CR 87-59

CERTIFICATE

STATE OF WISCONSIN)
) ss.
PUBLIC SERVICE COMMISSION)
OF WISCONSIN)

File 1-AC-114

TO ALL WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Jacqueline K. Reynolds, Secretary of the Public Service Commission of Wisconsin, and custodian of the official records of said commission, do hereby certify that the annexed order adopting emergency rules was duly approved and adopted by this commission on October 23, 1987.

I further certify that said copy has been compared by me with the original on file in this commission and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the commission at Hill Farms State Office Building in the City of Madison, WI October 27, 1987.

Jacqueline K. Reynolds
Secretary to the Commission
PUBLIC SERVICE COMMISSION OF WISCONSIN

2-1-88

BEFORE THE

PUBLIC SERVICE COMMISSION OF WISCONSIN

In the Matter of Proposed Revision of Chapter PSC 113, Wis. Adm. Code - Service Rules for Electric Utilities (Revision of Parts I, II, III, V, VI, VIII and IX)	)))))	1-AC-114

ORDER OF THE
PUBLIC SERVICE COMMISSION ADOPTING RULES

To amend Chapter PSC 113, Wis. Adm. Code, relating primarily to metering and other technical service provisions of the service rules for electric utilities.

ANALYSIS PREPARED BY THE

PUBLIC SERVICE COMMISSION OF WISCONSIN

On January 13, 1987, the Public Service Commission directed on its own motion that a rulemaking proceeding be initiated, with hearing, to update and otherwise revise Chapter PSC 113, Wis. Adm. Code, as indicated.

The last major revision of the metering and service provisions of Chapter PSC 113, Wis. Adm. Code, was completed in December 1977 (Docket Number 1-AC-12). Various developments and advancements have occurred during the interim which makes an updating of certain code provisions desirable. These developments, among others, include new metering equipment and

metering practices, especially those associated with time-of-day rates, direct load control and other load management techniques, and improvements in electric meter technology, including electronic meters and registers. Other miscellaneous revisions are necessary to reflect new or changing utility practices and to address technical or administrative problems where the current rules are deficient.

To meet these objectives, the commission has developed the rules proposed in this docket. Following is a section by section description and explanation of the proposed rules.

Section 1 proposes to repeal s. PSC 113.03. This requirement for ongoing maintenance of plant and equipment was reproduced in Chapter 113 from Volume 1 of the Wisconsin State Electrical Code (now Chapter PSC 114, Wis. Adm. Code). Since the electrical code is revised more frequently (every three years) than Chapter PSC 113, this rule is out of date although substantively similar to the current requirement of the electrical code. Since the electrical code also applies to all Wisconsin electric public utilities, it is not necessary to reproduce this provision in Chapter PSC 113.

Section 2 revises s. PSC 113.04 to update and simplify the maintenance and testing requirements for special types of control equipment. Much of the previous provisions concerning time switches, for example, to control water heaters, has been deleted because these devices are no longer in general use. A general provision is retained covering commission review and approval of procedures for specialized equipment or applications as necessary.

Section 3 is an editorial change to provide a cross reference to the provisions for sealing of meters (s. PSC 113.37) in s. PSC 113.07-Tamper resistant equipment.

Section 4 is an editorial change providing a cross reference to Part XII-Standards for Electric Service Extensions in s. PSC 113.11(9), which also talks about extension rule filings.

Section 5 would repeal s. PSC 113.115 to remove a filing requirement for certain federal forms which are no longer used by the Federal Power Commission or its successor, the Federal Energy Regulatory Commission. The commission receives most of this data from its own reports and other sources.

Section 6 is an editorial revision due to the renumbering of a cited statute.

Section 7 is an editorial change to provide a cross reference to Part XI-Rules for Interconnection of Small Customer-Owned Generation with Utility System Facilities in s. PSC 113.132(5) which also covers the parallel operation of customer generating equipment with the utility system.

Section 8 amends the current rule regarding the recalculation and adjustment bills for metering inaccuracies to limit the assumed period of inaccuracy, when unknown, to a period of ten years. In the past, electric meter accuracy retention characteristics were limited and, to ensure accurate performance, the frequency of required periodic testing was relatively short (eight years or less). Most new meters are extremely accurate and hold their accuracy for much longer periods of time. As a result, the frequency of required periodic testing has lengthened, particularly under the Variable Interval Plan (VIP) and the proposed statistical sample testing plan. Also, customers' billing records are nearly all automated and older records, while they may be available, are difficult to retrieve. Further, changes in ownership or tenancy over time make identification and location of prior occupants difficult. The proposed 10-year limit to this recalculation assumption is a reasonable compromise which adequately meets the needs of the utility and still provides reasonable protection to the customer in the rare cases where billing adjustments for inaccurate meters are required. This involves single-phase meters on primarily residential service. It does not affect three-phase service for larger commercial and industrial accounts where the meter test periods are relatively short.

Section 9 also amends the requirement for adjustment of bills for metering accuracy but limits the utility's ability to backbill the customer, when the meter error favors the customer, to a period of two years. This reflects a statutory requirement of s. 196.635, Wis. Stats., which is also reproduced in the amended rule as a cited cross reference.

