

Chapter PSC 113

SERVICE RULES FOR ELECTRICAL UTILITIES

- PSC 113.01 Application of rules (p. 82)
PSC 113.012 Definitions (p. 82)
- Part I Miscellaneous Service Requirements**
- PSC 113.015 General requirement (p. 83)
PSC 113.02 Adoption of standard by reference (p. 83)
PSC 113.04 Servicing utilization control equipment (p. 83)
PSC 113.05 Relocation of poles (p. 83)
PSC 113.055 Protection of utility facilities (p. 84)
PSC 113.057 Interference with public service structures (p. 84)
PSC 113.06 Standard voltages and utilization equipment (p. 85)
PSC 113.07 Tamper-resistant equipment (p. 85)
PSC 113.08 Power-factor correction of gaseous tube lighting (p. 85)
PSC 113.09 Change in type of service (p. 85)
PSC 113.10 Connection of motor-generator-type welders (p. 86)
PSC 113.101 Connection of other than motor-generator-type welders (p. 86)
PSC 113.102 Radio and television interference (p. 87)
PSC 113.103 Planned service interruptions (p. 87)
- Part II Requirements as to Rate Schedules and Rules of the Utility**
- PSC 113.11 Schedules to be filed with commission (p. 88)
PSC 113.12 Information available to customers (p. 89)
PSC 113.131 Deposits, residential (p. 90)
PSC 113.1315 Deposits for commercial and farm service (p. 93)
PSC 113.132 Disconnections, residential (p. 96)
PSC 113.1322 Disconnections, commercial and farm accounts (p. 101)
PSC 113.1323 Reconnection of service (p. 104)
PSC 113.1324 Cold weather disconnections (p. 105)
PSC 113.1325 Customer-requested termination of service (p. 106-1)
PSC 113.133 Deferred payment agreement (p. 106-1)
PSC 113.134 Dispute procedures (p. 106-2)
PSC 113.14 Limiting connected load (p. 106-4)
- Part III Charges and Billing**
- PSC 113.15 Meter readings and billing periods (p. 106-4)
PSC 113.16 Billing (p. 106-5)
PSC 113.17 Adjustment of bills for metering inaccuracies (p. 106-12)
PSC 113.18 Billings for grounds (p. 106-13)
- Part IV Utility Records and Interruptions of Service**
- PSC 113.19 Employes authorized to enter customers' premises (p. 107)
PSC 113.20 Maps and diagrams (p. 107)
PSC 113.21 Customers' complaints (p. 107)
PSC 113.22 Interruptions of service (p. 107)
PSC 113.23 Metering equipment records (p. 108)
PSC 113.24 Preservation of records (p. 109)
- Part V Voltage Standards**
- PSC 113.25 Standard and maintenance of voltage (p. 110)
PSC 113.26 Unusual variations of voltage (p. 111)
PSC 113.27 Harmonics of 60 Hz voltage wave (p. 112)
PSC 113.28 Standard and maintenance of constant-current circuits (p. 112)
PSC 113.29 Voltmeters and voltage records (p. 112)
- Part VI General Metering Requirements**
- PSC 113.30 Measuring energy on system (p. 113)
PSC 113.31 Measuring customer service (p. 113)
PSC 113.315 Individual electric meters required for non-transient multi-dwelling unit residential buildings, mobile home parks, and for commercial establishments (p. 113)
PSC 113.32 One-point metering (p. 114)
PSC 113.33 Metering at point of interchange and for customers' operating generating equipment (p. 114)
PSC 113.34 Type of instruments (p. 114)
PSC 113.35 Multipliers and test constants (p. 114)
PSC 113.36 Meter compensation (p. 114)
PSC 113.37 Sealing meters and service entrance equipment (p. 115)
PSC 113.38 Installation of metering equipment (p. 115)
PSC 113.39 Rental charge for metering equipment (p. 116)
- Part VII Accuracy of Meters and Auxiliary Devices**
- PSC 113.40 Accuracy of watthour meters (p. 116)
PSC 113.41 Accuracy of demand meters (p. 117)
PSC 113.42 Requirements as to instrument transformers (p. 117)
PSC 113.43 Portable indicating instruments (p. 118)

PSC 113

PSC 113.435	Determination of average meter error (p. 118)		stallations used for time-of-use rates (p. 124-4)
Part VIII Testing Equipment Standards and Test Methods		PSC 113.56	Testing of instrument transformers (p. 124-5)
PSC 113.44	Testing equipment (p. 119)	PSC 113.57	Customer request test (p. 124-6)
PSC 113.45	Accuracy and calibration of test standards (p. 120)	PSC 113.575	Commission referee test (p. 124-6)
PSC 113.46	Check of standards by commission (p. 121)	Part X Auxiliary Metering Devices	
PSC 113.471	Methods of testing watt-hour meters (p. 121)	PSC 113.60	Phase-shifting transformers (p. 124-6)
PSC 113.472	Methods of testing block-interval demand registers (p. 122)	PSC 113.61	Transformer-loss compensators (p. 125)
PSC 113.473	Methods of testing block-interval pulse-operated demand meters and pulse recorders (p. 122)	Part XI Interconnection of Small Customer-Owned Generation With Utility System Facilities	
Part IX Testing of Metering Equipment		PSC 113.70	Requirements for utility rules for interconnection of small customer-owned generation facilities with the utility system (p. 125)
PSC 113.50	Testing of metering installations-general requirements (p. 123)	PSC 113.71	Right to appeal (p. 127)
PSC 113.51	Testing of self-contained single-phase meters and 3-wire network meters (p. 123)	PSC 113.72	Notice to communication firms (p. 127)
PSC 113.515	Variable interval testing plan for self-contained meters (p. 124)	PSC 113.73	Metering with one meter for net energy billing (p. 127)
PSC 113.517	Statistical sample testing plan for new self-contained single phase and 3-wire network meters (p. 124-1)	Part XII Standards for Electric Service Extensions	
PSC 113.518	Statistical sample testing plan for in-service, self-contained, single phase and 3-wire network meters (p. 124-2)	PSC 113.80	Purpose (p. 127)
PSC 113.52	Testing of self-contained polyphase meters (p. 124-3)	PSC 113.81	Principles of facilities development (p. 128)
PSC 113.53	Testing of meters used with instrument transformers on single-phase service (p. 124-3)	PSC 113.90	Definitions (p. 128)
PSC 113.54	Testing of polyphase meters used with instrument transformers (p. 124-4)	PSC 113.91	Customer contribution for service facilities (p. 128-1)
PSC 113.55	Testing of metering installations utilizing pulse devices (p. 124-4)	PSC 113.92	Customer contributions for distribution (p. 128-2)
PSC 113.555	Testing of time controlled multi-register metering in-	PSC 113.93	Embedded cost allowances (p. 128-2)
		PSC 113.94	Refunds (p. 128-3)
		PSC 113.95	Modifications to existing distribution and service facilities (p. 128-3)
		PSC 113.96	Revision of estimates to reflect actual cost (p. 128-5)
		PSC 113.97	Extension or modification of transmission facilities to retail customers (p. 128-5)

PSC 113.01 Application of rules. (1) All public utilities, whether privately or municipally owned or operated, in respect to the supply of electric energy and provision of electric service in this state, shall comply with and conform to rules set forth in this order except insofar as exception may be made by order of the commission as hereinafter mentioned.

(2) Nothing in this chapter of the Wisconsin Administrative Code shall preclude special and individual consideration being given to exceptional or unusual situations and upon due investigation of the facts and circumstances therein involved, the adoption of requirements as to individual utilities or services which shall be lesser, greater, other, or different than those provided in said rules.

History: 1-2-56; am. (2), Register, October, 1965, No. 118, eff. 11-1-65.

PSC 113.012 Definitions. In this chapter:

(1) "Ability to pay" means a customer's financial capacity to meet his or her utility service obligation, considering all of the following factors:

- (a) Size of the delinquent account.
- (b) Customer's payment history.
- (c) Period of time the debt has been outstanding.
- (d) Reasons why the debt has been outstanding.
- (e) Any other relevant factors concerning the customer's circumstances, as household size, income and expenses.

(2) "Complaint" means a statement or question by any person, whether a utility customer or not, concerning a wrong, grievance, injury, dissatisfaction, illegal action or procedure, dangerous condition or action, or failure of a utility to meet a utility obligation.

(3) "Customer" means the party billed for payment of bills issued for use of utility service at a given premises.

(4) "Customer-requested termination" means that the customer or occupant has asked the utility to cease providing utility service to a premises.

(5) "Denied or refused service" means that a utility has refused to provide present or future service to a customer, occupant or premises.

(6) "Disconnection" means an event or action taken by the utility to terminate or discontinue the provision of service, but does not include a customer-requested termination of service.

(7) "Installment payment agreement" means an arrangement between a utility and a commercial or farm customer for payment of a deposit in installments.

(8) "New residential customer" means a customer who has not received utility service in his or her name during the previous 6 months from the utility from which service is requested.

(9) "Occupant" means the resident or residents of a premises to which utility service is provided.

(10) "Prompt payment" means payment prior to the time when a utility could issue a notice of disconnection for nonpayment of an amount not in dispute.

(11) "Protective service emergency" means a threat to the health or safety of a resident because of the infirmities of aging, mental retardation, other developmental or mental disabilities, or like infirmities incurred at any age, or the frailties associated with being very young.

(12) "Voucher agreement" means a payment agreement guaranteed by a third party who has access to or control over the benefits and/or finances of a public assistance recipient. Included without limitation are:

(a) Aid to Families with Dependent Children (AFDC) restrictive payment arrangements.

(b) Social Security Representative Payee.

82-2 WISCONSIN ADMINISTRATIVE CODE
PSC 113

(c) General Relief voucher payment systems.

(d) Legal guardian.

History: Cr. Register, October, 1989, No. 406, eff. 11-1-89.

Next page is numbered 83

PART I

Miscellaneous Service Requirements

PSC 113.015 General requirement. Every utility shall furnish reasonably adequate service and facilities at the rates filed with the commission and subject to these rules and the rules of the utility applicable thereto and not otherwise. The energy shall be generated, transmitted, converted, and distributed by the utility, and utilized, whether by the utility or the customer, in such manner as to obviate so far as reasonably practicable undesirable effects upon the operation of standard services or equipment of the utility, its customers, or other utilities or agencies.

Note: As used in these rules the terms "rules of the utility" or "utility's rules" means the rules of the utility on file with the commission.

PSC 113.02 Adoption of standard by reference. (1) **ADOPTION OF STANDARD.** Military Standard 414 (Mil-STD-414) dated June 11, 1957 is hereby incorporated by reference into ch. PSC 113 in part consisting of the cover page and pages 1, 2, 3, 4, 41, 42, 43, 45, 47, 48, 49, 50, 51, and 110. This published standard is entitled "Sampling Procedures and Tables for Inspection by Variables for Percent Defective" and is referenced in ss. PSC 113.517 and 113.518 herein for application of these rules on maintenance of electric meter accuracy by statistical sample testing methods. Interim amendments to MIL-STD-414 will not be effective in this state until such time as this chapter is revised to reflect such changes.

(2) **CONSENT TO INCORPORATE.** Pursuant to s. 227.21, Stats., the attorney general and the revisor of statutes have consented to the incorporation by reference of MIL-STD-414 in part as designated in sub. (1). Copies are on file in the offices of the commission, the secretary of state and the revisor of statutes.

(3) **AVAILABILITY OF STANDARD.** Copies of that part of MIL-STD-414 adopted herein may be obtained from the commission. Copies of the entire MIL-STD-414 may be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

History: Cr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.03 Inspection of structures and equipment. History: 1-2-56; r. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.04 Servicing utilization control equipment. (1) Utilities shall service and maintain any equipment they use on customers' premises so as to provide service in accordance with the rate provisions.

(2) Utilities shall test load-control systems according to procedures as filed with and accepted by the commission. The initial filing may consist of temporary procedures to be observed until the capabilities of the particular system are determined from experience.

(3) Other control devices used by the utility to control loads shall be checked periodically.

History: 1-2-56; am. (2), r. and recr. (3) and cr. (4), Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.05 Relocation of poles. (1) When a utility is required by governmental authority or requested by customers to move poles, as, for example, from streets to alleys, the utility is not required to furnish new service entrance conductors, cable, conduit, or service equipment unless

it makes a practice of supplying this equipment. It shall, however, run a service drop to the nearest point on each building served from the new location and remove the old service drop without expense to the customer.

(2) If the utility moves its poles of its own volition the utility shall supply new service entrance conductors, cable, conduit, interior wiring connection, and service equipment, and remove the old; or shall attach its system to the existing service entrance conductors without expense to the customer.

PSC 113.055 Protection of utility facilities. A public utility upon receiving notice as provided in s. 66.047 or 182.0175 (2) (e), Stats., of work which may affect its facilities used for serving the public shall:

(1) If the notice is of work covered by s. 66.047, Stats., investigate and decide what action, if any, must reasonably be taken to protect or alter utility facilities in order to protect service to the public and to avoid unnecessary damage. The utility shall take such action as is reasonably necessary to protect, remove, alter, or reconstruct its facilities, and shall perform such work with reasonable dispatch taking into account the conditions to be met. Nothing in this rule shall be deemed to affect any right which the utility may have to require advance payment or adequate assurance of payment of the reasonable cost thereof to the utility by the property owner or contractor.

(2) If the notice is of work covered by s. 182.0175 (2) (e), Stats., and is not covered by s. 66.047, Stats., the utility shall respond as required by s. 182.0175 (2) (e).

(3) The utility may, in order to protect its interests, require that the owner or contractor perform certain work upon that part of the service piping or wiring on or being removed from the property upon which the excavating, building, or wrecking operations are being performed.

(4) This rule is not intended to affect the responsibility of the contractor or owner, or the liability or legal rights of any party.

History: Cr. Register, June, 1962, No. 78, eff. 7-1-62; am. intro. par., Register, October, 1965, No. 118, eff. 11-1-65; r. and recr. (intro.), (1) and (2), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.057 Interference with public service structures. (1) A utility having any work upon, over, along, or under any public street, highway or private property near existing utility facilities shall give reasonable notice to the other utility and shall exercise care when working in close proximity to such existing facilities. Sections 66.047 and 182.0175, Stats., shall be observed where applicable. In all other cases such notice shall provide the other utility with a reasonable opportunity to protect or alter its facilities and such work shall not proceed without an agreement concerning the location and nature of the proposed work.

(2) Nothing in the above shall prevent a utility from proceeding as quickly as possible with any emergency construction work which might interfere with existing facilities. (See s. 182.0175 (2) (d), Stats.)

History: Cr. Register, October, 1965, No. 118, eff. 11-1-65; r. and recr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.06 Standard voltages and utilization equipment. (1) All utilities shall have available a tabulation showing the character and type of elec-
Register, October, 1989, No. 406

(b) The utility shall inform the customer at the time a deposit is provided that if, after 12 months of utility service, the deposit amount is greater than necessary based on actual consumption, the customer may request refund of the difference between the 2 amounts.

(7) **REFUSAL OR INTERRUPTION OF SERVICE.** Commercial or farm service may be refused or disconnected for failure to pay a deposit request, subject to the rules pertaining to disconnection and refusal of service.

Note: See s. PSC 113.1322.

(8) **AMOUNT OF DEPOSIT.** (a) The maximum deposit for a new commercial or farm account shall not exceed the highest estimated gross bill for any 2 consecutive billing periods selected by the utility. If after a 12 month period the deposit amount is shown to be greater than warranted based on actual consumption, the utility shall at the customer's request refund the difference between the 2 amounts, plus interest.

(b) Except as provided in par. (c), the maximum deposit for an existing commercial or farm account shall not exceed the highest actual gross bill for any 2 consecutive months within the preceding 12 months review period, as determined by the utility.

(c) If, during the cold weather disconnection rules period, a customer had an arrears amount incurred during this period that was 80 days or more past due and had the ability to pay for utility service, the deposit may not exceed the highest actual gross bill for any 4 consecutive months within the preceding 12 month review period, as determined by the utility.

(9) **INTEREST.** (a) Deposits for commercial or farm service shall bear interest from the date a deposit is made to the date it is applied to an account balance or refunded.

(b) The interest rate to be paid shall be subject to change annually on a calendar basis. The commission shall determine the rate of interest to be paid on deposits held during the following calendar year and notify the utilities of the rate by December 15 of each year. The rate shall be equal to the weekly average yield of one-year United-States treasury securities adjusted for constant maturity for the week ending on or after December 1 made available by the federal reserve board, rounded to the nearest tenth of one percent.

Note: This rule will take effect November 1, 1989 for deposits held at that time and any subsequent deposits. The commission will determine the interest rate for 1989, based on the December, 1988 calculations.

(c) The rate of interest set by the commission shall be payable on all deposits. Utilities shall calculate the interest earned on each deposit at the time of the refund and at the end of each calendar year. The interest rate in a calendar year shall apply to the amount of the deposit and to all interest accrued during the previous year(s), for the fraction of the calendar year that the deposit was held by the utility.

(10) **TIME OF REFUND.** The deposit of a commercial or farm customer shall be refunded after 24 consecutive months of prompt payment.

(11) **METHOD OF REFUND.** Any deposit or portion thereof refunded to a commercial or farm customer shall be refunded by check unless both the

customer and the utility agree to a credit on the regular billing, or unless sub. (13) applies.

(12) **REFUND AT TERMINATION OF SERVICE.** Upon termination of commercial or farm service, the deposit, with accrued interest, shall be credited to the final bill, and the balance shall be returned within 30 days of issuing the final bill.

(13) **ARREARAGES.** An arrearage owed by a commercial or farm customer may be deducted from the customer's deposit under the following conditions.

(a) Except as provided in par. (c), a deposit may be used by the utility only to satisfy an arrearage occurring after the deposit was made.

(b) If the utility deducts an arrearage from a customer deposit, it may require the customer to bring the deposit up to its original amount. Failure of the customer to do so within 20 days of mailing a written request for payment is a ground for disconnection.

(c) When a deposit is refunded to the customer, the utility may first deduct any arrearage owed by the customer, whether the arrearage arose prior to or after the date of the deposit.

(14) **APPLICABILITY.** The provisions of subs. (3) and (4) are not applicable to deposits or guarantees made in connection with the financing of extensions or other equipment.

History: Cr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.132 Disconnections, residential. (1) Residential utility service may be disconnected or refused for any of the following reasons:

(a) Failure to pay a delinquent account or failure to comply with the terms of a deferred payment agreement, as provided in s. PSC 113.133.

(b) Violation of the utility's rules pertaining to the use of service in a manner which interferes with the service of others or to the operation of non-standard equipment, if the customer has first been notified and provided with reasonable opportunity to remedy the situation.

(c) Failure to comply with deposit or guarantee arrangements, as specified in s. PSC 113.131.

(d) Refusal or failure to permit authorized utility personnel to read the meter at least once every 6 months in order to determine actual usage. The 6-month period begins with the date of the last meter reading.

(e) Failure to comply with Wisconsin statute, commission rule or commission order pertaining to conservation or availability of service.

(f) Failure to pay costs or fees incurred by and awarded to the utility by a court of law, for pursuit of collection of bills, or failure to pay extraordinary collection charges as allowed and specified in the utility's tariffs filed with the public service commission.

(g) Failure to comply with applicable requirements of this section, or of the utility's rules, or with s. 101.865, Stats., or if the customer proposes to use a device that is not designed to reasonably minimize interference with communication and signal services.

(h) Delinquency in payment for service received by a previous customer or occupant at the premises to be served, if an account is transferred to a new account holder or customer and the previous account holder or customer continues to be an occupant of the dwelling unit to be served.

(i) Failure of an applicant for utility service to provide adequate verification of identity and residency, as provided in sub. (3).

(j) Failure of an applicant for utility service to provide the credit information set out in s. PSC 113.16 (7) (a).

