Subchapter VIII — General Customer Metering and Meter Accuracy

PSC 113.0801 Measuring energy on system. Where practical to do so, all electrical quantities required to be reported to the commission shall be metered. Quantities may be calculated when permitted by s. PSC 113.0802.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0802 Measuring customer service. (1) Except as provided in sub. (2), all energy sold to customers shall be measured by commercially acceptable measuring devices owned and maintained by the utility. All other electrical quantities which the rates or utility's rules indicate are to be metered shall be metered by commercially acceptable instruments owned and maintained by the utility.

(2) For temporary or special installations where it is impractical to meter loads, such as certain highway or area lighting which may be billed at a flat rate based on lamp rating and use, the consumption may be calculated.

(3) The metering and wiring in nontransient, multi−dwelling−unit residential buildings, mobile home parks and commercial establishments where individual unit metering is provided, or required under the provisions of s. PSC 113.0803, shall be so installed or arranged so that each customer or tenant is metered for his or her own consumption only. Energy used by common area loads, for example, hallway lighting and heating, shall be separately metered and billed as appropriate under the utility's filed tariff.

(4) Utilities shall inspect existing properties for jointly metered service where a tenant reasonably suspects that he or she is being billed for significant usage (e.g., furnace, water heater, etc.) that is serving more than one rental dwelling unit. The utility may bill the property owner for such an inspection. See s. 196.643, Stats.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0803 Individual electric meters required for non−transient multi−dwelling unit residential buildings, mobile home parks and for commercial establishments. (1) Each dwelling in a multi−dwelling unit residential building and mobile home park constructed after March 1, 1980, shall have installed a separate electric meter for each such dwelling unit. Dwelling unit means a structure or that part of a structure which is used or intended to be used as a home, residence or a sleeping place by one or more persons maintaining a common household and shall exclude transient multi−dwelling buildings and mobile home parks: for example, hotels, motels, campgrounds, hospitals, community−based residential facilities, residential care apartment complexes or similar facilities, nursing homes, college dormitories, fraternities, and sororities.

(2) Each tenant space in a commercial building constructed after March 1, 1980 shall have installed a separate electric meter.

(3) Any existing building which undergoes alterations involving a change in type of occupancy or substantial remodeling shall have installed a separate electric meter for each separate tenant space.

(4) For the purpose of carrying out the provisions of sub. (1), individual unit metering will not be required:

(a) In commercial buildings where the commercial unit space requirements are subject to alteration, as evidenced by temporary versus permanent type of wall construction separating the commercial unit spaces. Examples of temporary wall construction are partition walls which do not extend through the ceiling and walls which do not constitute a code−required fire separation.

(b) For electricity used in central heating, ventilating and air conditioning systems.

(c) For electric back−up service to storage heating and cooling systems or when alternative renewable energy resources are utilized in connection with central heating ventilating and air conditioning systems.

(5) For reasonable cause shown, the commission may grant waivers of this rule on a case−by−case basis. Applications for a waiver must be submitted to the commission in writing and set forth the facts or reasons applicant believes justify a waiver. In cases involving multi−dwelling unit residential buildings, the applicant must show that the electric equipment under tenant control is substantially more efficient than required by applicable codes and that the overall electric usage under tenant control is minimal. Example cases which would not qualify for waiver are buildings which are electrically heated or buildings which have individual unit electric water heaters.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00; CR 02−027: am. (1), Register December 2002 No. 564, eff. 1−1−03.

PSC 113.0804 One−point metering. Every reasonable effort shall be made to measure at one point all the electrical quantities necessary for billing a customer under a given rate.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0805 Tamper−resistant equipment. Where electrical energy has been diverted or the utility's equipment for measuring the service or controlling a customer's load has been interfered with, the utility may require the customer to install entrance and service equipment to prevent current diversion or interference with the metering or control equipment.

Note: See s. PSC 113.0808.

Note: Care should be taken in determining the existence of diversion and amount of energy diverted. In case check−meters are used, the possibility of grounds between meters, normal meter inaccuracies and incorrect connections of meters should not be over−looked. The requirements of the Wisconsin state electrical code for entrances should effectively prevent such diversion. Attention is directed to ss. 939.32 and 943.20, Stats.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0806 Multipliers and test constants. (1) Meters which are not direct reading shall have the multiplier plainly marked on the dial of the instrument or otherwise suitably marked and all charts taken from recording meters shall be marked with the date of the record, the meter number, customer and chart multiplier.

(2) The register ratio shall be marked on all meter registers.

(3) The watthour constant for the meter itself shall be placed on each watthour meter.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0807 Meter compensation. (1) Metering equipment shall not be set "fast" or "slow" to compensate for supply transformer or line losses.

(2) Loss compensators designed to be used with meters and which accurately add iron losses, copper losses, or both may be used. The compensator shall carry a tag identifying the compensation and shall be tested when the associated meter is tested and when the associated supply equipment on lines are changed.

Note: See s. PSC 113.0917 which covers test requirements for transformer loss compensators.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0808 Sealing meters and service entrance equipment. (1) Meters and metering equipment enclosures, which if open, would permit access to live parts from which energy could be used without proper measurement and utility−owned devices and equipment located on a customer's property for the control of his or her, load shall be sealed.

(2) Where the entrance switch is combined with meter−test facilities, or is installed on the supply side of the meter, the entrance switch boxes may be sealed by the utility. The customer may remove the seal from any fuse compartment to replace fuses if the utility is promptly notified that such seal has been broken.

(3) Where a utility supplies different classes of service at different rates to the same premises, such as lighting service and electric water heating service, the utility may seal the service switches.

(4) Sealing and resealing shall be without charge to the customer.

