

**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  $\pm 1$  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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