(2) A utility is not required to furnish residential service under conditions requiring operation in parallel with generating equipment connected to the customer's system if such operation is hazardous or may interfere with its own operations or service to other customers or with service furnished by others. The utility may specify requirements as to connection and operation as a condition of rendering service under such circumstances.

(3) (a) A utility may request a signed application for residential service and verification of the identity and residency of an applicant for residential service at a premises where a bill remains unpaid for service provided within the previous 24 months.

(b) Any one of the items under subd. 1 or any 2 of the items under subd. 2 shall constitute adequate verification of identity, although a utility may accept other forms of verification:

1. Photo identification card, driver's license, or U.S. military card.

2. Social security card, birth or baptismal certificate, or letter of identification from a social service agency or employer.

(c) Any one of the items under subd. 1 or any 2 of the items under subd. 2 shall constitute adequate verification of residency, although a utility may accept other forms of verification:

1. Photo identification card, driver's license, or U.S. military card.

2. Social security card, birth or baptism certificate, or letter of identification from a social service agency or employer.

(d) An applicant denied or refused service because of this subsection shall be informed in writing of his or her ability to dispute the matter through the public service commission, and shall be provided with the address and telephone number of the commission.

(4) A public utility may disconnect residential utility service, without notice, where a dangerous condition exists for as long as the condition exists.

(5) A public utility may disconnect residential utility service, without notice, where it has reasonable evidence that utility service is being obtained by potentially unsafe devices or potentially unsafe methods that stop or interfere with the proper metering of the utility service.

(6) (a) Account arrears incurred by an owner or property manager for rental residential dwelling units or responsibility for non-compliance with energy conservation requirements as set out in ch. PSC 136 may be

transferred, without regard to class of service, to the home or office account of the owner or property manager.

(b) The utility shall send written notice of the planned transfer of the account arrears or responsibility for non-compliance with energy conservation requirements to the owner or property manager prior to making the transfer.

(c) If the account arrears remain unpaid or the structure in question continues to be in non-compliance with the energy conservation requirements, the utility may disconnect the owner's or property manager's residence or office service, provided that the utility complies with the disconnection provisions of s. PSC 113.1324.

(d) An owner or property manager whose account is subject to disconnection action may avoid disconnection of service by making payment, by making an agreement with the utility for an extension of time for a specific period, by entering into a deferred payment agreement under s. PSC 113.133 or by installing the required energy conservation measures in the property in question. Any disconnection shall be in compliance with s. PSC 113.1324.

(7) Residential utility service may not be disconnected or refused for any of the following reasons:

(a) Delinquency in payment for service by a previous occupant of the premises to be served.

(b) Failure to pay for merchandise or charges for non-utility service billed by the utility, except where authorized by law.

(c) Failure to pay for a different type or class of utility service, except as provided in sub. (6).

(d) Failure to pay the account of another customer as guarantor thereof.

(e) Failure to pay charges arising from any underbilling occurring more than one year prior to the current billing and due to any misapplication of rates or faulty metering.

(f) Failure to pay an estimated bill other than a bill rendered pursuant to an approved meter reading plan.

(g) A utility to knowingly assist a landlord in the removal or eviction of a tenant from rental property.

(8) The residential customer shall have, in all instances, at least 20 days from the date of issuance of the bill to provide payment. An account may be deemed delinquent and notice of intent to disconnect issued after such period has elapsed. In the event of a discrepancy between the issue date and the postmark, the 20-day period shall be figured from whichever is later.

(9) (a) A utility shall not disconnect residential service for reasons enumerated in sub. (1) unless written notice is sent to the customer by first class mail or personally served on a responsible adult member of the household at least 8 calendar days prior to the day of the proposed disconnection. If disconnection is not accomplished on or before the 15th day after the issuance of a notice, a subsequent notice shall be left on the Register, October, 1989, No. 406

premises not less than 24 hours nor more than 48 hours prior to disconnection.

(b) If the billing address is different from the service address, or the account is being billed in the name of "occupant," "resident" or other like term, notice shall be posted at each individual dwelling unit of the service address not less than 5 days before disconnection for reasons enumerated in sub. (1). If access is not possible, this notice shall be posted at a minimum, to all entrances to the building and in the lobby. The notice shall state at a minimum:

1. The date of the notice;
2. The proposed date of disconnection;
3. That, if feasible, the occupants may apply to the utility to accept responsibility for future bills and avoid disconnection of service. Refusal or acceptance of the application for service is subject to those conditions set out in this chapter.
4. That if disconnection of service will aggravate an existing medical or protective services emergency, the occupant should contact the utility immediately.

(c) Disconnection notice for reasons enumerated in sub. (1) shall be given upon a form approved by the commission, and shall contain the following information:

1. The name and address of the customer and the address of the service, if different.

2. A statement of the reasons for the proposed disconnection of service and that disconnection will occur if the account is not paid, or if arrangement is not made to pay the account under deferred payment agreement, or if other suitable arrangements are not made, or if equipment changes are not made. If disconnection of service is to be made for default on a deferred payment agreement, the notice shall include an explanation of the acts of the customer which are considered to constitute default.

3. A statement that the customer should communicate immediately upon receipt of the notice with the utility's designated office, listing a telephone number, if he or she disputes the notice of delinquent account, if he or she wishes to negotiate a deferred payment agreement as an alternative to disconnection, if any resident is seriously ill, or if there are other circumstances, as the presence of infants or young children in the household, the presence of aged, or handicapped residents in the household, the presence of residents who use life support systems or equipment or residents who have mental retardation or other developmental or mental disabilities.

4. A statement that residential utility service will be continued during serious illness or protective services emergency if the occupant submits a statement or notice pursuant to sub. (12).

5. A statement that the customer may appeal to the public service commission staff in the event that the grounds for the proposed disconnection or the amount of any bill remains in dispute after the customer has pursued the available remedies with the utility.

(10) (a) The utility shall make a reasonable effort to have a personal or telephone contact with the residential customer prior to disconnection. If a contact is made, the utility shall review the reasons for the pending disconnection of service, and explain what actions must be taken to avoid disconnection.

(b) If the account is being billed in the name of "occupant," "resident" or other like term, the utility shall also contact other utilities serving the premises and attempt to obtain the name of a responsible adult member at the service address.

(c) The utility shall keep a record of these contacts and contact attempts.

(11) (a) When a residential customer, either directly or through the public service commission, disputes a disconnection notice under s. PSC 113.134, the utility shall investigate any disputed issue and shall attempt to resolve that issue by negotiation. During this investigation and negotiation, utility service shall not be disconnected over this matter.

(b) If a disputed issue cannot be resolved pursuant to s. PSC 113.134 (1), the utility shall inform the customer of the right to appeal to the public service commission.

(12) Notwithstanding any other provision of this section, other than for reasons of safety or danger, a utility may not disconnect or refuse to reconnect service to a residential premises if disconnection or refusal of reconnection of service will aggravate an existing medical or protective services emergency for the occupant, if the occupant complies with the procedures of par. (a):

(a) A utility shall postpone the disconnection of service, or reconnect the service if disconnected, for 21 days to enable the occupant to arrange for payment, if the occupant produces a licensed Wisconsin physician's statement or notice from a public health, social services or law enforcement official which identifies the medical or protective services emergency and specifies the period of time during which disconnection will aggravate the circumstances. The postponement may be extended by renewal of the statement or notice. During this 21 days of service, the utility and occupant shall work together to develop resources and make reasonable payment arrangements in order to continue the service on a permanent basis. Further postponements may be granted if there is evidence of reasonable communication between the utility and occupant in attempting to make arrangements for payment.

(b) During the period service is continued under the provisions of this subsection, the customer shall be responsible for the cost of residential utility service. But no action to disconnect that service shall be taken until expiration of the period of continued service. Any customers who are in this continued service category shall be admitted into appropriate and special payment plan programs the utility may offer.

(c) If there is a dispute concerning an existing medical or protective services emergency, either party may request informal review by the public service commission staff. Pending a decision after informal review, residential utility service shall be continued provided that the occupant has submitted the statement or notice described in par. (a).

(13) Residential service shall not be disconnected on a day, or on a day immediately preceding a day, when the business offices of the utility are not available to the public for the purpose of transacting all business matters unless the utility provides personnel who are readily available to the customer 24 hours per day to evaluate, negotiate or otherwise consider the customer's objections to the disconnection as provided under s. PSC 113.134, and proper service personnel are readily available to restore service 24 hours per day.

(14) Notwithstanding any other provision of this chapter, residential utility service may not be refused because of a delinquent account if the customer or applicant provides as a condition of future service a deposit or guarantee as governed by s. PSC 113.131, or a voucher agreement. If the guarantor has agreed to be responsible for payment of all future bills, the customer shall be notified of the billing arrangement, and of the ability to reject the proposed arrangement.

History: Emerg. cr. eff. 1-21-75; cr. Register, January, 1975, No. 229, eff. 2-1-75; am. (1) (a) and (6) (a), Register, December, 1975, No. 240, eff. 1-1-76; emerg. am. (2) (a), eff. 1-19-76; emerg. am. (2), eff. 12-6-77; am. (2) (intro.), Register, March, 1979, No. 279, eff. 4-1-79; emerg. cr. (11), eff. 12-17-81; cr. (2) (e), Register, September, 1982, No. 321, eff. 10-1-82; cr. (11), Register, September, 1983, No. 333, eff. 10-1-83; cr. (2) (f), Register, February, 1985, No. 350, eff. 3-1-85; am. (9) (a), Register, June, 1986, No. 366, eff. 7-1-86; r. (10) (b), Register, May, 1987, No. 377, eff. 6-1-87; am. (4), Register, December, 1987, No. 384, eff. 1-1-88; r. and recr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.1322 Disconnections, commercial and farm accounts. (1) Commercial or farm accounts which involve residential dwellings shall be subject to s. PSC 113.1324.

(2) Commercial or farm utility service may be disconnected or refused for any of the following reasons:

(a) Failure to pay a delinquent account.

(b) Violation of the utility's rule's pertaining to the use of service in a manner which interferes with the service of others or to the operation of non-standard equipment, if the customer has first been notified and provided with reasonable opportunity to remedy the situation.

(c) Failure to comply with a deposit, guarantee arrangement, or installment payment agreement, as specified in s. PSC 113.1315.

(d) Refusal or failure to permit authorized utility personnel to read the meter at least once every 6 months in order to determine actual usage. The 6-month period begins with the date of the last meter reading.

(e) Failure to comply with Wisconsin statute, commission rule or commission order pertaining to conservation or availability of service.

(f) Failure to pay costs or fees incurred by and awarded to the utility by a court of law, for pursuit of collection of bills, or failure to pay extraordinary collection charges as allowed and specified in the utility's tariffs filed with the public service commission.

(g) Failure to comply with applicable requirements of this section, or of the utility's rules, or with s. 167.16, Stats., or if the customer proposes to use a device that is not designed to reasonably minimize interference with communication and signal services.

(3) A utility is not required to furnish commercial or farm service under conditions requiring operation in parallel with generating equip-

ment connected to the customer's system if such operation is hazardous or may interfere with its own operations or service to other customers or with service furnished by others. The utility may specify requirements as to connection and operation as a condition of rendering service under such circumstances.

(4) A public utility may disconnect commercial or farm utility service, without notice, where a dangerous condition exists for as long as the condition exists.

(5) A public utility may disconnect commercial or farm utility service, without notice, where it has reasonable evidence that utility service is being obtained by potentially unsafe devices or potentially unsafe methods that stop or interfere with the proper metering of the utility service.

(6) (a) Account arrears incurred by an owner or property manager for rental residential dwelling units or responsibility for non-compliance with energy conservation requirements as set out in ch. PSC 136 may be transferred, without regard to class of service, to the home or office account of the owner or property manager.

(b) The utility shall send written notice of the planned transfer of the account arrears or responsibility for non-compliance with energy conservation requirements to the owner or property manager prior to making the transfer.

(c) If the account arrears remain unpaid or the structure in question continues to be in non-compliance with the energy conservation requirements, the utility may disconnect the owner's or property manager's residence or office service, provided that the utility complies with the disconnection provisions of s. PSC 113.1324.

(d) An owner or property manager whose account is subject to disconnection action may avoid disconnection of service by making payment, by making an agreement with the utility for an extension of time for a specific period, or by installing the required energy conservation measures in the property in question. Any disconnection shall be in compliance with s. PSC 113.1324.

(7) Commercial or farm utility service may not be disconnected or refused for any of the following reasons:

(a) Delinquency in payment for service by a previous occupant of the premises to be served.

(b) Failure to pay for merchandise or charges for non-utility service billed by the utility.

(c) Failure to pay for a different type of class of utility service, except as provided in s. PSC 113.1322 (6).

(d) Failure to pay the account of another customer as guarantor thereof.

(e) Failure to pay charges arising from any underbilling occurring more than one year prior to the current billing and due to any misapplication of rates or any faulty metering.

(f) Failure to pay an estimated bill other than a bill rendered pursuant to an approved meter reading plan.

(8) The commercial or farm customer shall have, in all instances, at least 20 days from the date of issuance of the bill to provide payment. An account may be deemed delinquent and notice of intent to disconnect issued after the 20-day period has elapsed. In the event of a discrepancy between the issue date and the postmark, the 20-day period shall be figured from whichever is later.

(9) (a) A utility shall not disconnect commercial or farm service for reasons enumerated in cub. (2) unless written notice is sent to the customer by first class mail or personally served at least 8 calendar days prior to the day of the proposed disconnection. If disconnection is not accomplished on or before the 15th day after the issuance of a notice, a subsequent notice shall be left on the premises not less than 24 hours nor more than 48 hours prior to disconnection.

(b) If the billing address is different from the service address, notice shall be posted at each individual dwelling unit of the service address not less than 5 days before disconnection for reasons enumerated in sub. (2). If access is not possible, this notice shall be posted at a minimum, to all entrances to the building and in the lobby. Such notice shall state, at a minimum:

1. The date of the notice.
2. The proposed date of disconnection.
3. That, if feasible, the occupants may apply to the utility to accept responsibility for future bills and avoid disconnection of service. Refusal or acceptance of the application for service is subject to those conditions set out in this chapter.
4. That if disconnection of service will aggravate an existing medical or protective services emergency, the occupant should contact the utility immediately.

(c) Disconnection notice for reasons enumerated in sub. (2) shall be given upon a form approved by the commission, and shall contain the following information:

1. The name and address for the customer and the address of the service, if different.
2. A statement of the reasons for the proposed disconnection of service and that disconnection will occur if the account is not paid, or if arrangement is not made to pay the account, or if other suitable arrangements are not made, or if equipment changes are not made.
3. A statement that the customer should communicate immediately upon receipt of the notice with the utility's designated office, listing a telephone number, if he or she disputes the notice of delinquent account, or if he or she disputes the notice of delinquent account, or if he or she wishes to negotiate a payment agreement as an alternative to disconnection.
4. A statement that the customer may appeal to the public service commission staff in the event that the grounds for the proposed disconnection or the amount of any bill remains in dispute after the customer has pursued the available remedies with the utility.

(10) The utility shall make a reasonable effort to have a personal or telephone contact with the commercial or farm customer prior to disconnection. If a contact is made, the utility shall review the reasons for the pending disconnection. The utility shall keep a record of these contacts and contact attempts.

(11) (a) When a commercial or farm customer, either directly or through the public service commission, disputes a disconnection notice, the utility shall investigate any disputed issue and attempt to resolve that issue by negotiation. During this investigation and negotiation, utility service shall not be disconnected over this matter.

(b) If a disputed issue cannot be resolved pursuant to s. PSC 113.134 (1), the utility shall inform the customer of the right to appeal to the public service commission.

(12) Commercial or farm service shall not be disconnected on a day, or on a day immediately preceding a day, when the business offices of the utility are not available to the public for the purpose of transacting all business matters unless the utility provides personnel who are readily available to the customer 24 hours per day to evaluate, negotiate or otherwise consider the customer's objections to the disconnection, as provided under s. PSC 113.134, and proper service personnel are readily available to restore service 24 hours per day.

History: Cr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.1323 Reconnection of service. (1) Prior to October 15 of each year, or at a date designated by order of the commission, a utility shall attempt by letter, telephone, or personal visit to contact all households at premises to which service was disconnected within the past 12 months and remains disconnected for nonpayment and inform them of available payment options such as budget billing or deferred payment agreement. If a letter or telephone call does not result in a response from an adult member of the household by October 25, or at a date designated by order of the commission, a subsequent personal visit shall be made no later than October 25, or at a date designated by order of the commission. For any household remaining disconnected after this date, the utility shall continue its efforts to have a personal contact with the household and determine its situation. The utility shall make a personal contact attempt after the date of disconnection and before November 1 for any household disconnection and before October 15 and October 31. If, during any of the contacts made to carry out this section, the utility or its representative observes a danger to human health or life due to the disconnection, the utility shall immediately restore service. A record shall be made of all contacts and attempted contacts made to comply with this section.

(2) By November 15th of each year, a utility shall file a report with the commission stating the number of dwellings assumed to be occupied where service remains disconnected as of November 1 or later and the reason that service has not been reconnected to that dwelling. On other dates designated by order of the commission, a utility shall file periodic reports with the commission listing the number of assumed to be occupied dwellings where service remains disconnected.

(3) A utility shall cooperate with law enforcement and social service agencies in instances involving protective services emergencies. The util-

ity shall refer to the appropriate social service agency any situation it identifies in its reconnection efforts where it appears that intervention by a social service agency is appropriate. Local law enforcement and social service agencies may use the commission's dispute resolution process on behalf of a household without service because of nonpayment.

History: Emerg. cr. eff. 11-7-84; cr. Register, December, 1984, No. 348, eff. 1-1-85; am. (1), (2) and (4), Register, December, 1987, No. 384, eff. 1-1-88; Emerg. r. and recr. eff. 10-25-88; r. and recr. Register, October, 1984, No. 348, eff.

PSC 113.1324 Cold weather disconnections. (1) DECLARATION OF POLICY. The public service commission of Wisconsin recognizes that there are many citizens of the state who, because of incomes, infirmities of aging, mental retardation other developmental or mental disabilities or like infirmities incurred at any age, or the frailties associated with being very young, need protection from cold weather disconnections. This section is intended to provide that protection as enumerated below. It is the further intent of the public service commission that these rules be used as guidelines to identify those customers who are not covered by sub. (3). For households subject to disconnection under this section, any disconnection permitted by this chapter during the cold weather period defined below shall be made only as a last resort, after all other legal means of resource have been attempted and proven unsuccessful.

(2) **APPLICABILITY.** (a) This section applies to disconnections for nonpayment of utility service which provides the primary heat source or energy source affecting the primary heat source to residential dwelling units occurring during the period November 1 to April 15 in any year for all occupied residences.

(b) This section shall not apply to disconnections of service as set forth in s. PSC 113.132 (1) (b), (4), or (5), or disconnections for remodeling or repairs.

(3) **CUSTOMER REQUESTED TERMINATION.** With regard to customer-requested termination of service at an unoccupied residence, the utility may rely on verification by the owner or the owner's agent that the residence is unoccupied, provided that the utility visits the premises at the time of disconnection and verifies that the premises are not occupied. The utility shall keep a written record of the utility determination that the premises are unoccupied.

(4) **CONDITIONS FOR DISCONNECTION.** A utility may disconnect only those households whose gross quarterly incomes are above 250% of the federal income poverty guidelines and where health and safety would not be endangered because of the infirmities of age, mental retardation, other developmental or mental disabilities or like infirmities incurred at any age or the frailties associated with being very young, if service were terminated or not restored.

(5) **VERIFICATION.** (a) The burden of proof that a household is eligible for disconnection as defined in sub. (3) shall be the responsibility of the utility.

(b) The utility, as part of its filing with the public service commission pursuant to sub. (11) (b), shall include how it will verify the household's income and situation.

(6) **NOTICE.** (a) Prior to, and again at the time of disconnection of service, a utility representative shall meet personally with a responsible,

adult member of the household to discover any circumstances which deserve special attention, such as medical problems or disabilities.