(5) This rule shall not require modernization of old installations or the sealing of installations which cannot practicably be sealed. Sealing shall not be such as to interfere with the operation of any switch or protective equipment.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0809 Installation of metering equipment. (1) The customer or the customer's agent should confer with the utility as one of the first steps in planning an electrical installation. The watthour meter should be located where it will be readily accessible for reading, testing and repairs and where it will not be subjected to adverse operating conditions or cause inconveniences to the customer. Normally, the utility shall determine the location and type of metering equipment to be installed.

(2) The utility should have available for distribution to customers, architects, contractors and electricians copies of rules, specifications and requirements that may be in force relative to meter installations. Installations should conform to such specifications and to applicable codes and safety requirements.

(3) Whether installed indoors or outdoors, meters should not be located where they will be subject to vibration or mechanical damage and should be mounted without tilt.

(4) Meters and associated equipment used on outdoor installations shall be designed specifically for such use or shall be suitably housed for outdoor service. Meters installed outdoors should not be located where they may be damaged, such as on buildings where unguarded meters will extend into alleys, walkways or driveways.

(5) Meters installed outdoors should not be more than 6 feet or less than 4 feet above final ground level (measured from the center of the meter cover) except in the case of meters on pedestals or padmounted transformers where they shall be placed as high as practicable and meters on underground services which may, when practicable, be placed as low as 2.5 feet above final ground level (measured from the center of the meter cover). On individual installations indoors, the meter should be not more than 6 feet or less than 4 feet above floor level (measured from the center of the meter cover). On group installations of meters indoors, no meter should be more than 6 feet or less than 2 feet above floor level (measured from the center of the meter cover). When a number of meters are placed on the same meter panel the distance between centers should be not less than 8.5 inches vertically or 7.5 inches horizontally. For meters installed both indoors and outdoors there should be a minimum of 3 feet of unobstructed space in front of the meter from the surface on which it is mounted.

(6) When there is more than one meter at a location, each shall be so tagged or marked as to indicate the circuit metered. Where similar types of meters record different quantities (for example, kilowatt−hours and reactive power) the meters shall be tagged to indicate what they are recording.

(7) Test facilities shall be placed in enclosures of sufficient size and of such construction as to make it possible for meter testers to perform the tests required by these rules with safety.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0810 Rental charge for metering equipment. The utility may charge a rental for equipment installed to furnish additional metering information to a customer for his or her use or because of governmental requirements.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0811 Accuracy of watthour meters. In this section, "meter" or "meters" may refer to metering system(s).

(1) Watthour meters used for measuring electrical quantities supplied to customers shall:

(a) Be of proper design for the circuit on which they are used, be properly connected and installed, be in good mechanical condition, have adequate insulation, correct internal connections and correct register.

(b) Not creep at "no load" a full revolution of the disk in 10 minutes or less when the load wires are disconnected and potential is impressed or in a test in the shop where the load wires are disconnected and the permissible voltage variation impressed. If the rate of creep can be determined in a shorter interval, it is not necessary to wait the full 10−minute period.

(c) If the meters are designed for use on alternating current circuits, they shall be accurate to within plus or minus 1% at 2 load tests: one equal to between 8% and 12% of full reference test current at unity power factor and the other between 90% and 110% of full reference test current at unity power factor; and for polyphase meters, shall be accurate to within plus or minus 2% at between 75% and 100% full reference test current and approximately 50% lagging power factor. For self−contained meters the reference test current shall be the ampere or test ampere rating of the meter, whichever is shown on the nameplate. For meters used with current transformers the reference test current shall be the test−ampere rating of the meter or the secondary rating of the current transformers.

Note: See s. PSC 113.0926 (2) for accuracy requirements for meters operating in the reverse−registration mode.

(2) Polyphase meters shall have their stators in balance within 2% at 100% load at unity and at approximately 50% lagging power factor.

(3) Meters used with instrument transformers shall be adjusted, if necessary, so that the overall accuracy of the metering installation will meet the requirements of this rule.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00; CR 02−027: r. (4), Register December 2002 No. 564, eff. 1−1−03.

PSC 113.0812 Accuracy of demand meters. In this section, "meter" or "meters" may refer to metering system(s).

(1) A demand meter, demand register, or demand attachment used to measure customer's service shall:

(a) Be in good mechanical and electrical condition.

(b) Have proper constants, indicating scale, contact device and resetting device.

(c) Not register at no load.

(d) Be accurate to the following degrees:

1. Curve drawing meters which record quantity time curves and integrated−demand meters shall be accurate to within plus or minus 2.0% of full scale throughout their working range. Timing elements measuring specific demand intervals shall be accurate to within plus or minus 2.0% and the timing elements which serve to provide a record of the time of day when the demand occurs shall be accurate to within plus or minus 4 minutes in 24 hours.

2. Lagged−demand meters shall be accurate to within plus or minus 4% of full scale at final indication.

(2) The overall accuracy of demand metering installations utilizing pulse−initiator and pulse−recorder equipment shall be acceptable when the monthly kilowatt−hours calculated from the pulse count do not differ from the corresponding kilowatt−hour meter registrations by more than the kilowatt−hour constant of the meter, or 2%, whichever is greater. The timing element error shall not be more than plus or minus 4 minutes per day.

(3) When a timing element also serves to keep a record of the time of day at which the demand occurs, it shall be corrected if it is found to be in error by more than plus or minus 4 minutes per day.

History: Cr. Register, July, 2000, No. 535, eff. 8−1−00.

PSC 113.0813 Requirements for instrument transformers. (1) Instrument transformers used in conjunction with metering equipment to measure customers' service shall:

(a) Be in proper mechanical condition and have electrical insulation satisfactory for the service used.