be ± 1 percent. All readings shall be adjustable from a remote location.
 - f. Operating temperature range: -40 degrees F to 140 degrees F
 - 2. Transmit meter data information to generator paralleling control system located in new generator switchgear building for remote display. Coordinate with generator/paralleling switchgear manufacturer for transmitting and display data.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation shall be in accordance with the NEC, and as shown on the drawings.
- B. Install circuits and make connections as required for the metering equipment.

3.2. DEMONSTRATION

- A. At the final inspection in the presence of the VA representative, demonstrate that the electric meter operates properly in all respects.
 - 1. Test and adjust all controls and safeties. Replace or repair all malfunctioning controls, safeties, and equipment as soon as possible to avoid any delay in the use of the equipment.

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