(b) The utility shall maintain a record of all contacts with the household from the time that notice of pending disconnection is first given.

(7) **TELEPHONE AVAILABILITY.** A utility shall provide its emergency after-hours telephone number to all households scheduled for utility service disconnection.

(8) **CUSTOMER AND OCCUPANT SERVICE INFORMATION.** Prior to disconnection, a utility shall inform the household of the availability of deferred payment agreements, budget billing, and in the case of a noncustomer occupant, the option of accepting responsibility for future bills.

(9) **NO DISCONNECTION ON CERTAIN DAYS.** A utility may not disconnect service to an occupied dwelling on a Friday, Saturday, Sunday, holiday or on a day when utility personnel are not readily available to the occupant 24 hours per day to negotiate restoration of service.

(10) **THIRD PARTY CONTACTS.** If the household has previously requested that a specific third party be notified before disconnection, the utility shall contact that third party prior to disconnection of service.

(11) **MANAGEMENT-LEVEL EMPLOYEE.** If utility shall designate by November 1 each year one or more executive employees who will be responsible for final approval of the disconnection of utility service, and notify the commission, in writing, of the name, title, and contact number of the person or persons so designated. The designated employee shall certify on a form approved by the commission that all appropriate code provisions have been met prior to authorizing disconnection. For investor-owned utilities with 30,000 or more customers, the designated person shall be an employee with at least the position of vice president. For investor-owned utilities with fewer than 30,000 customers, the designated employee shall be the utility president. For a municipal utility the designated employee shall be either the general manager or chairperson of the governing board. A utility may designate an employee to act in the absence of the above-listed personnel because of illness or vacation.

(12) **REPORT.** (a) The utility shall report each disconnection of service to an occupied dwelling by facsimile transmission, if available, or telephone to the consumer services bureau of the public service commission by 3:30 p.m. the same day the disconnection takes place.

(b) If a utility intends to make any disconnection of service to occupied dwellings under the provisions of this section, it shall each year, prior to making any disconnections, file procedures for review and receive approval by order of the public service commission describing how it intends to identify the occupied dwellings subject to disconnection. If within 60 days of submission the commission has not, by order, approved the procedures, the procedures shall be considered disapproved.

(13) **FOLLOW-UP VISIT.** (a) By the end of the work day following the day of disconnection, the utility shall make an in-person visit to the occupied dwelling to check on the household's wellbeing and to ensure there is no danger to human health or life. The utility shall again inform the household of the availability of deferred payment or budget billing agreements, shelter assistance, and in the case of a noncustomer occupant, the option of accepting responsibility for payment of future bills. If

the utility or its representative observes a danger to human health or life due to the disconnection, the utility shall immediately restore service.

(b) The utility may request that the visit required under par. (a) be made by a representative of a city health department, local health and social service agency, local law enforcement agency, or similar authority, but ultimate responsibility for the visit shall remain with the utility.

(c) The utility shall make a written record of the visit required under par. (a).

(14) **INTERNAL PROCEDURES.** The utility shall submit for approval by commission order copies of its written internal procedures for implementing this section and any materials used in training its employes to carry out these rules. If within 60 days of submission the commission has not, by order, approved the internal procedures, the procedures shall be considered disapproved. The utility shall review these procedures annually and update the files procedures when appropriate. A utility which does not disconnect occupied residences for nonpayment during the winter period is not required to file such procedures.

History: Emerg. cr. eff. 11-7-84; cr. Register, December, 1984, No. 348, eff. 1-1-85; am. Register, December, 1987, No. 384, eff. 1-1-88; emerg. r. and recr. eff. 10-25-88; r. and recr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.1325 Customer-requested termination of service. With regard to customer-requested termination of service at an unoccupied residence, the utility may rely on verification by the owner or the owner's agent that the residence is unoccupied, provided that the utility visits the premises at the time of termination of service and has no reason to believe that the premises are occupied. If the premises appear to be occupied, the utility shall follow the procedures set out in s. PSC 113.132 (9) (b).

History: Cr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.133 Deferred payment agreement. (1) The utility is required to offer deferred payment agreements only to residential accounts and may offer such agreements to other customers.

(2) Every deferred payment agreement entered into due to the customer's inability to pay the outstanding bill in full shall provide that service will not be discontinued if the customer pays a reasonable amount of the outstanding bill and agrees to pay a remaining outstanding balance in installments.

(3) For purposes of determining reasonableness in sub. (2), the parties shall consider the customer's ability to pay, including the following factors:

- (a) Size of the delinquent account.
- (b) Customer's payment history.
- (c) Time that the debt has been outstanding.
- (d) Reasons why debt has been outstanding.

(e) Any other relevant factors concerning the circumstances of the customer, as household size, income and expenses.

(4) A deferred payment agreement offered by a utility shall state immediately preceding the space provided for the customer's signature and in bold face print at least 2 typesizes larger than any other used thereon,

"RIGHT OF APPEAL

- If you aren't satisfied with this agreement, DON'T SIGN IT.
- You have the right to suggest a different payment agreement.
- If you and the utility can't agree on terms, you can ask the public service commission to review the disputed issues.
- If you sign this agreement, you agree that you owe the amount due under the agreement.
- Signing this agreement does not affect your responsibility to pay for your current service."

(5) A delinquent amount covered by a deferred payment agreement shall not be subject to a late payment charge if the customer meets the payment schedule required by the agreement.

(6) A special payment agreement entered into by the customer and the utility through the utility's early identification program shall be given the force and effect of a deferred payment agreement for purposes of late payment charges.

(7) If a utility customer has not fulfilled the terms of a deferred payment agreement, and there has not been a significant change in the customer's ability to pay since the agreement was negotiated, the utility may disconnect utility service pursuant to disconnection of service rules, ss. PSC 113.132 and 113.1324, and shall not be required to negotiate a subsequent deferred payment agreement prior to disconnection.

(8) Payments made by a customer in compliance with a deferred payment agreement shall first be considered made in payment of the previous account balance with any remainder credited to the current bill.

(9) If a deferred payment agreement cannot be reached because the customer's offer is unacceptable to the utility, the utility shall inform the customer in writing why the customer's offer was not acceptable.

History: Emerg. cr. eff. 1-21-75; cr. Register, January, 1975, No. 229, eff. 2-1-75; am. (3) and (6), cr. (7), Register, March, 1979, No. 279, eff. 4-1-79; r. and recr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.134 Dispute procedures. (1) Whenever the customer disputes the utility's request for a deposit or other guarantee, or advises the utility's designated office that all or any part of any billing as rendered is in dispute, or that any matter related to the disconnection or refusal of service is in dispute, the utility shall:

- (a) Investigate the dispute promptly and completely.
- (b) Advise the customer of the results of the investigation.
- (c) Attempt to resolve the dispute.

(d) Provide the opportunity for the residential customer to enter into a deferred payment agreement under s. PSC 113.133 when applicable in order to resolve the dispute.

(2) After the customer has pursued the available remedies with the utility, he or she may request that the public service commission staff informally review the disputed issue and recommend terms of settlement.

(3) (a) A customer's request for informal review may be made in any reasonable manner such as by written request or telephoned request directed to the public service commission. By telephone or written request the public service commission staff may request the utility to investigate the dispute.

(b) A utility shall respond to public service commission staff's request for an investigation in a prompt manner. Based on information provided by the utility and the customer, public service commission staff shall make an informal determination for settlement of the dispute and communicate that determination to both by telephone or mail. Either party to the dispute may request and receive the public service commission staff determination, and the basis for it, in writing. Commission staff shall inform any customer disputing an informal determination of the right to pursue a formal review. Staff shall include any information or arguments that the customer believes the commission should consider.

(c) There shall be at least 7 days between the date the public service commission staff telephones or mails written notice of terms of settlement after informal review and any subsequent disconnection.

(4) (a) After informal review, any party to the dispute may make a written request for a formal review by the commission itself. To avoid disconnection pending a formal review, the customer must request a formal review by the commission, in writing, within 7 days of the issue of the informal determination. All other requests for formal review shall be made within 30 days of the date the commission staff telephones or mails written confirmation of the staff telephone notice is requested and mailed, the 30 day period begins from the date of that mailing.

(b) Within 7 days of receiving a request for formal review in a dispute involving a pending disconnection of service, the commission shall make a determination whether to grant the request for formal review. The commission shall base its determination on the request for formal review and commission staff's informal complaint file. Within 35 days from the time that all other requests for formal review are made, commission staff shall provide the commission with a memorandum based on the information it has received from the utility and the customer. A copy of the commission staff memorandum shall be provided to the parties 15 days prior to consideration by the commission. Either party to the complaint may file a response to the commission staff's memorandum. These comments shall be filed with the commission 2 working days prior to the date scheduled for consideration by the commission. The commission shall inform both parties of its decision.

(5) Either party to the complaint may request that the commission reconsider its formal determination under this section. Such requests shall comply with s. 227.49, Stats., and must be received by the commission within 20 days of mailing of the commission's determination. A request for reconsideration shall include any additional information or arguments that the party believes were not considered in the original complaint. The commission may review and reaffirm its original decision,

issue a new decision, or decide to hold hearing on the matter for the gathering of additional information.

(6) (a) If the commission decides to conduct formal hearing under sub. (5) on the dispute, the commission may condition the terms of its granting a formal hearing. Failure to met these conditions before hearing shall constitute waiver of the dispute by the customer.

(b) The hearing shall conform to the procedures of ss. 196.26 to 196.34, Stats.

(c) Any such hearing shall be held not less than 10 days following a notice of hearing and a decision thereon shall be rendered following the conclusion of the hearing.

(7) Utility service shall not be disconnected or refused because of any disputed matter while the disputed matter is being pursued in accordance with the provisions of this section. The utility shall inform the customer that pursuing a disputed matter does not relieve the customer or the obligation of paying charges which are not in dispute, or prevent disconnection of service for nonpayment of undisputed charges.

History: Emerg. cr. eff. 1-21-75; cr. Register, January, 1975, No. 229, eff. 2-1-75; am. (1), (3) (b) and (4), Register, December, 1975, No. 240, eff. 1-1-76; am. (1), Register, March, 1979, No. 279, eff. 4-1-79; emerg. am. (2) (a) and (b) and (3), eff. 12-17-81; am. (2) (a) and (b) and (3), Register, July, 1982, No. 319, eff. 8-1-82; r. and recr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.14 Limiting connected load. If the utility maintains a rate based on connected load, provision shall be made in its rules whereby the customer may arrange his load or wiring in such manner as is reasonably acceptable to the utility, whether by the use of double-throw switches or such other devices as may be approved by the utility, so that only a portion of the load may be served at one time and whereby, in such cases, the connected load to be used for the computation of charges shall be the largest load which can be served at any one time.

PART III

Charges and Billing

PSC 113.15 Meter readings and billing periods. Readings of all meters used for determining charges to customers shall be scheduled monthly, bimonthly, quarterly, or semiannually. An effort shall be made to read meters on corresponding days of each meter-reading period cycle. The meter-reading date may be advanced or postponed not more than 5 days without adjustment of the billing for the period. Bills for service shall be rendered within 40 days from the reading of the meter except as may be otherwise specifically authorized by the commission. The utility may permit the customer to supply the meter readings on a form supplied by the utility, provided a utility representative reads the meter at least once each 6 months and when there is a change of customer. The utility shall make reasonable efforts to read the meters of customers who cannot be available during normal business hours.

History: 1-2-56; am. Register, September, 1982, No. 321, eff. 10-1-82; am. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.16 Billing. (1) (a) Each bill, including the customer's receipt, provided by

Register, October, 1989, No. 406

tric service supplied, including the secondary and, where applicable, primary voltages.

(2) Lamps used or furnished by the utility for highway or area illumination shall initially be such that the customer receives the proper illumination in lumens specified in the rate. If the street lighting rate is based on wattage, or if the utility furnishes lamps to customers free or at reduced cost, the lamp bulbs shall be of such efficiency in lumens per watt when used on the utility's circuits that customers may obtain their lighting service under the most favorable conditions practicable under the rate schedule.

History: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.07 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 113.37.

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: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.08 Power-factor correction of gaseous tube lighting. When fluorescent, neon, zeon, or other hot or cold cathode types of gaseous tube lighting having similar power-factor characteristics are installed as the major lighting source, the customer shall furnish, install, and maintain at his own expense corrective apparatus designed to maintain at not less than 90% lagging the power-factor of individual lighting unit or the entire lighting installation.

History: 1-2-56; r. and recr., Register, October, 1965, No. 118, eff. 11-1-65.

PSC 113.09 Change in type of service. (1) If a change in type of service, such as from 25 to 60 hertz, or a change in voltage to a customer's substation, is effected at the insistence of the utility and not solely by reason of increase in the customer's load or change in the character thereof, the utility shall share equitably in the cost of changing the equipment of the customers affected as determined by the commission in the absence of agreement between utility and customer.

Note: The change in customer's equipment should be made with the greatest possible economy to the customer, and final settlement made at the time of the change. Substantially the following basis was prescribed by the commission in *Jackman v. Janesville Electric Co.*, 17 W.R.C.R. 356, and has been customarily adopted as the basis for settlement:

Payment by the utility to the customer of:

1. The remaining value of the customer's electrical equipment which is made obsolete;
2. The cost of making the resulting necessary change in interior wiring; and
3. The cost of installing the new equipment and removing the old, less the salvage value of such equipment as the customer retains.

(2) If a utility changes its standard voltage it shall notify customers in advance and if customer equipment other than lamps must be changed, an adjustment as required in sub. (1) hereof shall be made. If tests of a representative sample of customers' meters indicate that meters have

started to creep because of the voltage increase or if the tests of the representative sample show that meters average more than 0.5% fast, meters affected by the change in voltage shall be tested and adjusted.

History: 1-2-56; am. (1), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.10 Connection of motor-generator-type welders. The connection of motor-generator-type welders shall be governed by the utilities' rules covering the connection of motors.

PSC 113.101 Connection of other than motor-generator-type welders. (1) Each welder shall be provided with a name plate showing:

- (a) Name of manufacturer.
- (b) Manufacturer's type designation and serial number.
- (c) Frequency.
- (d) Primary volts.
- (e) Maximum input (primary) amperes (at rated output amperes).
- (f) Output volts at rated output amperes.
- (g) Rated output amperes.
- (h) Rated duty cycle or time rating.
- (i) Temperature rise in degrees C.
- (j) Open-circuit voltage.

(2) Each welder shall be provided with a proper disconnecting means, and shall be constructed, installed, and maintained in a manner which does not conflict with the requirements of the Wisconsin state electrical code.

(3) The consent of the utility shall be obtained and any changes in the customer's wiring and in the utility's facilities, necessary to permit welder operation under safe conditions and without interference to the service of other customers, shall be completed before any electrical welder is connected.

(4) Where the utility's distribution facilities supplying the customer using a welder are reasonably adequate and of sufficient capacity to carry other loads normally imposed, variations in the voltage of the utility's supply to such customer caused by his welder in excess of the limits set in ss. PSC 113.25, 113.26 and 113.27 shall not be considered a violation of such order by the utility.

(5) Electric welders not larger than the sizes set forth below and used under the conditions specified shall be served without charges other than applicable to the customer's other service on the same circuit.

(a) All classes of customers in any area. 110-120 or 220-240 volt electrical welders which can be operated on circuits fused at not to exceed 15 amperes and without causing violations of ss. PSC 113.25, 113.26 and 113.27 at other customers' service entrances on a reasonably adequate secondary.

(b) Commercial customers irrespective of location and customers residing in areas where service generally is supplied from individual distribution transformers.

1. 220-240 volt electric arc welders having a rated-maximum operating input current of not to exceed 37.5 amperes with an output-load voltage of 25 volts at an input of 230 volts, where the customer agrees to reduce operation of other electrical equipment to a minimum during periods the welder is in use, and agrees not to use the welder during lighting hours except in case of emergency.

2. Where the welder name plate does not give the rated primary current, the welder primary rated current shall be taken as two-thirds of the maximum final or stable short-circuit current obtainable.

3. The welder transformer used as a part of the welder shall be of the double-winding type, and the secondary shall be thoroughly insulated from the primary.

4. The welders shall not have a final or stable short-circuit current for any current setting exceeding 150% of the rated input current.

(6) Each utility may require that welders not permitted by sub. (5) be served from a separately metered circuit under rates applicable to that arrangement, or may file an extra charge for serving such welders from the general service circuit, which charge shall be based on the excess of the primary input current of the welder over the allowable input welder current, according to location, permitted under sub. (5). The input current shall be taken as two-thirds of the maximum final or stable short-circuit current obtainable.

History: 1-2-56; am. (4) and (5) (a), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.102 Radio and television interference. (1) Each utility shall own or otherwise arrange to have available when needed, suitable monitoring equipment for surveying its lines and equipment for possible radio and/or television interference.

(2) Each utility shall establish and routinely utilize in the course of its regular operation, means whereby the presence of radio and/or television interference may be detected.

(3) Each utility shall, upon notification or detection of the presence of radio and/or television interference, survey its lines and equipment for possible sources of radio and television interference. When significant interference is found, reasonable measures shall be taken to locate the source and, if on the utility's system, to mitigate the interference.

(4) Where the source of interference is determined to be equipment owned by a specific customer, the customer shall be so advised and informed of his responsibility to correct the problem (see PSC 113.015).

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.103 Planned service interruptions. (1) Unless conditions of an actual or potential emergency nature require otherwise, each utility shall strive to give reasonable advance notice to affected customers of each planned service interruption expected to last more than 30 minutes. No such notification is necessary when applying load control or on-peak control systems.

(2) Whenever feasible, interruptions expected to last more than 1 hour and affect more than 100 customers, or interruptions to critical loads, shall be scheduled for periods which will cause a minimum of customer inconvenience.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PART II

Requirements as to Rate Schedules and Rules of the Utility

(See also s. PSC 113.25)

PSC 113.11 Schedules to be filed with commission. The schedules of rates and rules to be filed with the commission by the utility shall be classified, designated, arranged, and submitted so as to conform to the requirements of current tariff or rate schedule circulars and special instructions which have been and may from time to time be issued by the commission. Provisions of the schedules shall be definite and so stated as to minimize ambiguity or the possibility of misinterpretation, and shall include, together with such other information as may be deemed pertinent, the following:

- (1) All rates for service with indication for each rate of the type and voltage of service and the class of customers to which each rate applies. There shall also be shown any limitations on loads and type of equipment which may be connected, the prices per unit of service, and the number of units per billing period to which the prices apply, the period of billing, the minimum bill, method of measuring demands including method of calculating or estimating loads or minimums, and any special terms and conditions applicable. The discount for prompt payment or penalty for late payment, if any, and the period during which the net amount may be paid shall be specified.
- (2) By municipalities, but without reference required to any particular part thereof, the voltage at which service will be supplied and the type of service (direct current or single- /or polyphase alternating current).
- (3) Forms of standard contracts required of customers for the various types of service available.
- (4) If service to other utilities, to electric cooperatives, or municipalities is furnished at a standard filed rate, either a copy of each contract or the standard contract form together with a summary of the provisions of each signed contract. The summary shall show the principal provisions of the contract and shall include the name and address of the customer, the points where energy is delivered, rate, term, minimums, load conditions, voltage of delivery, and any special provisions such as rentals. Standard contracts for such sales as that of energy for resale, street lighting, municipal athletic-field lighting, and for water utilities may be filed in summary form as above outlined.
- (5) Copies of special contracts for the purchase, sale, or interchange of energy.
- (6) List of villages, cities, and unincorporated communities where urban rates are applicable, and towns in which service is furnished.

(7) The list of service areas and the rates shall be filed in such form as to facilitate ready determination of the rates available in each municipality and in such unincorporated communities as have service at urban rates. If the utility has various rural rates, the areas where the same are available shall be indicated.

(8) Definitions of classes of customers.

(9) Extension rules for extending service to new customers indicating what portion of the extension or cost thereof will be furnished by the utility; and if the rule is based on cost, the items of cost included.

Note: See Part XII — Standards for Electric Service Extensions.

(10) Type of construction required if in excess of the standards required by the Wisconsin state electrical code.

(11) Specification of such portion of service as the utility furnishes, owns, and maintains, such as service drop, service entrance cable or conductors, conduits, service entrance equipment, meter, and socket. Indication of the portions of interior wiring such as range or water-heater connection, furnished in whole or in part by the utility, and statement indicating final ownership and responsibility for maintaining equipment furnished by utility.

(12) Statement of the type of special construction commonly requested by customers which the utility allows to be connected, and terms upon which such construction will be permitted, with due provision for the avoidance of unjust discrimination as between customers who request special construction and those who do not. This applies, for example, to a case where a customer desires underground service in overhead territory.

(13) Rules with which prospective customers must comply as a condition of receiving service, and the terms of contracts required.

(14) Rules governing the establishment of credit by customers for payment of service bills.

(15) Rules governing the procedure followed in disconnecting and reconnecting service.

(16) Notice by customer required for having service discontinued.

(17) Rules covering temporary, emergency, auxiliary, and stand-by service.

(18) Rules covering the type of equipment which may or may not be connected, including rules such as those requiring demand-limiting devices or power-factor corrective equipment.

PSC 113.12 Information available to customers. (1) Each utility shall have available in its offices where payments are received, copies of its rates and rules applicable to the locality. The rates and rules shall be available for customer inspection, and reasonable notice as to their availability shall be provided to customers.

(2) Each electric utility, for every municipality in which it serves shall provide in the respective telephone directories a telephone listing by which the utility can be notified during a 24-hour day of any utility service deficiency or emergency which may exist.

(3) Where a second language is common in a particular area served by the utility and so identified by the commission, all rules pertaining to billing and credit shall be available upon customer request, for distribution in English and that second language in every business office of the utility in that area accessible to the public and where customer payments are received.

(4) Each utility shall provide written notice to its residential customers annually, and a written notice to all new residential customers, at a minimum, of the rules on deposits, payment options, including deferred payment agreements and budget billing, disconnection and dispute procedures; of the availability of information on energy conservation practices, of the advisability of setting water heater thermostats no higher than 125° Fahrenheit, of the availability of the customer's actual electric consumption (or actual degree day electric consumption) for each billing period during the prior 12 months or the actual number of months that the customer has lived at that location if less than 12 months, and of the availability of agencies or programs which may provide financial aid assistance or counseling. Such notice shall contain a reply procedure to allow customers an opportunity to advise the utility of any special circumstances, such as the presence of infants or elderly persons or the use of human life sustaining equipment, and to advise the utility to contact a specific third-party agency or individual prior to any disconnection action being taken.

(5) A utility shall provide on request to current or prospective customers, tenants or property owners residential energy consumption information. This information shall include either the average consumption for the prior 12 month period or figures reflecting the highest and lowest consumption amounts for the previous 12 months. Provision of this information is neither a breach of customer confidentiality nor a guarantee or contract by the utility as to future consumption levels for the premises in question.

History: 1-2-56; emerg. cr. (3) and (4), eff. 1-21-75; cr. (3) and (4), Register, January, 1975, No. 229, eff. 2-1-75; r. and recr. (1), r. (2), renum. (3) and (4) to be (2) and (3), cr. (4), Register, March, 1979, No. 279, eff. 4-1-79; am. (4), Register, October, 1980, No. 298, eff. 11-1-80; am. (4) cr. (5), Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.131 Deposits residential. (1) **NEW RESIDENTIAL SERVICE.** (a) A utility may not require a cash deposit or other guarantee as a condition of new residential service unless a customer has an outstanding account balance with any Wisconsin electric utility or cooperative which accrued within the last 6 years and for which there is no agreement or arrangement for payment being honored by the customer, and which at the time of the request for new service remains outstanding and not in dispute, as defined in s. PSC 113.134.

(b) A deposit under this section shall not be required if the customer provides the utility with information showing that his or her gross quarterly income is at or below 200% of federal income poverty guidelines.

(c) A utility shall inform the customer of his or her right to enter into a deferred payment agreement for payment of the deposit amount and of his or her right to appeal any deposit request or amount required under this section to the public service commission.

(2) **DEFERRED PAYMENT.** In lieu of cash deposit or guarantee, an applicant for new residential service who has an outstanding account balance

Register, October, 1989, No. 406

accrued within the last 6 years with the same utility shall have the right to receive service from that utility under a deferred payment agreement, as defined in s. PSC 113.133, for the outstanding account. A customer who defaults on the deferred payment agreement may be required by the utility to furnish a deposit.

(3) **GUARANTEE TERMS AND CONDITIONS.** (a) A utility may accept, in lieu of a cash deposit for new or existing residential service, a contract signed by a guarantor satisfactory to the utility whereby payment of a specified sum not exceeding the cash deposit requirement is guaranteed, or whereby the guarantor accepts responsibility for payment of all future bills. If the guarantor accepts responsibility for payment of future bills, the utility shall notify the customer in writing of the agreement, and of the customer's right to refuse such an agreement. The term of the contract shall be for no longer than one year, but it shall automatically terminate after the residential customer has closed his or her account with the utility, or on the guarantor's request upon 30 days' written notice to the utility.

(b) Upon termination of a guarantee contract, or whenever the utility deems the guarantee insufficient as to amount of surety, a cash deposit or a new or additional guarantee may be required upon 20-day written notice to the customer. The service of any customer who fails to comply with these requirements may be disconnected upon 8 days' written notice.

(c) The utility shall mail the guarantor copies of all disconnect notices sent to the customer whose account has been guaranteed, unless the guarantor waives such notice in writing.

(4) **EXISTING RESIDENTIAL SERVICE.** (a) A utility may require a cash deposit or other guarantee as a condition of residential service if any of the following circumstances apply.

1. The utility has disconnected the customer's service within the last 12-month period for violation of the utility's filed rules or for nonpayment of a delinquent service account not currently in dispute.

2. Subsequent credit information indicates that the initial application for service was falsified.

3. The customer has the ability to pay for the utility service but, during the cold weather disconnections rules period, had an arrears amount incurred during that period that was 80 days or more past due. The utility may request a deposit under this section even if the customer's service has not been disconnected.

(b) A deposit under this section shall not be required if the customer provides the utility with information showing that his or her gross quarterly income is at or below 200% of the federal income poverty guidelines.

(c) When the utility requests a deposit of an existing residential customer, the customer shall be informed of his or her right to provide the deposit, guarantee, or to establish a deferred payment agreement. The customer shall be given 30 days to provide the deposit, guarantee, or enter into a deferred payment agreement for the deposit amount.

(5) **WRITTEN EXPLANATION.** A utility shall provide a written explanation of why a deposit or guarantee is being required for a residential account. The explanation shall include notice of the customer's right to appeal any deposit request or amount required under this section to the public service commission.

(6) **REASONABLENESS OF DEPOSIT.** When requesting a deposit from a residential customer, the utility shall consider the customer's ability to pay in determining the reasonableness of its request, including the following factors:

- (a) Size of the delinquent account.
- (b) Customer's payment history.
- (c) Time that the debt has been outstanding.
- (d) Reasons why the debt has been outstanding.

(e) Any other relevant factors concerning the circumstances of the customer, as household size, income and expenses.

(7) **AMOUNT OF DEPOSIT.** (a) The maximum deposit for a new residential account shall not exceed the highest estimated gross bill for any 2 consecutive billing periods selected by the utility.

(b) Except as provided in par. (c), the maximum deposit for an existing residential account shall not exceed the highest actual gross bill for any 2 consecutive months within the preceding 12 month review period, as determined by the utility.

(c) If, during the cold weather disconnection rules period, a customer had an arrears amount incurred during this period that was 80 days or more past due and had the ability to pay for utility service, the deposit may not exceed the highest actual gross bills for any 4 consecutive months within the preceding 12 months review period, as determined by the utility.

(8) **REFUSAL OR DISCONNECTION OF SERVICE.** Residential service may be refused or disconnected for failure to pay a deposit request subject to the rules pertaining to disconnection and refusal of service, as provided in s. PSC 113.132.

(9) **INTEREST.** (a) Deposits for residential accounts shall bear interest payable from the date a deposit is made to the date it is applied to an account balance or is refunded.

(b) The interest rate to be paid shall be subject to change annually on a calendar year basis. The commission shall determine the rate of interest to be paid on deposits held during the following calendar year and notify utilities of that rate by December 15 of each year. The rate shall be equal to the weekly average yield of one-year United States treasury securities adjusted for constant maturity for the week ending on or after December 1 made available by the federal reserve board, rounded to the nearest tenth of one percent.

Note: This rule will take effect November 1, 1989 for deposits held at that time and any subsequent deposits. The commission will determine the interest rate for 1989, based on the December, 1988 calculations.

(c) The rate of interest set by the commission shall be payable on all deposits. Utilities shall calculate the interest earned on each deposit at the time of refund and at the end of each calendar year. The interest rate in a calendar year shall apply to the amount of the deposit and to all interest accrued during the previous year(s), for the fraction of the calendar year that the deposit was held by the utility.

(10) **REFUND.** The utility shall refund the deposit of a residential customer after 12 consecutive months of prompt payment.

(11) **REVIEW.** The utility shall not continue to require a cash deposit for a residential account unless a deposit is permitted under the provisions of sub. (4) or (10).

(12) **METHOD OF REFUND.** Any deposit or portion thereof refunded to a residential customer shall be refunded by check unless both the customer and the utility agree to a credit on the regular billing, or unless sub. (14) applies.

(13) **REFUND AT TERMINATION OF SERVICE.** On termination of residential service, the utility shall credit the deposit, with accrued interest, to the customer's final bill and return the balance within 30 days of issuing the final bill.

(14) **ARREARAGES.** An arrearage owed by a residential customer may be deducted from the customer's deposit under any of the following conditions:

(a) Except as provided in par. (c), a deposit may be used by the utility only to satisfy an arrearage occurring after the deposit was made.

(b) If the utility deducts an arrearage from a customer deposit, it may require the customer to bring the deposit up to its original amount. Failure of the customer to do so within 20 days of mailing a written request for payment is a ground for disconnection.

(c) When a deposit is refunded to the customer, the utility may first deduct any arrearage owed by the customer, whether the arrearage arose prior to or after the date of the deposit.

(15) **APPLICABILITY.** The provisions in subs. (2) and (3) are not applicable to deposits or guarantees made in connection with the financing of extensions or other equipment.

History: Emerg. cr. eff. 1-21-75; cr. Register, January, 1975, No. 229, eff. 2-1-75; am. (3) to (14), Register, November, 1980, No. 299, eff. 12-1-80; renum. (7) to (14) to be (8) to (15), cr. (7), Register, April, 1985, No. 352, eff. 5-1-85; r. and recr. Register, October, 1989, No. 406, eff. 11-1-89.

PSC 113.1315 Deposits for commercial and farm service. (1) **DEPOSIT REQUEST.** If the credit of an applicant for commercial and farm service has not been established satisfactorily to the utility, the utility may require the applicant to post deposit. The utility shall notify the applicant within 30 days of the request for service as to whether a deposit will be required. The 30-day period shall begin from the date the applicant provides all requested relevant information to the utility. If no request for a deposit is made within this period, no deposit shall be required, except under the provisions of the sub. (5). If a request for a deposit is made, the applicant must be given at least 30 days to provide payment, or guarantee, or to establish an installment payment agreement.

(2) **CONSIDERATIONS FOR DEPOSIT.** In determining whether an applicant for commercial or farm service has satisfactorily established its credit, the utility shall inform the customer that it will consider any or all of the following factors, if provided by the customers, before requiring a security deposit.

(a) Credit information from credit reporting services.

(b) Letter of credit from a financial institution or another utility.

(c) Applicant's business characteristics, such as type of business, length of time the applicant has operated, the applicant's business experience and knowledge, and estimated size of the applicant's bills;

(d) Assets of the business.

(e) The financial condition of the business, as indicated in a financial statement.

(3) **INSTALLMENT PAYMENT AGREEMENT.** A commercial or farm customer or applicant for commercial or farm service of which a deposit is requested shall have the right to receive service under an installment payment agreement.

(4) **GUARANTEE TERMS AND CONDITIONS.** (a) The utility may accept, in lieu of a cash deposit for new or existing commercial or farm service, a contract signed by a guarantor satisfactory to the utility whereby payment of a specified sum not exceeding the cash deposit requirement is guaranteed. The term of such contract shall be for no longer than 2 years, but it shall automatically terminate after the commercial or farm customer has closed its account with the utility, or at the guarantor's request on 30 days' written notice to the utility.

(b) On termination of a guarantee contract, or whenever the utility deems the amount of surety insufficient, a cash deposit or a new or additional guarantee may be required on 20-day written notice to the customer. The service of a customer who fails to comply with these requirements may be disconnected on 8 days written notice, subject to the establishment of an installment payment agreement.

(c) The utility shall mail the guarantor copies of all disconnect notices sent to the customer whose account he or she has guaranteed, unless the guarantor waives such notice in writing.

(5) **EXISTING COMMERCIAL OR FARM SERVICE.** (a) The utility may require an existing commercial or farm customer to furnish a deposit if the customer has not made prompt payment of all bills within the last 24 months, or if the customer has the ability to pay for the utility service but, during the cold weather disconnection rules period, had an arrears amount incurred during that period that was 80 days or more past due.

(b) When the utility requests a deposit of an existing commercial or farm customer, the customer shall have 30 days to provide the deposit, guarantee, or to establish an installment payment agreement.

(6) **WRITTEN EXPLANATION.** A utility shall provide a written explanation of why a deposit or guarantee is being required for commercial or farm service. The explanation shall include notice of the customer's right to appeal any deposit request or amount required under this section to the public service commission.

PUBLIC SERVICE COMMISSION

106-5
PSC 113

Madison gas and electric company,
Northern states power company,
Superior water, light and power company,
Wisconsin electric power company,
Wisconsin power and light company, and
Wisconsin public service corporation

shall show for each meter the following information:

1. The customer name, billing address and service address, if different from the billing address.
2. For residential customers in multi-unit buildings, current meter identification information or number and account number.
3. The present and last preceding meter readings.
4. The present and last preceding meter reading dates.
5. The next scheduled meter reading date.
6. The number of days in the billing period.
7. The number of units consumed.
8. The class of service with clear explanation of codes and abbreviations.
9. The rate schedule under which the bill is calculated including the itemized calculations of the rate schedule component including, but not limited to, such items as customer charge, energy blocks, demand charges, minimum bills, and all other billing factors necessary for the customer to check the calculation of the bill.
10. Clear itemized adjustment clause bill calculation.
11. Amount subject to tax, tax rate, and tax billed.
12. Clear itemization of the amount of the bill for the present billing period, any unpaid balance from previous billing periods and any late payment charges.
13. Clear itemization of other utility charges and credits.
14. Degree day information.
15. A statement that the utility will, upon customer request, provide the information and assistance necessary for the customer to evaluate fuel consumption and conservation.

(b) Upon receiving such request in par. (a) 15, the utility shall provide consumption and degree day information by billing periods for at least the last year and information and instructions needed by the customer to make consumption comparisons and evaluate his or her conservation efforts.

(c) Bills rendered without an actual meter reading shall be specifically marked as estimated.

(d) Each bill, including the customer's receipt rendered by electric utilities not included in par. (a), shall show the present and last preceding meter readings, the date of the present reading, the number of units consumed, the class of service if other than residential, and the rate schedule under which the bill is calculated. In lieu of including the rate schedule on the bill the utility may, whenever a rate change becomes effective or at least once a year, supply each customer with the schedule of rates at which the bills are calculated and any other rates that might be applicable. Bills rendered at rates requiring the measurement of a number of different factors shall show all data necessary for the customer to check the calculation of a bill. All monthly adjustment clause factors necessary for a customer to check the calculation of the bill shall be included on the monthly bill. Minimum and estimated bills shall be distinctly marked as such. Estimated bills are bills rendered without actual meter readings.

(e) The utility may include on the utility service bill charges to the customer resulting from other services, materials, or work provided by the utility as a result of commission-approved conservation and alternative energy programs, and, with the consent of both the customer and the utility, merchandise and service repair work charges. The charges shall be listed individually on the bill, and the customer shall be permitted to include such payment in his or her payment for electric utility service. Any partial payments shall be applied first to the amount due for utility service and the remainder to the other charges.

(f) Costs or fees incurred by and awarded to the utility by a court of law, for pursuing bill collection through other agencies, such as small claims courts, or extraordinary collection charges as allowed and specified in the utility's tariffs filed with the public service commission, may be included on the utility's service bill. Such tariffs shall be established on the basis of rate case proceedings or generic proceedings to establish the reasonableness of such charges.

(g) The commission may authorize the utility to make late payment charges to a customer's utility service bill that is not paid in full within 20 days following issuance of the bill and for utility service that has been obtained by diversion around or tampering with the metering of the account. The late payment charge may be either a one-time charge as provided in par. (h) or a monthly charge as provided in par. (i). The utility shall receive approval from the commission of the method it desires to use and shall not change methods without commission approval.

(h) If the utility is authorized to make a one-time late payment charge, such charge shall comply with the following requirements:

1. The bill shall clearly indicate the amount of the late payment charge and the date after which the late payment charge shall be applied.

2. Except as provided in subd. 8, late payment charges shall be applied no sooner than 20 days after the date of issuance of the bill.

3. The amount of the late payment charge shall be 3% of the bill, except a minimum charge of \$.30 shall apply.

4. Late payment charges shall be applied to all customer classes and rate classifications.

5. The utility shall not waive any properly applied late payment charges.

Note: See s. PSC 113.133 (5) and (6).

6. A late payment charge shall be applied only once to any given amount outstanding.

7. If a customer disputes a bill for utility service or portion thereof and does not pay the disputed bill in full within 20 days following issuance of the bill, the late payment charge shall be applied only to that portion of the disputed bill later found to be correct and payable to the utility.

8. Bills issued for utility service previously unbilled because of meter diversion or tampering with the proper metering of the account may include a late payment charge when issued.

(i) If the utility is authorized to make monthly late payment charges, such charges shall comply with the following requirements.

1. The amount of the charge shall be no more than 1-½% per month and shall be filed with and approved by the commission before it can be applied.

2. The late payment charge shall be applied to the total unpaid balance for utility service, including unpaid late payment charges.

3. Except as provided in subd. 9, the late payment charge shall be applied no sooner than 20 days after the date of issuance of the bill.

4. The late payment charge shall be applied to all customer classes and rate classifications.

5. If a customer disputes a bill for utility service or portion thereof and does not pay the disputed bill in full within 20 days following issuance of the bill, the late payment charge shall be applied only to that portion of the disputed bill later found to be correct and payable to the utility.

6. The utility may not waive any properly applied late payment charge.

Note: See s. PSC 113.133 (5) and (6).

7. No additional late payment charge may be applied to a delinquent account for utility service after the date on which the delinquent account was written off by the utility as uncollectible.

8. If a utility changes the type of late payment charge or initiates a late payment charge, the new charge shall apply only to utility service provided after the effective date of the change or initiation.

9. Bills issued for utility service that was previously unbilled because of meter diversion or tampering with the proper metering of the account may include a late payment charge when issued. The late payment charge may be applied from the estimated date that the diversion or tampering began.

(j) A customer who receives a lump sum payment from an outside source to be used to pay his or her utility service bill may, at the utility's option, apply the payment to the customer's account in equal monthly installments.

(2) (a) If the billing period is longer or shorter than allowed in s. PSC 113.15, the bill shall be prorated on a daily basis unless other provision is made in the utility's filed rules.

(b) If the utility unable to gain access to read a standard residential meter at the end of each billing period, the utility shall, upon customer request, provide meter reading forms which allow the customer to send a card reading in time for billing. If actual readings cannot be obtained, the utility shall also leave a meter reading form at the premises for the customer to complete and return to the utility in time for bill preparation or leave a form at the premises explaining the estimation or leave a form at the premises explaining the estimation and how to avoid future estimations. This form shall be used when billing systems do not have sufficient time to allow the customer to return the card reading prior to billing.

(c) If no form is left on the premises, or if the form is not returned in time to be processed in the billing cycle, a minimum or estimated bill may be rendered. In cases of emergency the utility may render minimum or estimated bills without reading meters or supplying meter reading forms to customers. Only in unusual cases or when approval is obtained from the customer may than three consecutive estimated bills be rendered.

(d) If meter reading is not scheduled on a monthly basis, the utility shall supply customers with meter reading forms for the periods when the meter is not scheduled to be read by the utility. Customers may not be required to provide these meter readings. If the customer informs the utility he or she does not desire to supply a reading, or if the form is not returned in time for the billing operation, a minimum or estimated bill may be rendered.

(e) When an actual meter reading indicates that a previous estimated bill was abnormally high or low, the utility shall calculate the bill for the entire period as if use of service was normally distributed throughout the period. The previous estimated charge shall be deducted from the recomputed total. If there is evidence to indicate that actual use was not uniform throughout the period, the billing shall be adjusted according to available information.

(3) (a) Credits due a customer because of meter inaccuracies, errors in billing, or misapplication of rates shall be shown separately and identified.

(b) The original billing rendered because of meter inaccuracy, or errors in billing, or misapplication of rates, shall be separated from the regular bill and the charges explained in detail.

(4) (a) Each bill for service shall be computed at the proper filed rate, which shall be the rate selected by the utility unless the customer selects a rate under par. (e).

(b) When it is difficult to determine what rate should be applied until there has been actual usage, the rate classification shall be reviewed when there has been adequate usage to determine the lowest applicable rate but no later than the end of the first 12 months of usage. The customer shall be notified as soon as the lowest firm service rate option has been determined and be given the option to select a different applicable rate as set forth in par. (e). The rate determined by the utility to be the lowest

firm rate option shall be effective with the billing following the date of notification by the utility unless the customer selects a rate. If the customer selects a rate, the rate shall be effective with the current billing period if required billing information is available but not later than the beginning of the second billing period following the customer's request.

(c) A utility may enter into contracts having terms longer than one year, but the rates paid under such contracts shall be the utility's lowest applicable firm service rate option, for which meter usage information is known, on file with the commission at the time of the contract, unless the customer selects another applicable rate at the time of the contract.

(d) If the utility has information that the customer could qualify for a lower rate by changing voltage delivery, or combining or separating services as allowed under the utility's rules and regulations, he or she shall be notified; but no change in rates shall be made until the customer makes the necessary modifications. If such modifications are made, the utility shall change the customer's rate classification effective for the beginning of the current billing period if required billing information is available, but the change shall be effective no later than the beginning of the second billing period following the customer's request and notification has been made.

(e) When a customer is eligible to take service under more than one rate schedule, the utility shall inform the customer at the times specified in par. (f) of the option to select a rate, of the options and service classifications for which the customer may be eligible and the conditions necessary to qualify, and of the firm service rate option that would have resulted in the lowest rate based on the previous 12 months' service and on the metered customer usage information known to the utility. The information provided shall include a general explanation of electric service usage characteristics to assist the customer in selecting the lowest rate consistent with the customer's anticipated usage and needs. If the customer requests a change in rate classification, it shall be effective at the beginning of the current billing period if required billing information is available, but such change shall be effective no later than the beginning of the second billing period following the customer's request.

(f) At least once in each calendar year customers with more than one rate option shall be informed of the option to select a rate set forth in par. (e). The notification requirement may be satisfied through the use of a bill insert. The customer shall also be informed of the option to select a rate whenever there is a change in rates that would affect the customer, and at any other time the customer so requests. If the utility notifies the customer of the option to select a rate as the result of a rate change or a customer request, such notification shall satisfy the requirement to notify the customer at least once in each calendar year.

(g) Nothing in this section shall be construed as permitting a customer to select a service classification inconsistent with the utility's applicable tariff provisions or with contractual agreements between the utility and the customer.

(5) Each utility shall offer a budget payment plan to all prospective and existing residential customers and to all commercial accounts for which the primary purpose of the service is to provide for residential living, subject to the following minimum requirements:

(a) A budget payment plan tariff shall be on file with the public service commission, applicable only to charges for utility services under public service commission jurisdiction.

(b) A budget payment plan may be established at any time of the year. The budget amount shall be calculated on the basis of the estimated consumption and estimated applicable rates through the end of the budget year. If the budget year is a fixed year, then prospective and existing customers requesting a budget payment plan after the start of the fixed year shall have their initial monthly budget amount determined on the basis of the number of months remaining in the current budget year.

(c) An applicant for a budget plan shall be informed at the time of application that budget amounts shall be reviewed and changed every 6 months, if necessary, in order to reflect current circumstances. Adjustments to the budget amount shall be made with the objective that the customer's underbilled or overbilled balance at the end of the budget year shall be less than one month's budget amount.

(d) Customers on the budget payment plan shall be notified of adjustments by means of a bill insert, a message printed on the bill itself, or both. The customer shall be adequately informed of the adjustment at the same time the bill containing the adjustment is rendered.

(e) Customers who have arrearages shall be allowed to establish a budget payment plan by signing a deferred payment agreement for arrears, according to the provisions of s. PSC 113.133.

(f) Budget payment plans shall be subject to the late payment charge provisions. In addition, if a budget payment is not paid, the customer shall be notified with the next billing that if proper payment is not received subsequent to this notification, the next regular billing may effectuate the removal of the customer from the budget plan and reflect the appropriate amount due.

(g) At the end of a budget year, if an underbilled or overbilled balance exists in the account, the balance shall be handled as follows:

1. A customer's debit balance shall be paid in full or, at the customer's option, on a deferred basis.

2. A customer's credit balance shall be applied, at the customer's option, against the customer's account, credited in monthly installments to the customer's account over the course of the next budget year, or refunded to the customer.

(6) An occupant shall apply for utility service. An occupant who uses utility service but does not apply for it may be billed an estimated or actual amount at a later date for service used prior to the time of application. The utility must have prior to the time of application. The utility must have reasonable grounds to establish responsibility for the backbilling. Failure to pay charges resulting from this backbilling may result in disconnection of service. The utility shall inform the occupant of the right to dispute the billing through the dispute procedures set forth in s. PSC 113.134.

(7) (a) The utility may request all new customers to make an application for service. The utility may require that a verbal or written application be made by telephone, letter or in person. The utility shall establish

a written policy for requesting the information. The utility may require the customer to provide:

1. Name or names of party responsible for bill payment.
2. Address where service is to be provided.
3. Mailing address if different from service address.
4. Address of residence immediately prior to application.

(b) The utility may request additional credit information from applicants as part of its application for service. Except as provided in s. PSC 113.132 (3), utility service shall not be disconnected or refused for refusal to provide any information other than that specified in par. (a).

(c) The utility may accept third party applications for service. The utility shall send written confirmation of receipt of the service application to the party responsible for bill payment.

(8) (a) Where rental residential dwelling utility service is in the tenant's name, and the tenant vacates the residential dwelling unit, continued utility service for such dwelling unit, continued utility service for such dwelling unit may be placed in the name of the owner or property manager.

(b) The utility shall provide the owner or property manager with written notice of its intent to transfer billing responsibility. Such notice shall provide the owner or property manager with 5 days to notify the utility of:

1. The name of the customer who should be placed in service, such service date not to be later than 5 days from the notice mailing date; or

2. That utility service to the premises should be terminated and affirms to the utility that such termination will not endanger human health or life or cause damage to property during the period of disconnection.

(9) (a) A utility shall pay interest on customer overpayments not refunded to the customer within 60 days of receipt by the utility if the net amount refunded exceeds \$20 per refund and the overpayment was made to the utility due to:

1. Meters registering fast as defined in s. PSC 113.17.
2. Use of an incorrect meter constant or multiplier.
3. Incorrect service or rate classification, provided the information furnished by the customer to the utility was not deficient, or the customer did not choose the rate as provided in s. PSC 113.16 (4).
4. Billing based on a switched meter condition, where the customer was on the incorrect meter.

5. Misapplication of rates.

(b) A utility is not required to pay interest to customer for overpayments made for:

1. Financing of service extensions or other equipment.
2. Budget payment plans.

3. Estimated bills, if the utility made a reasonable effort to obtain access. Reasonable efforts to gain access means that the utility has notified the customer after 3 consecutive estimated readings that the utility will read the meter at other than standard business hours at the customer's request.

4. Receipt of lump sum payments made from an outside source as the Low Income Home Energy Assistance Program or other like programs.

(c) The rate of interest to be paid shall be calculated in the same manner as provided for in s. PSC 113.131 (10) (b). Interest shall be paid from the date when the customer overpayment was until the date when the overpayment is refunded. Interest will be calculated on the net amount overpaid in each calendar year.

(d) Nothing in these rules shall prevent the commission or its staff from requiring the payment of interest on amounts returned to customers in those instances where the commission or its staff finds that such payment is necessary for a fair and equitable resolution of an individual complaint.

History: 1-2-56; r. and rec. (1), Register, August, 1976, No. 248, eff. 9-1-76; am. Register, March, 1979, No. 279, eff. 4-1-79; am. (1), Register, October, 1980, No. 298, eff. 11-1-80; am. (5), Register, November, 1980, No. 299, eff. 12-1-80; renum. (1) (d) to be (1) (f) and am. (intro.), cr. (10) (d), (e) and (g) and am. (5) (f), Register, September, 1981, No. 309, eff. 10-1-81; r. rec. Register, October, 1989, No. 406, eff. 11-189.

PSC 113.17 Adjustment of bills for metering inaccuracies. (1) Whenever a meter creeps or whenever a varhour meter or watthour meter installation, with or without pulsing devices and recording equipment, is found upon test to have an average error of more than 2% from 100%, or a demand metering installation more than 1.5% plus the errors allowed in s. PSC 113.41 from 100%, a recalculation of bills for service shall be made for the period of inaccuracy. The recalculation shall be made on the basis that the service meter should be 100% accurate with respect to the working test standard.

Note: (See PSC 113.435 Determination of average meter error.)

(2) (a) If the period of inaccuracy cannot be determined, it shall be assumed that the metering equipment has become inaccurate at a uniform rate since it was installed or last tested except as otherwise provided in pars. (b) and (c).

(b) Recalculation of bills shall be on the basis of actual bills except that if the monthly consumption has been reasonably uniform, averaged less than 500 kW hrs. per month and involves no billings other than for kW hrs., the recalculation of bills may be based on the average monthly consumption and the inaccuracy may be assumed to have existed for a period equal to one-half the time elapsed since the meter was installed or since the last previous test, whichever is later, up to a limit of 10 years.

(c) The error in registration due to "creep" shall be calculated by timing the rate of "creeping" and assuming that this creeping affected the registration of the meter for 25% of the time since the last test or since the meter was installed.

(d) When the average error cannot be determined by test because of failure of part or all of the metering equipment, it shall be permissible to use the registration of check-metering installations, if any, or to estimate the quantity of energy consumed based on available data.

Register, October, 1989, No. 406

(3) If the recalculated bills indicate that more than \$1 is due an existing customer or \$2 is due a person no longer a customer of the utility, the full amount of the calculated difference between the amount paid and the recalculated amount shall be refunded to the customer. The refund to an existing customer may be in cash or as credit on a bill. If a refund is due a person no longer a customer of the utility, a notice shall be mailed to the last known address and the utility shall upon demand made within 3 months thereafter refund the amount due.

(4) If the recalculated bills indicate that more than \$10 is due the utility, the utility may bill the customer for the amount due. For all customers, the period of backbilling may not exceed 24 months unless there is evidence of fraud or deception.

Note: Section 196.635, Stats., reads as follows:

196.635 Unbilled utility service. All service supplied by a public utility must be billed within 2 years of such service. No customer shall be liable for unbilled service 2 years after the date of the service unless:

(1) The utility made a reasonable effort to measure the service, but the customer did not allow the utility access to any device, including but not limited to a meter, necessary to measure service.

(2) The customer obtained the service by fraud or deception, including but not limited to theft or tampering with any device, including but not limited to a meter, necessary to measure service.

(5) A classified record shall be kept of the number and amount of refunds and charges made because of inaccurate meters, stopped or broken meters, faulty or incorrect metering installations, failure to apply appropriate multipliers or application of incorrect multipliers, misapplication of rates, fraud or theft of service, and other erroneous billing. A report from this record for the calendar year (or an annual period compatible with the meter accuracy summary report required by s. PSC 113.23 (3).) shall be submitted to the commission by April 1 of the following year. The report shall show the number and amount of refunds or charges under each of the categories listed above.

History: 1-2-56; am. (5), Register, October, 1965, No. 118, eff. 11-1-65; am. Register, February, 1978, No. 266, eff. 3-1-78; am. (2) (b), (4) and (5), Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.18 Billings for grounds. Subject to the utility's rules setting forth the method of determining a reduced rate herein authorized, if an accidental ground is found on a customer's wiring or equipment, the utility may estimate the kilowatt-hours so lost and bill for them at a reduced rate not less than the generated or purchase cost of the energy, but no such adjustment shall be made for energy supplied after the customer has been notified and has had an opportunity to correct the condition. Any demand (kilowatt) caused by an accidental ground may be billed at a rate lower than that filed for the class of service involved. The utility shall notify the customer of the ground whenever it is found or suspected.

Next page is numbered 107

PART IV

Utility Records and Interruptions
of Service

(See also ss. PSC 113.29, 113.42, 113.43 and 113.45)

PSC 113.19 **Employes authorized to enter customers' premises.** The utility shall keep a record of employes authorized pursuant to s. 196.171, Stats., to enter customers' premises.

PSC 113.20 **Maps and diagrams.** Each utility shall have record systems (maps, records, diagrams, drawings or computer display systems) showing the location of its property, in sufficient detail so that the adequacy of service to existing customers may be checked and facilities located.

History: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.21 **Customers' complaints.** Each utility shall investigate and keep a record of complaints received by it from its customers in regard to safety, service, or rates, and the operation of its system. The record shall show the name and address of the complainant, the date and nature of the complaint, and its disposition and the date thereof. Each utility also shall document all contacts and action relative to deferred payment agreements and disputes.

History: 1-2-56; am. Register, March, 1979, No. 279, eff. 4-1-79.

PSC 113.22 **Interruptions of service.** (1) Each utility shall keep a record of all interruptions to service affecting the entire distribution system of any single community or an important division of a community, and include in such record the location, date and time of interruption, the duration, the approximate number of customers affected, the circuit or circuits involved, and, when known, the cause of each interruption.

(2) When complete distribution systems or portions of communities have service furnished from unattended stations, these records shall be kept to the extent practicable. The record of unattended stations shall show interruptions which require attention to restore service, with the estimated time of interruption. Breaker or fuse operations affecting service should also be indicated even though duration of interruption may not be known.

(3) Each utility shall notify the commission of any event described in (a), (b), (c), (d) or (e) involving bulk power supply facilities (any generating unit or electric facilities operating at a nominal voltage of 69 kV or higher):

(a) Any interruption or loss of service to customers for 15 minutes or more to aggregate firm loads in excess of 200,000 kW. Such notification shall be made by telephone as soon as practicable without unduly interfering with service restoration and, in any event, within one hour after beginning of the interruption. A confirming written report shall be submitted within 2 weeks.

(b) Any interruption or loss of service to customers for 15 minutes or more to aggregate firm loads exceeding the lesser of 100,000 kW or half of the current annual system peak load and not required to be reported under (a). Such notification shall be made by telephone no later than the beginning of the commission's next regular work day after the interrup-

tion occurred. A confirming written report shall be submitted within 2 weeks.

(c) Any decision to issue a public request for reduction in use of electricity. Notification of such decision shall be made by telephone at the time of issuing such request. A confirming written report shall be submitted within 2 weeks.

(d) Any action to reduce firm customer loads by reduction of voltage for reasons of maintaining adequacy of bulk electric power supply. Notification of such action shall be made by telephone at the time of taking such action. A confirming written report shall be submitted within 2 weeks.

(e) Any action to reduce firm customer loads by manual switching, operation of automatic load shedding devices, or any other means for reasons of maintaining adequacy of bulk electric power supply. Notification of such action shall be made by telephone at the time of taking such action.

(4) Each utility shall notify the commission of service interruptions not involving bulk power supply facilities as follows:

(a) Interruptions of 60 minutes or more to an entire distribution substation bus or entire feeder serving either 500 or more customers or entire cities or villages having 200 or more customers shall be reported within 2 weeks by a written report.

(5) The written reports of subs. (3) and (4) above shall include the date, time, duration, general location, approximate number of customers affected, identification of circuit or circuits involved, and, when known, the cause of the interruption. When extensive interruptions occur, as from a storm, a narrative report including the extent of the interruptions and system damage, estimated number of customers affected, and a list of entire communities interrupted may be submitted in lieu of reports of individual interruptions.

History: 1-2-56; am. (1) and cr. (3) to (5), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.23 Metering equipment records. (1) A test record shall be made whenever a unit of metering equipment is tested but only the record of the last test date need be retained after the equipment is again tested. This record shall show information to identify the unit and its location; equipment with which the device is associated; the date of test; reason for the test; readings before and after the test; a statement as to whether or not the meter "creeps" and in case of creeping, the rate; a statement of "as found" and "as left" accuracies sufficiently complete to permit checking of the calculations employed; indications showing that all required checks have been made; a statement of repairs made, if any, and identification of the testing standard and the person making the test. Test results from automatic testing equipment need not show the detail of the calculations employed.

(2) Each utility shall keep a record for each unit of metering equipment showing when the unit was purchased; its cost; utility's identification; associated equipment; essential name-plate data; dates of the last 2 tests; results of the last "as found" and "as left" tests unless separate records are kept of each test for each unit; and locations where installed with dates of installation and removal.

(3) Each utility shall summarize yearly in a combined tabulation all individual meter and overall light and heavy load "as found" tests at the power factors as required by these rules. This summary shall be divided according to length of meter test period, and separately for single-phase, and polyphase meters. The summary shall show the number of "as found" tests within each of the following accuracy classifications: not recording; 93.9% and under; 94.0% to 95.9%; 96.0% to 97.9%; 98.0% to 98.9%; 99.0% to 100.0%; 100.1% to 101.0%; 101.1% to 102.0%; 102.1% to 104.0%; 104.1% to 106.0%; and over 106.0%. The accuracy summary for the calendar year shall be submitted to the commission by April 1 of the following year, except that utilities using the variable interval plan of s. PSC 113.515 shall submit the accuracy summaries for the test year ending September 30 by the following January 1. As found, tests of other units of metering equipment shall be summarized in a manner consistent with the method of testing employed by the utility. A record shall be kept of the number of complaint tests made each year. For the annual summary for variable interval plan tests, to show the range of test intervals for each group, the reporting utility shall include for each group the dates of the most recent and most distant periodic tests.

(4) Each utility authorized to test meters under the statistical sample testing plan of s. PSC 113.518 shall submit to the commission, by April 15 of the following year, a summary of the statistical sample testing results for the prior calendar year. The summary shall include group and lot numbers; a description of meters in each lot; the number or meters in each lot; the number of meters sample tested in each lot; full load sample mean accuracy (\bar{x}), estimated standard deviation(s) and total estimated percent defective (P); light load sample mean accuracy (\bar{x}), estimated standard deviation(s) and total estimated percent defective (P); projected annual rates of change for \bar{x} , s and P at both full and light load analysis points; lots requiring testing and actual \bar{x} , s and P data from meters where entire lot tests were required under the program; group and lot numbers; a description of meters in each lot and the number of meters in each lot for the succeeding test year.

History: 1-2-56; am. (3), Register, December, 1957, No. 24, eff. 1-1-58; am. (3), Register, February, 1978, No. 266, eff. 3-1-78; am. (1) to (3), cr. (4), Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.24 Preservation of records. The following records shall be preserved and kept available for inspection by the commission for the periods indicated. The list is not to be taken as comprehending all types of utility records.

Description of records	Period to be retained
Maps showing the location and physical characteristics of existing plants	Currently
Engineering records in connection with construction projects if construction of project results wholly or in part.....	Until record is superseded or 6 years after plant is retired
Production records:	
Station and system generation records	Permanently
All other records taken in the plant.....	6 years

Operating records:

Load dispatcher data	6 years
Interruption records.....	6 years
Meter test	See PSC 113.23
Meter history records.....	Life of meter
Annual meter accuracy summary	16 years
Voltmeter records.....	See PSC 113.29
All other records of operation.....	6 years

Equipment record:

Must be placed in mortality study before
destroying.....Life of equipment

Customers' records:

Inspection of customers' premises	6 years
Customers' complaint record.....	6 years
Meter reading sheets.....	* years
Billing record	* years
Customer deposits.....	6 years after refund

Filed rates and rules Permanently

Note: See also "Regulations to Govern the Preservation of Records of Electric, Gas and Water Utilities" adopted by the commission in dockets 2-U-5005 and 2-U-5396, May 4, 1972, for more comprehensive listing of retention periods of specific records.

*Where machine billing is used and meter readings recorded on tabulating cards the register sheets may be considered the "meter reading sheets" and the "billing records." "Meter reading sheets" and "billing records" or the "register sheets" shall be kept 6 years or until they are no longer needed to adjust bills. This means that the records must be kept 6 years or from the date of one meter test to the next whichever is longer.

History: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78.

PART V

Voltage Standards

PSC 113.25 Standard and maintenance of voltage. Each utility shall adopt standard nominal service voltages for each of the several areas into which the distribution system or systems may be divided, and shall file with the commission a statement of the standard voltages adopted. The voltage maintained at the point of attachment of customer-owned service to the company-owned conductors, shall be reasonably constant within the following limits:

(1) For all retail service, except power service, rendered in urban communities in which the utility serves 100 or more separate customers, the variation of voltage shall be no more than 5% above or below the standard voltage at any time.

(2) For all retail service except power service rendered in rural areas or in urban communities in which the utility serves less than 100 customers, the variation of voltages shall be no more than 6% above or below the standard voltage at any time.

(3) For retail power service furnished customers having demands of 500 kilowatts or less the voltage variation shall not exceed 5% above nor 10% below the standard voltage; and for retail power service furnished customers having demands of more than 500 kilowatts the voltage variation shall not exceed 10% above nor 10% below the standard voltage.

The term "retail power service" as used herein means service furnished principally for electromotive or industrial purposes and may include service for lighting incidental thereto, as defined in the utility's rates and rules.

(4) For retail combined lighting and power service, the voltage variation shall not exceed the limits provided under subs. (1) and (2) herein. For rates applicable to combined lighting and power service each utility shall file rules and regulations setting forth the utilization equipment permitted under the rates.

(5) For service rendered to public utilities and others for resale the reference voltage level shall be as mutually agreed upon by the parties concerned and the variations in voltage shall, except with respect to interchange contracts, be no more than 10% above or below the reference voltage level.

(6) The variation of voltage referred to in subs. (1) to (5), inclusive, shall be a gradual change in voltage as a result of normal changes in load and incremental adjustments in voltage level.

Note: Conservation Voltage Reduction (CVR) is a method for achieving energy and demand savings by narrowing the voltage variation bandwidth from the normally allowed 114 to 126 volts (120 volts \pm 5%) to 114 to 120 volts. The commission endorsed CVR in its Advance Plan 4 order (docket 05-EP-4) of August 5, 1986 and required major electric utilities to implement CVR or CVR pilot programs on feeders where it could be implemented at little or no cost. All utilities should be aware of this effort, which is expected to be expanded. Utilities with relatively short feeders and good voltage regulation are encouraged to review CVR potential and begin implementation where feasible. The allowable voltage reduction is applied from the maximum voltage, usually near the substation. The required minimum secondary service voltage for all customers on the feeder remains at 114 volts (urban) or 113 volts (rural).

History: 1-2-56; r. and recr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.26 Unusual variations of voltage. (1) Variations of voltage, in excess of those specified in s. PSC 113.25, caused by service interruptions, the action of the elements, temporary separation of parts of the system from the main system, infrequent and unavoidable fluctuations of short duration, or other causes beyond the control of the utility may not be considered a violation of these rules.

Note: Customers operating equipment (such as computers) that is unusually sensitive to such service fluctuations, or that requires a higher quality of service than that normally specified by these rules as adequate, may find it necessary to install, at their own expense, power conditioning equipment to protect, mitigate or otherwise provide the extraordinary standard of service needed by that load.

(2) Where the utility's distribution facilities supplying such customers are reasonably adequate and of sufficient capacity to carry the actual loads normally imposed, the utility may require that equipment on customers' premises shall be such that starting and operating characteristics will not cause an instantaneous voltage drop of more than 4% of the standard voltage or cause objectionable flicker to other customers' service.

(3) Service shall be considered inadequate when there are frequent or continuous sudden changes in voltage exceeding 2% where the rate of change exceeds 3 volts per second.

(4) When procedures for voltage reduction during emergency operating conditions have been filed and accepted or approved by the commission, variations of voltage in excess of those specified in s. PSC 113.25,

resulting from implementation of the specified procedures, shall not be considered a violation of the rules.

History: 1-2-56; renum. from 113.28 and am. and cr. (4), Register, February, 1978, No. 266, eff. 3-1-78; am. (1), Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.27 Harmonics of 60 Hz voltage wave. Utilities shall make all reasonable efforts to minimize the effects of higher harmonics. When the source of objectionable harmonics is determined to be equipment owned by a specific customer, the utility shall notify the customer and it shall be the customer's responsibility to correct the problem.

Note: See ss. PSC 113.015 and 113.70.

History: 1-2-56; r. and recr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.28 Standard and maintenance of constant current circuits. (1) Equipment supplying constant current circuits shall be so adjusted as to furnish as nearly as practicable the rated current of the circuit supplied, and in no case shall the current vary more than 4% above or below the rating of the circuit.

(2) At least once in each year the current output of the equipment supplying constant current circuits shall be checked and the equipment adjusted if necessary.

History: 1-2-56; renum. from 113.26, Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.29 Voltmeters and voltage records. (1) Each utility shall have one or more portable indicating voltmeters with an accuracy class of 1/2% of full scale. This instrument may be of the common A-C scale-reading type with an electro-mechanical movement or of the newer "digital" type with a solid-state processor and a direct-reading digital readout display. This instrument shall be maintained with an error no greater than 1/2% of full scale.

Note: (1) Also see s. PSC 113.46 — Check of standards by commission.

(2) Caution should be exercised in using digital meters in areas of high electrical fields such as in close proximity to substations, high voltage lines, transformers, regulators, etc. as unstable or erroneous readings may result.

(3) Those utilities which operate standards laboratories will require primary or laboratory grade instruments of a higher accuracy class than required above.

(2) In addition to the requirement under sub. (1), each utility serving more than 150 customers shall have one or more recording (curve-drawing) voltmeters. Each recording voltmeter shall be checked with an indicating voltmeter when it is placed in operation and when it is removed, or periodically if the instrument is in a permanent location. Notations on each chart shall indicate when the registration began (time and date) and when the chart was removed, as well as indicate the point where the voltage was taken, and the results of check with indicating voltmeter.

(3) Each utility shall make a sufficient number of voltage measurements to indicate the character of the service furnished to its customers and to satisfy the commission upon request of its compliance with the voltage requirements. All voltmeter records, unless re-

Register, December, 1987, No. 384

placed by more recent records, shall be available for inspection by the commission for a period of 6 years.

History: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78; r. and recr. Register, December, 1987, No. 384, eff. 1-1-88.

PART VI

General Metering Requirements

PSC 113.30 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 113.31.

PSC 113.31 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) (a) Except as provided in par. (b), the metering and wiring in non-transient, 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 113.315, 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.

(b) Where there is a dwelling unit designated for and used by the owner, resident manager, or janitor, and the owner or landlord is responsible for its consumption, incidental common-area load may be served in combination through the same meter if otherwise permitted by the utility's tariff.

History: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78; r. and recr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.315 Individual electric meters required for non-transient multi-dwelling unit residential buildings, mobile home parks, and for commercial establishments. (1) Each dwelling and commercial unit in a multi-dwelling unit residential building, mobile home park and commercial building constructed after March 1, 1980 shall have installed a separate electric meter for each such dwelling or commercial unit. Dwelling unit means a structure or that part of a structure which is used to 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, nursing homes, convalescent homes, college dormitories, fraternities, and sororities.

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

PSC 113

(a) Where commercial unit space requirements are subject to alteration with change in tenants as evidenced by temporary versus permanent type of wall construction separating the commercial unit spaces.

(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.

History: Cr. Register, April, 1980, No. 292, eff. 5-1-80.

PSC 113.32 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: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.33 Metering at point of interchange and for customers' operating generating equipment. (1) Metering facilities located at any point where energy may flow in either direction and where the quantities measured are used for billing purposes shall consist of meters equipped with ratchets or other device to prevent reverse registration and be so connected as to meter separately energy flow in each direction. Reverse meter registration is permitted for installations with customer-owned generators served under a net billing energy rate through one meter in accordance with s. PSC 113.73.

(2) Reactive metering shall not be employed for determining average power factor where energy may flow in either direction or where customer may generate an appreciable amount of his requirements at any time unless suitable directional relays and ratchets are installed to obtain correct registration under all conditions of operation and unless the general plan of installation is approved by the commission.

History: 1-2-56; am. (1), Register, September, 1982, No. 321, eff. 10-1-82.

PSC 113.34 Type of instruments. All electric service of the same type rendered under the same rate schedule shall be metered with instruments having like characteristics, except that the commission may approve the use of instruments of different types if their use does not result in unreasonable discrimination. Either all of the reactive meters which may run backwards or none of the reactive meters used for measuring reactive power under one schedule shall be ratcheted.

PSC 113.35 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 watt-hour constant for the meter itself shall be placed on *each* watt-hour meter.

History: 1-2-56; am. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.36 Meter compensation. (1) Metering equipment shall not be set "fast" or "slow" to compensate for supply transformer or line losses.

Register, December, 1987, No. 384

(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 or lines are changed.

Note: See s. PSC 113.61 which covers test requirements for transformer loss compensators.

History: 1-2-56; renum. to be (1) and cr. (2), Register, October, 1965, No. 118, eff. 11-1-65; am. (2), Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.37 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 load shall be sealed.

Note: See s. PSC 113.07 — Tamper-resistant equipment.

(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: 1-2-56; am. (1), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.38 Installation of metering equipment. (1) The customer or his agent should confer with the utility as one of the first steps in planning an electrical installation. The watt-hour 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 2½ 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 meter cover). When a number of meters are placed on the same meter panel the distance between centers should be not less than 8½ inches vertically or 7½ 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: 1-2-56; am. (1) (c), Register, October, 1965, No. 118, eff. 11-1-65; r. and recr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.39 Rental charge for metering equipment. The utility may charge a rental for equipment installed to furnish additional metering information to a customer for his use or because of governmental requirements.

PART VII

Accuracy of Meters and Auxiliary Devices

PSC 113.40 Accuracy of watt-hour meters. (1) Watt-hour 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 they are designed for use on alternating current circuits, be accurate to within plus or minus 1.0% at 2 unity power factor loads, one equal to approximately 10% and the other approximately 100% (plus or minus 10%) of the reference test current; and shall register correctly within 2.0% plus or minus at a power factor of approximately 50% lagging and at a load between 75% and 100% of the reference test current of the meter. 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 113.73 (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.

(4) Prepayment meters shall be maintained at the same accuracy and read at the same periods as regular meters.

History: 1-2-56; am. (1) (a), (b), (c), (d) and (2), Register, October 1965, No. 118, eff. 11-1-65; am. (1)(c) and (3), r. (1)(d), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.41 Accuracy of demand meters. (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: 1-2-56; cr. (2) and (3), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.42 Requirements as to 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 on which used.

(b) Under usual operating conditions be 0.3% accuracy-class units and otherwise have characteristics such that the combined inaccuracies of all transformers supplying one or more meters in a given installation will not exceed the following:

100% Power Factor		50% Power Factor
10%	100%	100%
Current	Current	Current
0.6%	0.3%	1%

(2) (a) Meters used in conjunction with instrument transformers shall be adjusted so that the overall accuracies will come within the limits specified in ss. PSC 113.40 and 113.41.

(b) Instrument transformers shall be tested with the meter with which they are associated by making an overall test, or may be checked separately. If the transformers are tested separately, the meters shall also be checked to see that the overall accuracy of the installation is within the prescribed accuracy requirements.

(c) The results of tests of instrument transformers shall be kept on record and available for use when transformers are installed. For other than 0.3% accuracy class instrument transformers, the results of the most recent test for each instrument transformer shall be entered on or attached to the test card form for each test of the associated meter prior to the test of that meter.

(3) Phase shifting transformers shall have secondary voltages under balanced line-voltage conditions within 1% plus or minus of the voltage impressed on the primary.

History: 1-2-56; r. and recr. (1) (b) and am. (2)(c), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.43 Portable indicating instruments. All portable indicating electrical instruments used for determining quality of service to customers or for billing purposes, such as voltmeters, ammeters, and watt meters, shall be checked against suitable secondary reference standards at least once in each 6 months. If the portable indicating instrument is found appreciably in error at zero or in error by more than 1% of indication at commonly used scale deflections, it shall be adjusted. A history and calibration record shall be kept for each such instrument.

PSC 113.435 Determination of average meter error. Whenever a metering installation is found upon any test to be in error by more than 2% at any test load, the average error shall be determined in one of the following ways:

(1) If the metering installation is used to measure a load which has practically constant characteristics, such as a street-lighting load, the meter shall be tested under similar conditions of load and the accuracy of the meter "as found" shall be considered as the average accuracy.

(2) If a single-phase metering installation is used on a varying load, the average error shall be the weighted algebraic average of the error at light

load and the error at heavy load, the latter being given a weighting of 4 times the former.

(3) If a polyphase metering installation is used on a varying load, the average error shall be the weighted algebraic average of its error at light load given a weighting of 1, its error at heavy load and 100% power factor given a weighting of 4, and at heavy load and 50% lagging power factor given a weighting of 2.

(4) If a load, other than the light, heavy, and low power-factor load specified for routine testing, is more representative of the customary use of the metering equipment, its error at that load should also be determined. In this case the average error is to be computed by giving the error at such load and power factor a weighting of 3 and each of the errors at the other loads (light, heavy, and 50% lagging power factor) a weighting of 1. Each error shall be assigned its proper sign.

History: 1-2-56; renum. from 113.48 and am. (2), Register, February, 1978, No. 266, eff. 3-1-78.

PART VIII

Testing Equipment, Standards and Test Methods

PSC 113.44 Testing equipment. (1) Each utility shall maintain sufficient laboratories, meter testing shops, secondary standards, instruments, and facilities to determine the accuracy of all types of meters and measuring devices used by the utility. A utility may, however, have all or part of the required tests made or its portable testing equipment checked by the commission's electric standards laboratory at the university of Wisconsin or with the approval of the commission by another utility or agency having adequate and sufficient testing equipment to comply with these rules.

(2) Each utility shall have the following minimum testing equipment available:

(a) One or more portable standard watthour meters of capacity and voltage range adequate to test all watthour meters used by the utility.

(b) Portable indicating instruments of such various types as are required to determine the accuracy of all instruments used by the utility.

(c) One or more secondary standards to check each of the various types of portable standard watthour meters used for testing watthour meters. Each secondary standard shall consist of either an approved portable standard watthour meter kept permanently at one point and not used for field work, or not less than three approved watthour meters connected with current coils in series and voltage coils in parallel and kept running by connecting a 10-watt load. These meters must be well compensated for both classes of temperature errors, practically free from errors due to ordinary voltage variations, and free from erratic registration due to any cause.

(d) Suitable standards which are not used for field work to check portable instruments used in testing.

(3) Any utility having more than 10,000 customers, or any other utility upon approval of the commission, may provide and use primary stan-

dards consisting of precision instruments, timing devices, potentiometers, standard cells, etc.

History: 1-2-56; am. (2)(a) and (c), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.45 Accuracy and calibration of test standards. (1) (a) Utilities maintaining primary standards such as precision wattmeters, volt boxes, resistances, standard cells, and timing devices shall have such standards certified at the time of purchase as to accuracy by a recognized laboratory other than that of the manufacturer of the standard.

(b) Utilities having standard cells shall intercompare them regularly and shall have at least one of them checked by a standardizing laboratory at intervals of not more than 2 years. Reference standards of resistance, potentiometers, and volt boxes shall be checked at intervals of not more than 3 years.

(2) (a) Secondary watt-hour-meter standards shall not be in error by more than plus or minus 0.3% at loads and voltages at which they are to be used, and shall not be used to check or calibrate working standards unless the secondary standard has been checked and adjusted, if necessary, to such accuracy within the preceding 12 months. Each secondary standard watt-hour meter shall have a calibration curve available and a history card.

(b) Any 2 or more of at least 3 watt-hour meters may be used as a secondary standard to check portable rotating standards provided there is no discrepancy in accuracy between any 2 of the watt-hour meters used of more than 0.2% at standard test loads. Calibration and history records shall be maintained for each of the meters used as secondary standards.

(3) Secondary standards indicating instruments shall not be in error by more than plus or minus 0.5% of indication at commonly used scale deflection and shall not be used to check or calibrate portable indicating instruments unless the secondary standard has been checked, and adjusted, if necessary, within the preceding 12 months. A calibration record shall be maintained for each standard.

(4) (a) All working portable standard watt-hour meters when regularly used shall be compared with a secondary standard at least monthly, and if infrequently used shall be compared with a secondary standard before they are used.

(b) Working portable standard watt-hour meters shall be calibrated annually (see s. PSC 113.46 (1) and (2)) and shall be adjusted, if necessary, so that their accuracy will be within 99.7% and 100.3% at 100% power factor and within 99.5% and 100.5% at 50% lagging power factor at all voltages and loads at which the standard may be used. A history and calibration record shall be kept for each working portable standard watt-hour meter.

(5) The meter accuracies herein required as to all primary, secondary, and portable standards and service measuring equipment shall be referred to 100%.

History: 1-2-56; am. (4) (b) and (5), Register, October, 1965, No. 118, eff. 11-1-65; am. (4), Register, February, 1978, No. 266, eff. 3-1-78; am. (4) (a), Register, December, 1987, No. 384, eff. 1-1-88.

Register, December, 1987, No. 384

PSC 113.46 Check of standards by commission. (1) Each utility shall submit to the electrical standards laboratory at the university of Wisconsin once each year, one of each type of portable standard watt-hour meter (60 hertz or 25 hertz) and once each 2 years one of each type of portable indicating voltmeter, ammeter, wattmeter, and other test instruments.

(2) Each utility which normally checks its own working portable standard watt-hour meters or instruments against primary or secondary standards shall calibrate these standards or instruments before they are submitted and attach to them a record of such calibration. In lieu of such calibrations the commission may require an alternative procedure for intercomparing the primary or secondary standards of the utility with standards maintained by the electrical standards laboratory at the university of Wisconsin.

History: r. 113.46, 113.465 and 113.49 and rec. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.471 Methods of testing watt-hour meters. (1) In all tests of watt-hour meters where comparison of revolutions is made, at least 2 revolutions of the meter under test shall be taken at light load and at least 9 revolutions at heavy load. At least 2 checks shall be made at each load. The accuracy of the meter under test at each load shall be the average accuracy determined from 2 checks taken at the same load which must agree within 0.2 of 1% unless the meter is erratic. However, if a mechanical testing device is used, the test procedure may be modified provided equal accuracy of method is maintained.

(2) If the watt-hour meter has a contact device which operates a demand mechanism, the disk revolutions when testing should be multiples of the number of revolutions per contact in order to take account of the varying friction which may be present during the movement of the contact cam from one contact to the next.

(3) Polyphase meters shall be tested by one of the following 4 methods:

(a) Single-phase test with the potential circuits connected in parallel and all current circuits connected in series. Three-stator, 4-wire delta meters must have correct values of current and potential applied to the differently rated circuits. The normal test loads apply. (See s. PSC 113.40 (1) (c).)

(b) Individual stator test with the potential circuits connected in parallel and each current circuit tested separately. (For 2-stator, 4-wire delta meters, the current circuits of the 3-wire stator should be connected in series and treated as a single circuit. Three-stator, 4-wire delta meters must have correct values of potential applied to the differently rated circuits.) The light load test current shall be one-tenth N times the reference test current and the heavy load test current shall be between one-half and one N times the reference test current but not more than twice the test ampere rating of the meter. (N equals the number of stators in the meter except for 2-stator, 3-phase, 4-wire wye meters. For the latter, N shall be 4 for the current circuits which are not common to both stators and N shall be 2 for the current circuit common to both stators.)

(c) Individual stator test with the potential circuits connected to the polyphase circuit in the same manner as in service. (For 2-stator, 4-wire delta meters the current circuits of the 3-wire stator shall be connected in

series and treated as a single circuit.) The light load test current shall be one-tenth N times the reference test current and the heavy load test current shall be between one-half and one N times the reference test current but not more than twice the test ampere rating of the meter. (N equals the number of stators in the meter except for 2-stator, 3-phase, 4-wire meters. For the latter N shall be 3 for each current circuit.)

(d) Polyphase test with the meter connected to a polyphase circuit in the same manner as in service, with balanced polyphase currents on the current circuits. This requires the use of a polyphase standard watt-hour meter or as many single-phase standards as there are current circuits under test.

(4) Instrument transformers shall be tested with a burden equivalent to that with which they are to be used or with burdens from which curves showing the accuracy of the transformer can be derived. Any approved method may be used for testing instrument transformers.

History: 1-2-56; r. and recr. (3), Register, October, 1965, No. 118, eff. 11-1-65; renum. from 113.47 and am. (3)(a), Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.472 Methods of testing block-interval demand registers. (1) For meters with block-interval demand registers, demand interval timing check shall be performed and a determination made that the pointer pusher or test dial pointer has reset to zero at the end of the billing period demand interval.

(2) Demand registers used with instrument transformer rated watt-hour meters shall be tested with the demand register mounted in a normal operating position on the watt-hour meter. The demand registered on the demand meter during the test shall be at least 30% of full scale with the demand test interval varying from a fraction of an interval up to a full interval.

(3) Demand registers used with self contained watt-hour meters shall be tested with the demand register mounted in a normal operating position on the watt-hour meter. The demand registered on the demand meter during the test shall be equivalent to the test ampere rating of the watt-hour meter with the demand test interval varying from a fraction of an interval up to a full interval.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; r. and recr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.473 Methods of testing block-interval pulse-operated demand meters and pulse recorders. (1) The test of block-interval pulse-operated demand meters and pulse recorders shall include a check of the electrical and mechanical operation of the demand register or pulse recorder, an inspection of the pulse initiator and a check to determine that the demand meter resets properly.

(2) A demand meter or pulse recorder, its associated pulse initiators, relay and circuitry may be considered to be operating properly when a kilowatt-hour check indicates that the demand meter kilowatt-hours are within the required accuracy limits of the watt-hour meter kilowatt-hours.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

Register, December, 1987, No. 384

PART IX

Testing of Metering Equipment

PSC 113.50 Testing of metering installations-general requirements. (1) The test of any unit of metering equipment shall consist of a comparison of its accuracy with a standard of known accuracy by a qualified person. Units not properly connected or not meeting the accuracy or other requirements of PSC 113.40, 113.41, and 113.42 at the time of test shall be reconnected and/or rebuilt to meet such requirements and adjusted to within the required accuracy and as close to 100% accurate as practicable or their use discontinued.

(2) Each unit of metering equipment shall be inspected for mechanical and electrical faults whenever the accuracy of the device is checked.

(3) Each meter tested shall have the register and the internal connections checked before the meter is first placed in service and whenever the meter is repaired.

(4) Each meter shall have the connections to the customer's circuits, the disc rotation and any multiplier checked when the meter is installed or removed or an instrument transformer is changed.

(5) Single phase meters shall be verified for accuracy at 50% power factor before first being used for measuring customer's service either by a test of each meter or by a sample test plan approved under s. PSC 113.51 (1) (a) and each polyphase meter shall be tested at 50% power factor whenever tested.

(6) The connections, phase sequence and multiplier of polyphase transformer-rated metering installations shall be checked for error by qualified personnel within 60 days after the meter is installed.

(7) Special control devices, switches, etc., for time-of-use service shall be checked for proper operation whenever the associated meter is tested.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.51 Testing of self-contained single-phase meters and 3-wire network meters. (1) Self-contained single-phase meters and 3-wire network meters, together with associated equipment such as demand devices, control devices, etc., shall be tested for accuracy at unity power factor at the point where they are installed or at a central testing point or in a mobile testing laboratory under any of the following circumstances:

(a) Before being placed in service. For new meters given a prior test by the manufacturer, a sample test program meeting the requirements of s. PSC 113.517 may be substituted for this requirement.

(b) When they are suspected of being inaccurate or damaged.

(c) When the accuracy is questioned by a customer. See PSC 113.57.

(d) When they are removed from service.

(e) Within a period of 6 months before to 6 months after 8 years of service for non-surge-proof and non-extended-range meters and 16 years for extended-range surge-proof and magnetic-bearing surge-proof meters

or in accordance with the plan outlined in s. PSC 113.515 or 113.518. Exception: Lagged-demand meters shall be tested every 8 years.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.515 Variable interval testing plan for self-contained meters. (1) The variable interval plan described below may be used for testing self-contained, single-phase and 3-wire network meters without demand registers or pulsing devices instead of the periodic test periods in s. PSC 113.51, if the utility is authorized to do so by the commission:

(a) The meters shall be divided into homogeneous groups as approved by the commission, such as by manufacturers' types, and may be further subdivided in accordance with location or other factors which may be disclosed by test records to have an effect on the percentage registration of the meter.

(b) The meter test accuracy information for the determination of the number of fast (F) and slow (S) meters to be used in the formula for each of the groups shall be based on the results of scheduled meter tests made during the preceding 12-month period. The meter accuracy shall be the weighted average of the full and light load tests with the full load test being given a weighting of 4 and the light load test a weighting of 1.

(c) Each group of meters is to be considered separately in determining the number of meters to be tested in any period. The percentage, P, of meters in each group to be tested annually shall be based on the number of registering meters which were found during the previous year's in-service tests to have a weighted average percentage registration of more than 102% or less than 98%.

1. The maximum value of P shall be 10%.
2. The minimum value of P shall be not less than:
 - a. 4% for a group of 4,000 or more meters.
 - b. 10% for a group of fewer than 4,000 meters.
3. The values of P between the maximum and minimum shall be determined from the formula:

$$P = 6.25 \left[\left[\frac{100 (F + S)}{T} \right] - 1 \right]$$

Where T = total number of meters tested in the group during the preceding year.

F = number of meters in this group which registered more than 102%.

S = number of meters in this group which registered less than 98%

(d) For annual group meter testing requirements, P shall consist of the following:

1. One-half of the meters shall consist of those longest in service proportionately distributed between the various meter types.

2. The remaining meters shall be selected from the various meter types based on the need to maintain accuracy performance and meter reliability for the various types within the group.

(e) Only scheduled periodic and scheduled retirement tests are to be considered when applying the formula.

(f) The value of P may be reduced to 2% in any group under the following conditions:

1. The number of meters operating fast or slow are equal to or less than 1.5% of the total meters tested during the preceding year for each group.

2. The mean testing interval for the meters to be tested is equal to or less than 20 years.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; r. and recr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.517 Statistical sample testing plan for new self-contained single phase and 3-wire network meters. The new meter sample testing plan described in subs. (1)-(5) may be used for testing new self-contained, single phase and 3-wire network meters without demand registers, electronic registers or pulsing devices instead of the new meter test requirements of s. PSC 113.51 (1) (a), if the commission authorizes the adoption of the plan by a utility.

(1) Meters, as received from the manufacturer, shall be divided into homogeneous lots by manufacturers and type. The maximum number of meters in any lot may not exceed 1,000 or be less than 96. From each such lot assembled, there shall be drawn a coded sample size specified in Military Standard 414, (MIL-STD-414) dated 11 June 1957, as shown for the various group sizes using Inspection Level IV of Table A-2 on page 4 and a corresponding actual sample size as shown in Table B-3 on page 45. The sample shall be drawn by a random method that ensures that each meter in the lot has an equal chance of being selected.

(2) The test criterion for acceptance or rejection of each lot shall be based on a separate analysis conducted at both the full load and light load test points at unity power factor, as specified in s. PSC 113.40 (1)(c), by means of the Standard Deviation Method, Double Specification Limit and with an Acceptable Quality Level (AQL) of 0.25 for the full load accuracy analysis and an AQL of 0.40 for the light load accuracy analysis as shown in Table B-3, MIL-STD-414, page 45. The statistical analysis calculations shall be made following the example outlined on page 43 of MIL-STD-414 with the upper and lower specification limits U and L designated at 101% and 99% respectively.

(3) One non-registering meter may be removed from the sample lot for analysis purposes and replaced with another randomly selected meter. If more than one meter in a sample lot is found not to be registering, the entire lot shall be rejected.

(4) A lot shall be deemed acceptable for installation if the total estimated percent defective (P) is less than the appropriate maximum allowable percent defective (M) as determined from Table B-3 under the procedures of sub. (2). All meters in an acceptable lot shall be deemed to

have met the accuracy requirements of s. PSC 113.40 for Placement in service without further testing.

(5) A lot shall be considered rejected (not acceptable for installation) if the total estimated percent defective (P) exceeds the appropriate maximum allowable percent defective (M) as determined from Table B-3 under the procedures of sub. (2). All meters in a rejected lot shall be tested and adjusted in accordance with the procedures of s. PSC 113.40 or replaced with meters meeting these requirements.

History: Cr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.518 Statistical sample testing plan for in-service, self-contained, single phase and 3-wire network meters. (1) The statistical sample testing plan described in pars. (a)-(e) may be used for testing self-contained, single phase and 3-wire network meters without demand or electronic registers or pulsing devices in place of the periodic testing requirements of s. PSC 114.51, if the commission authorizes the adoption of the plan by a utility.

(a) All extended range, surge proof designed meters shall be divided into homogeneous groups based on meter design features and age. The groups shall be further divided into lot sizes categorized by manufacturer, type, serial number, group size or load duty cycle with lot sizes containing a minimum of 301 meters and a maximum of 22,000 meters. The number of lots or lot composition and size may be changed at the end of the sample testing year to allow for increasing or decreasing analysis of accuracy testing requirements on any segment of meters in any lot.

(b) Annually, from each of the assembled lots, a coded sample size specified in Table A-2, Inspection Level IV, page 4 of Military Standard 414, (MIL-STD-414) dated 11 June 1957 and a corresponding actual sample size as shown on Table B-3, page 45, (MIL-STD-414), shall be randomly selected for testing and analysis purposes. Each meter in the lot sample shall be provided with a full load and light load test for accuracy at unity power factor, as specified under s. PSC 113.40 (1)(c). A separate statistical analysis shall be performed on each lot sample at each of these 2 load ranges.

(c) The statistical analysis calculations for both the full and light load accuracy results from the sample lot tests shall be made following the example outlined on page 43 of MIL-STD-414 with the upper and lower specification limits, U and L designated at 102% and 98% respectively. The test criterion for acceptance or rejection of each lot shall be by the Standard Deviation Method, Double Specification Limit with an Acceptable Quality Level (AQL) of 1.00 for the full load analysis and 4.00 for the light load analysis (both normal inspection) as shown on Table B-3, page 45 of MIL-STD-414.

(d) A lot shall be deemed acceptable for continued use if the total estimated percent defective (P) is less than the appropriate maximum allowable percent defective (M) as determined from Table B-3, page 45 of MIL-STD-414, following the procedure of par. (c) for both the full load and light load analysis test points at the respective designated Acceptable Quality Levels. All of the meters in the accepted lot may be retained in use without further accuracy adjustments and will be concluded to have the accuracy characteristics specified in s. PSC 113.40 (1) (c). Me-

ters in the sample lot may be adjusted for acceptable accuracy as required or maintained as necessary and returned to the lot.

(e) A lot shall be deemed unacceptable and rejected for continued use if the total estimated percent defective (P) is greater than the appropriate maximum allowable percent defective (M) as determined from Table B-3, page 45 MIL-STD-414, following the procedure of par. (c) for both the full load and light load analysis test points at the respective designated Acceptable Quality Levels on any 2 annual sample testing analysis years for the lot or any meters in the lot. All meters in a rejected lot shall be provided with an appropriate test within a period of 48 months from the date of completion of the sample analysis and all the meters tested in the rejected lot shall be adjusted to the accuracies specified in s. PSC 113.40 (1) (c). Annual statistical sample testing shall be terminated during the period when all of the meters in a rejected lot are being provided with a test and accuracy adjustment.

(f) All meters in any lot may be tested and adjusted for proper accuracy over a 48 month period at the discretion of the utility without a sample analysis determination specifying the lot test is necessary.

History: Cr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.52 Testing of self-contained polyphase meters. (1) Self-contained polyphase meters together with associated equipment such as demand equipment, control devices, etc., shall be tested on the customer's premises, except (a) and (d), for accuracy at unity and 50% power factor. Exception: Lagged-demand meters and socket-type self-contained polyphase meters may be tested at a central testing point or in a mobile testing laboratory.

- (a) Before being placed in service.
- (b) When they are suspected of being inaccurate or damaged.
- (c) When the accuracy is questioned by a customer. (See PSC 113.57)
- (d) Within 60 days after they are removed from service.

(e) Within a period of 6 months before or 6 months after 8 years of service for non-surge-proof and 12 years for surge-proof meters. Exception: Thermal and mechanical lagged-demand meters shall be tested every 8 years.

(2) A stator balance test shall be performed on all new meters before being placed in service.

(3) Meters with electronic programmable registers may be shop tested on a periodic basis.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.53 Testing of meters used with instrument transformers on single-phase service. (1) Meters used with instrument transformers on single-phase service, together with associated equipment such as demand equipment, control devices, etc., shall be tested on the customer's premises, except (a) and (d), for accuracy at unity power factor. Exception: Lagged-demand meters may be tested at a central testing point or in a mobile testing laboratory.

- (a) Before being placed in service.
 - (b) When they are suspected of being inaccurate or damaged.
 - (c) When the accuracy is questioned by a customer. (See PSC 113.57.)
 - (d) When they are removed from service.
 - (e) Within a period of 6 months before or 6 months after 8 years of service for non-surge-proof and 12 years for surge-proof meters. Exception: Lagged-demand meters shall be tested every 8 years.
- (2) Meters equipped with electronic programmable registers may be shop tested on a periodic basis.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.54 Testing of polyphase meters used with instrument transformers. (1) Polyphase meters used with instrument transformers, together with associated equipment such as demand equipment, pulsing devices, phase-shifting transformers, control devices, etc., shall be tested on the customer's premises, except for (a) and (d), for accuracy at unity and 50% power factor. Exception: Lagged-demand meters may be tested at a central testing point or in a mobile testing laboratory.

- (a) Before being placed in service.
 - (b) When they are suspected of being inaccurate or damaged.
 - (c) When the accuracy is questioned by a customer. (See PSC 113.57.)
 - (d) When they are removed from service.
 - (e) Within a period of 4 months before or 4 months after 4 years of service for both non-surge-proof and surge-proof meters.
- (2) A stator balance test shall be performed on all new meters before being placed in service.

(3) Meters with electronic programmable registers may be shop tested on a periodic basis.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.55 Testing of metering installations utilizing pulse devices. (1) Metering installations utilizing pulse initiators and pulse recorders shall be checked for accuracy each billing period by comparing the recorded pulse count against the registration of the corresponding meter. When the results are not in agreement within the accuracy limits of s. PSC 113.41(2) the pulse devices shall be promptly tested and adjusted to required accuracy or replaced.

(2) Pulse devices shall be tested before use and as part of the complete metering installation whenever the associated watt-hour meter is tested.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.555 Testing of time controlled multi-register metering installations used for time-of-use rates. (1) Time-of-use metering installations together with all associated equipment shall be tested at the place of installation, a central testing facility or a mobile testing laboratory on the Register, December, 1987, No. 384

schedules specified under ss. PSC 113.51, 113.52, 113.53 and 113.54 based on the type of meter.

(2) At least once each year, monthly kilowatthour billing comparisons shall be made between the mechanical and electronic register to verify the functional accuracy of the pulse initiators and register memory circuits.

(3) Total electronic meters containing no electric to mechanical energy conversion mechanism shall be tested at the load points and have the operating accuracies specified in PSC 113.40 (1) (c). The period of the test, in seconds, for each of the required test load points shall correspond to the energy consumed in watthours in a conventional meter at the specified test load point revolutions of s. PSC 113.471 (1).

(4) Meters equipped with electronic demand registers shall be tested at rated test amperes.

(5) For electronic logic program operation:

(a) Necessary checks shall be made to determine that the correct program is in the meter, that the correct register is active as determined from the program, and that the meter is displaying the correct time and date.

(b) Battery carry-over for calendar clock operation shall be verified by de-energizing the meter.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; r. and recr. Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.56 Testing of instrument transformers. (1) No instrument transformer shall be placed in service, or allowed to remain in service, if it shows evidence of physical damage, discolored terminals due to overload, change in texture or resiliency of insulation, or arc tracking on the insulation or bushings.

(2) Instrument transformers of all utilities shall be tested for voltage withstand by the manufacturer, the utility, or a laboratory approved for such test by the commission before being placed in service. Each instrument transformer that has been removed from service shall be tested for voltage withstand prior to reinstallation if the reason for removal or physical appearance, gives cause to doubt its reliability. The utility shall maintain a record of all such tests.

(3) Instrument transformers of class A privately-owned utilities shall be tested at the utility meter shop for accuracy (ratio correction factor and phase angle):

(a) Before being initially placed in service.

(b) When removed from service.

(c) When there is evidence from outward appearance or performance to suspect inaccuracy.

(d) Exception: The manufacturer's calibration results may be acceptable on all new voltage transformers rated above 15,000 volts. Removal tests of these transformers may also be omitted except in those cases where there is reason to suspect that a transformer malfunction has occurred.

(4) Instrument transformers of other than class A privately-owned utilities shall be tested at the utility's meter shop, the manufacturer's laboratory or a laboratory approved by the commission for accuracy (ratio correction factor and phase angle):

- (a) Before being initially placed in service.
- (b) When there is evidence from outward appearance or performance to suspect inaccuracy.

(5) Instrument transformers in service shall be given an approved check (such as the variable burden method in the case of current transformers or a field check of the secondary voltage with a good quality voltmeter in the case of voltage transformers) made in conjunction with each field test of the associated watt-hour meter. When such check provides evidence that the instrument transformer may be inaccurate, that instrument transformer shall be tested for accuracy.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. (2), (3) (intro.) and (4), Register, December, 1987, No. 384, eff. 1-1-88.

PSC 113.57 Customer request test. Each utility shall promptly make a test of any metering installation upon request of the customer if 12 months or more have elapsed since the last request test of the meter in the same location. The test shall consist of a test for accuracy and a check of the register and meter connections on the customer's premises. At the customer's request and expense the installation shall be checked for accidental grounds. The customer shall be furnished a report of the result of the test. (See PSC 113.17 for adjustment of bills for inaccurate meters.)

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.575 Commission referee test. Upon application and payment of the following fee to the commission by any customer, the commission will make a test covering the accuracy of the installation, check of connections, and any other check or test which appears desirable. The utility shall reimburse the customer for the fee if the watt-hour or var-hour meter creeps or if the error in registration is more than 2% fast on the basis of average error as defined in s. PSC 113.435, if the demand meter tested is more than 1.5% fast in excess of the tolerance allowed in s. PSC 113.41, or if improper connections or auxiliary equipment results in over-registration greater than stated above. The fees for making such tests shall be as follows:

Single-phase watt-hour meter*	\$ 5
Polyphase watt-hour meter	\$25

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78; am. Register, December, 1987, No. 384, eff. 1-1-88.

PART X

Auxiliary Metering Devices

PSC 113.60 Phase-shifting transformers. (1) For phase-shifting transformers in service, all terminal connections shall be in such condition as to provide good electrical contact and the terminal designations shall be clearly visible. Where there is evidence of physical damage or evidence of thermal overload the unit shall be replaced.

Register, December, 1987, No. 384

(2) Phase-shifting transformers shall be tested on the same schedule and at the same time as the meters with which they are associated. The test shall consist of a single-phase test to be performed as follows: With the approximate rated voltage applied to the input terminals and no burdens connected to the tap terminals all tap voltages, converted to

Next page is numbered 125



percentage of input voltage, shall agree within plus or minus 2.0% of the theoretical values given in the manufacturer's published data.

(3) In addition, all units shall be tested before use and when returned to the utility's meter laboratory. For these tests the output-voltage values in terms of percentage of input voltage and under the conditions of (2) immediately above shall agree within plus or minus 1.0%.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PSC 113.61 Transformer-loss compensators. (1) For transformer-loss compensators in service all terminal connections shall be in such condition as to provide good electrical contact and the terminal designations shall be clearly visible. Where there is evidence of physical damage to the component parts, their adjustments, or to the internal wiring or evidence of thermal overload on the insulation, resistors, terminals, etc., the affected parts shall be replaced or the entire transformer-loss compensator replaced.

(2) Transformer-loss compensators shall be tested on the same schedule and at the same time as the meters with which they are associated.

(3) The tests shall be made at the normal service test points of the meter. Performance deviations from desired performance shall not exceed plus or minus 0.3%.

History: Cr. Register, February, 1978, No. 266, eff. 3-1-78.

PART XI

RULES FOR INTERCONNECTION OF SMALL CUSTOMER-OWNED GENERATION WITH UTILITY SYSTEM FACILITIES

PSC 113.70 Requirements for utility rules for interconnection of small customer-owned generation facilities with the utility system. Each utility shall file with the commission services rules to ensure that interconnected customer-owned generation facilities are installed in a manner consistent with public and employe safety, adequate service to other customers and to ensure avoidance of communication interference problems. Requirements for the service rules follow:

(1) Interconnection of a generating facility with the utility system shall not be permitted until application has been made to and approval received from the electric utility. The utility may withhold approval only for good reason such as failure to comply with applicable utility or governmental rules or laws. The utility shall require a contract specifying reasonable technical connection and operating aspects for the parallel generating facility.

(2) The utility may require that for each generating facility there be provided between the generator or generators and the utility system a lockable load-break disconnect switch. For installations interconnected at greater than 600 volts a fused cutout switch may be substituted, where practicable. The switches shall be accessible to the utility for the purpose of isolating the parallel generating facility from the utility system when necessary.

(3) The utility shall require a separate distribution transformer for a customer having a generating facility where necessary, for reasons of

public or employe safety or where the potential exists for the generating facility causing problems with the service of other customers. Ordinarily this requirement should not be necessary for an induction-type generator with a capacity of 5 kW or less, or other generating units of 10 kW or less that utilize line-commutated inverters.

(4) Where necessary, to avoid the potential for a facility causing problems with the service of other customers, the utility should limit the capacity and operating characteristics of single-phase generators in a manner consistent with its existing limitations for single-phase motors. Ordinarily single-phase generators should be limited to a capacity of 10 kW or less.

(5) The utility shall require that each generating facility have a system for automatically isolating the generator from the utility's system upon loss of the utility supply, unless the utility desires that the local generation be continued to supply isolated load. For synchronous and induction generators such protection against continued operation when isolated from the utility system will ordinarily consist of overcurrent protection, fuse or circuit breaker, plus a voltage or frequency controlled contactor which would automatically disconnect the unit whenever its output voltage or frequency drifted outside predetermined limits, such as plus or minus 10% of the rated values. Other suitable protective systems against abnormal voltages or frequencies may be accepted by the utility.

(6) The utility shall require that the customer discontinue parallel generation operation when it so requests and the utility may isolate the generating installation from its system at times:

1. When considered necessary to facilitate maintenance or repair of utility facilities.
2. When considered necessary during system emergencies.
3. When considered necessary during such times as the generating facility is operating in a hazardous manner, or is operating such that it adversely affects service to other customers or to nearby communication systems or circuits.

(7) The owner of the generating facility shall be required to make the equipment available and permit entry upon the property by electric and communication utility personnel at reasonable times for the purposes of testing isolation and protective equipment, and evaluating the quality of power delivered to the utility's system; and testing to determine whether the local generating facility is the source of any electric service or communication systems problems.

(8) The power output of the generating facility shall be maintained such that frequency and voltage are compatible with normal utility service and do not cause that utility service to fall outside the prescribed limits of commission rules and other standard limitations.

(9) The generating facility shall be operated so that variations from acceptable voltage levels and other service impairing disturbances do not result in adverse effects on the service or equipment of other customers, and in a manner which does not produce undesirable levels of harmonics in the utility power supply.

(10) The owner of the generating facility shall be responsible for providing protection for the owner's installed equipment and for adhering to all applicable national, state and local codes. The design and configuration of certain generating equipment such as that utilizing line-commutated inverters sometimes requires an isolation transformer as part of the generating installation for safety and for protection of the generating facilities.

History: Cr. Register, September, 1982, No. 321, eff. 10-1-82.

PSC 113.71 Right to appeal. The owner of a generating facility interconnected or proposed to be interconnected with a utility system may appeal to the commission should any requirement of the utility service rules filed in accordance with the provisions of PSC 113.70 be considered to be excessive or unreasonable. Such appeal will be reviewed and the customer notified of the commission's determination.

History: Cr. Register, September, 1982, No. 321, eff. 10-1-82.

PSC 113.72 Notice to communication firms. Each electric utility shall notify telephone utility and cable television firms in the area when it knows that customer-owned generating facility is to be interconnected with its system. This notification shall be as early as practicable to permit coordinated analysis and testing in advance of interconnection, if considered necessary by the electric or telephone utility or cable television firm.

History: Cr. Register, September, 1982, No. 321, eff. 10-1-82.

PSC 113.73 Metering with one meter for net energy billing. (1) A single watt-hour meter may be used for net energy billing where reverse meter registration is intended to occur during reverse power flow through the meter and where the service is rendered under an authorized net-energy billing tariff.

(2) When the meter is operating in the reverse registration mode it shall be accurate within plus or minus 2.0% at 2 unity power factor loads, one equal to 10% and the other 100% of the test ampere rating of the meter. A test to determine compliance with this accuracy requirement shall be made by the utility either before or at the time the customer-owned generator is placed in operation in accordance with utility rules. Subsequent tests for accuracy in the reverse registration mode are required only when requested by the customer and shall be at customer cost.

(3) Each utility shall maintain a record of the reverse-registration tests required in sub. (2) but for such tests the utility is not required to comply with ss. PSC 113.23, 113.50, 113.51, and 113.515 with respect to meter testing or meter records.

History: Cr. Register, September, 1982, No. 321, eff. 10-1-82.

PART XII

STANDARDS FOR ELECTRIC SERVICE EXTENSIONS

GENERAL

PSC 113.80 Purpose. The purpose of part XII of this chapter is to establish standards for electric utility service extension rules. These standards shall not apply to the inter-connection of customer-owned generation facilities. The primary objective of these standards shall be to

provide for an equitable cost relationship between new customers and existing customers. The determination of an equitable relationship shall consider the effect of the extension rule on the environment, the utility's revenue requirement, and the efficient use of electricity.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.81 Principles of facilities development. The utility shall provide safe, reliable service with extensions that conform, to the extent possible, to each of the following standards:

(1) **ROUTE.** The utility shall make the extension over the most direct route which is the least expensive and least environmentally degrading. The customer shall provide or shall be responsible for the cost of all right-of-way easements, and permits necessary for the utility to install, maintain, or replace distribution facilities. The customer shall either clear and grade such property or pay the utility to clear and grade such property. The customer is responsible for the cost of restoration of the property after the utility has completed installation and backfilling where applicable.

(2) **DESIGN.** The utility shall design and install facilities to deliver service to the customer and the area at the lowest reasonable cost. The facilities shall comply with accepted engineering and planning practices. The design shall consider reasonable needs for probable growth in the area and local land use planning. Unwarranted excess capacity which would result in unnecessary cost increases to the utility and its customers shall be avoided. The utility shall be responsible for the incremental cost of distribution facilities which are in excess of standard design for the customer and normal area growth.

(3) **EFFICIENT USE.** The utility's extension rules shall discourage the inefficient use of electricity by appropriately relating costs to the charges made for extensions.

(4) **COST ESTIMATES.** The utility shall engineer and estimate the cost of each extension based on reasonable current costs. Current costs may be estimated using job specific costs, average costs per foot or unit, or other costing method as appropriate.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

CONSTRUCTION OF FACILITIES

PSC 113.90 Definitions. In ss. 113.91 to 113.97:

(1) "Contributed extension" means an extension toward which a customer has made a contribution in aid of construction.

(2) "Distribution facilities" includes all primary and secondary voltage wire or cable and its supports, trenches, connection equipment, and enclosures, and control equipment which are used to extend the distribution system from existing facilities to a point of connection with the service facilities. The cost of right-of-way preparation and restoration to the original condition where appropriate shall be included in the cost of distribution facilities.

(3) "Embedded cost" means the original cost of the installed utility plant less both the accumulated depreciation of the plant and associated contributions in aid of construction as recorded in the utility's books.

Register, December, 1984, No. 348

(4) "Embedded cost allowance" means a construction credit given a customer requesting an extension which reflects the average embedded cost of existing facilities.

(5) "Excess facilities" means an extension costing more than five times the average embedded cost allowance for a given customer classification.

(6) "Extension" means the addition of transmission, distribution, or service facilities to the existing electric service facilities.

(7) "Full cost" of an extension includes the cost of removal of existing facilities if present.

(8) "Noncontributed extension" means an extension which costs less than the embedded cost allowance: the customer requesting the extension makes no contribution in aid of construction.

(9) "Nonstandard route or design" means facilities which meet one or more of the following criteria:

(a) are different from the standard design developed pursuant to s. PSC 113.81 (2).

(b) follow a route different from the route determined in s. PSC 113.81 (1), or

(c) are not in accordance with the general principles of s. PSC 113.81.

(10) "Service drop" means the overhead secondary voltage conductors from the transformer or closest pole or support on the distribution system to the customer's electric service entrance equipment.

(11) "Service facilities" means the transformer, service drop or service lateral and meter.

(12) "Service lateral" means the underground secondary voltage conductors from the transformer or closest underground pedestal on the distribution system to the customer's electric service entrance equipment.

(13) "Transmission facilities" means a line providing electric service at 35 kilovolts or more as defined in s. PSC 112.04 (1) (c) and the associated supports, connection equipment and enclosures and control equipment. Transmission facilities also includes the preparation cost of the right-of-way and restoration of the property to its original condition where appropriate.

(14) "Upgrade" means a modification of existing electric facilities.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.91 Customer contribution for service facilities. (1) **METERING FACILITIES.** The utility shall provide the necessary standard metering facilities at no charge to the customer.

(2) **SERVICE DROPS AND LATERALS.** The utility shall provide standard overhead service drops and standard underground service laterals at no charge to the customer.

(3) **TRANSFORMERS.** The utility shall provide standard design transformers necessary to serve the customer's load at no charge.

(4) **NONSTANDARD SERVICE FACILITIES.** If the facilities design developed pursuant to s. PSC 113.81 require nonstandard service facilities or if the customer requests nonstandard facilities, the utility may require the customer to pay a contribution in advance of construction for the portion of the facilities in excess of the standard design.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.92 Customer contributions for distribution extensions. (1) **STANDARD DESIGNS.** The customer shall pay, as a minimum and refundable contribution, the estimated cost of distribution facilities to be installed which is greater than the appropriate average embedded cost allowance for existing distribution facilities.

(2) **SUBDIVISIONS.** Developers and subdividers shall pay, as a minimum and refundable contribution, the estimated cost of distribution facilities to be installed for the area being developed. The contribution is refundable as structures are built and connected to the electric utility facilities.

(3) **NONSTANDARD ROUTE OR DESIGN.** If a customer requests a route or design which is different from the design proposed by the utility in compliance with the requirements of s. PSC 113.81, the utility shall require that the customer pay any additional costs as a refundable contribution.

(4) **CONSTRUCTION CHARGES.** The utility shall require that the customer make a contribution in aid of construction if construction requires trenching in rocky soil, frozen ground, or other similar condition.

(5) **REQUEST FOR EXCESS FACILITIES.** The utility may require a contract from a customer requesting the installation of excess facilities, as defined in s. PSC 113.90 (5), requiring the customer to pay recurring operation and maintenance expenses on the portion of the extension which is greater than five times the embedded cost allowance. The utility shall provide the commission with the reasons and supporting analysis for each such contract.

(6) **PAYMENT PLANS.** The utility may require that the contribution in aid of construction be paid in advance of construction or may, at the utility's option, offer customers an installment payment plan.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.93 Embedded cost allowances. The average embedded cost of existing facilities shall be determined annually on a customer classification basis as follows:

(1) **ENERGY ONLY CUSTOMERS.** For customer classifications billed on an energy usage only basis, the embedded cost of the distribution facilities allocated to those classifications shall be divided by the number of customers in the classification to specify an average embedded cost allowance per customer. The utility may create subclassifications of the energy-only commercial classification based on customer service entrance capacity or other electrical load criteria to specify average embedded cost allowances.

(2) **DEMAND AND ENERGY CUSTOMERS.** For customer classifications billed on a demand and energy usage basis, the embedded cost for distribution facilities allocated to those classifications shall be divided by the

total billed demand of those customers to specify an average embedded cost allowance per kilowatt of demand.

(3) **STREET LIGHTING.** For street lighting facilities, the embedded cost of distribution facilities allocated to those classifications shall be divided by the number of lighting fixtures to specify an average embedded cost allowance either by type of lighting fixture or by type and size of lighting fixture.

(4) **SEASONAL CUSTOMERS.** Seasonal customers shall receive one-half the average embedded cost allowance of a year-round customer for the same customer classification.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.94 Refunds. (1) **INDIVIDUAL CUSTOMERS.** (a) *Procedure.* The utility shall make refunds to a customer who made a contribution for an extension (a contributed extension) when the utility makes an extension from the contributed extension to a second customer which does not require a contribution from the second customer (a noncontributed extension). The refund shall be equal to the greater of the embedded cost allowance in effect at the time the contributed extension was installed or the current embedded cost allowance. This refund, in either case, shall be reduced by the costs incurred by the utility to design and install the distribution facilities for the second customer. The utility shall not refund more than the total contribution made by any customer. The utility shall make the refund to the customer who made the original contribution or the current property owner of record unless it has a written record from that customer assigning the refund rights to another customer.

(b) *Period.* The utility shall make refunds for the first 5 years after the installation of a contributed extension.

(2) **SUBDIVISIONS.** (a) *Procedure.* As structures are built and connected to the electric utility facilities, the utility shall refund to the developer or subdivider an amount equal to the greater of the embedded cost allowance in effect at the time the contributed extension was installed or the current embedded cost allowance for each customer. This refund shall be reduced by the cost of any additional distribution facilities, if necessary, to serve the new customer.

(b) *Period.* The utility shall make refunds for structures which are built and connected to the utility system within 5 years from the installation of the contributed extension.

(3) **EXTENDED REFUND PERIOD.** A 5-year refund period is required for extensions made after July 1, 1982, if the extension rules in effect at that time provided for a refund and a refund period of less than 5 years.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85; cr. (3), Register, December, 1985, No. 360, eff. 1-1-86.

PSC 113.95 Modifications to existing distribution and service facilities.

(1) **RELOCATION AND REBUILDING OF EXISTING DISTRIBUTION FACILITIES.** Where responsibility can be determined by the utility, the customer responsible for relocation, rebuilding, or other modification of existing distribution facilities shall pay a contribution equal to the full estimated cost of construction including the cost of removal of existing distribution facilities and less the accumulated depreciation and the salvage value of facilities removed. The costs and credits shall be determined from the

available records of the utility. The utility shall endeavor to maintain records that permit a reasonable calculation of these costs and credits. The contribution shall be refundable as additional customers attach to the facilities for which the customer made a contribution unless the additional customers require a new extension under s. PSC 113.90 (1). (See s. PSC 113.94 (1).)

(2) **REPLACEMENT OF OVERHEAD DISTRIBUTION FACILITIES WITH UNDERGROUND DISTRIBUTION FACILITIES.** A customer requesting the utility to replace existing overhead distribution facilities with underground distribution facilities shall pay the full estimated cost of construction including the cost of removal of existing distribution facilities less the accumulated depreciation and the salvage value of the existing overhead facilities which are removed. This contribution shall be refundable as additional customers attach to facilities for which the customer made a contribution if the cost of the required distribution facilities to serve the new customer is less than the appropriate embedded cost allowance.

(3) **UPGRADE OF DISTRIBUTION FACILITIES.** (a) *Due to change in load.* Customers who request an upgrading of the utility distribution facilities due to a change in the character of their load shall pay for the construction costs incurred by the utility to provide the requested additional facilities.

(b) *Demand schedule.* Customers who are served under a demand rate schedule shall receive an embedded cost allowance. The kilowatts of demand to be used in determining the allowance shall be the customer's average billed demand after the upgrade less the customer's average billed demand before the upgrade.

(c) *Customers transferring to a different energy-only classification.* If a customer served under an energy-only subclassification prior to the upgrade qualifies for a different energy-only subclassification after the upgrade, the customer shall receive a cost allowance equal to the difference between the two embedded cost allowances.

(d) *Customers transferring to a demand classification.* If a customer is served under an energy-only classification prior to the upgrade, the customer shall receive an embedded cost allowance. The kilowatts of demand to be used in determining the allowance shall be the customer's average billed demand after the upgrade less an estimate of the customer's prior average demand.

(4) **UPGRADE OF SERVICE FACILITIES.** (a) *Overhead service drop.* The utility shall not charge the customer to upgrade an overhead service drop with a larger size overhead service drop.

(b) *Underground service lateral.* The utility shall not charge the customer to upgrade an underground service lateral with a larger size underground service lateral.

(c) *Overhead service drop to underground service lateral.* The utility shall require a contribution from a customer requesting to have an overhead service drop upgraded to an underground service lateral. The contribution shall be equal to the cost of the underground service lateral less the cost of an equivalent overhead service drop.

(5) **PAYMENT PLANS.** The utility may require that the required contribution in aid of construction be paid in advance of construction or may, at the utility's option, offer customers an installment payment plan.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.96 Revision of estimates to reflect actual cost. The utility shall adjust its estimate of construction costs to reflect the costs that are actually incurred. Upon completion of an installation which differs from the utility's original cost estimate, a recalculation of the customer contribution shall be made using the same method as was used to determine the original contribution. If said recalculation differs by more than \$20 from original estimate, a refund or additional billing shall be rendered to the customer.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.

PSC 113.97 Extension or modification of transmission facilities to retail customers. Before a utility extends or modifies its transmission facilities to a retail customer, the utility shall require a contract between the utility and the customer which describes the facilities to be constructed, lists the cost of construction, apportions the responsibility for the construction costs between the utility and the customer, and provides a supporting analysis for the construction and the cost apportionment. The utility shall submit the contract to the commission for approval. The commission shall review the contract to assess whether existing ratepayers would be adversely affected by the proposed extension or modification. If the commission does not respond to the utility within 20 working days from the date of receipt, the contract is approved.

History: Cr. Register, December, 1984, No. 348, eff. 1-1-85.