Sections 10, 11 and 12 amend certain recordkeeping and reporting requirements related to meter accuracy to provide additional detail over similar requirements of the current rules. Section 12 is a new reporting requirement for monitoring the newly proposed sample testing plan.

Section 13 adds a note concerning conservation voltage reduction (CVR) to s. PSC 113.25 of the commission's voltage variation requirements which are otherwise unchanged.

Section 14 amends the current rule regarding unusual variations of voltage to inform those customers that may require a special or higher quality of service than normally required by the majority of customers, that they may be responsible to provide such auxiliary equipment or protection at their own expense. This is consistent with the long-standing rationale that customers with special needs or requirements over those of the average customer should be responsible for the associated incremental expense and that these special needs not be subsidized by the average customer. Although this has been general commission policy for some time, the added language specifically explains this provision.

Section 15 amends the current rule for clarity and adds a cross reference to rules in s. PSC 113.70 which also address harmonics and other potential problems with interconnection of customer-owned generation facilities.

Section 16 repeals and recreates the current rule on utility requirements for indicating voltmeters to improve continuity and clarity and to add provisions to cover the newer digital type instruments more commonly used today.

Section 17 amends the present rule on measuring customer service to require that customers of multi-dwelling unit and similar buildings have wiring and metering so installed so that each customer or tenant is metered and billed for his/her own consumption only. While this has been a general policy of the commission and the utilities, and while some utilities have included specific provisions in their filed rules, it is not specifically addressed in the current Chapter PSC 113. There have been some abuses where some incidental common area load, such as hallway lights or heat, have been served through a tenant's meter from one of the rental units. The purpose of the added language is to prevent this to the extent possible and specifically prohibit such wiring variances in new construction.

Section 18 amends the existing rule on individual electric meters for multi-unit buildings to clarify certain aspects of the existing rule and add a further exemption for specified housing meeting certain conditions. This additional

exemption codifies the exemption of this type of housing where the commission has previously provided waivers to the rule on a case-by-case basis. [NOT ADOPTED]

Section 19 creates a new rule covering the limited provision for submetering and resale of electric energy by multi-unit building owners. Resale of energy, commonly referred to as "submetering," while addressed and limited in some individual utility tariffs, is not otherwise addressed in state law or administrative rule. The commission is aware of certain past abuses of this practice where owners submeter and bill individual tenants for electric consumption but apply rates different (higher) than the utility could apply if service were provided directly. Under such circumstances, the commission and the utility are also without jurisdiction or control over the adequacy of service and the adequacy and accuracy of the metering. The commission has received an increasing number of inquiries about submetering and resale and the conditions under which it would approve or accept such service provision. The intent of the new rule is to specifically prohibit submetering and resale of energy except by application and approval by the commission under certain specified conditions. [NOT ADOPTED]

Section 20 is an editorial change to provide a cross reference to another section of the chapter which covers test requirements for transformer loss compensators used in specialized metering installations.

Section 21 is an editorial change to provide a cross reference to the rule on tamper resistant equipment in the rule covering the sealing of meters.

Section 22 amends the existing rule to lengthen the comparison check of secondary watthour standards from every two weeks to monthly. The change recognizes the better accuracy of newer meters and slightly reduces the testing workload for this checking requirement of field standards.

Sections 23 and 24 amend the existing rules relative to the testing requirements for demand meter registers and demand meters to update and clarify the existing requirements.

Section 25 amends the testing requirements for single-phase meters and 3-wire network meters to clarify and update the existing rule, delete the requirement for testing of inactive meters in inventory, and lengthen the test frequency from 12 to 16 years for the newer types of these meters. The changes reflect the improved performance characteristics and increased accuracy retention of newer electric meters. Also, under the commission's variable interval plan and proposed statistical sampling test plans, utilities have an incentive to retire, and have been

retiring, older type meters thereby improving the accuracy characteristics of the entire electric meter inventory.

Sections 26, 27 and 28 amend the existing variable interval plan periodic meter testing requirements to update and clarify the existing rule and its application in recognition of improving meter accuracy characteristics for newer meters now in service.

Sections 29 and 30 create new provisions allowing self-contained, single-phase and 3-wire network meters' accuracy performance to be monitored and controlled under a new statistical sample testing plan. The commission, by individual application and approval, has previously allowed use of a sample meter testing plan for new meters under certain specified conditions. The new rule codifies that plan and also provides a sample testing plan as an option for certain large utilities to be used in lieu of the variable interval plan or the standard periodic test requirements for in-service meters of this common type. The sample testing plan provides a method for adequately monitoring accuracy performance of a large number of consistent units with a minimal amount of actual testing. Like the variable interval plan, the periodic test frequency requirement for the various groups and subgroups of meters under the plan is determined by the results of testing a representative sample of these meters. The system provides an inherent incentive to accelerate the retirement of old meters or those other meters having poor accuracy performance in favor of newer meters or those meter types which perform very accurately. In general, for electric meters, the recent and growing experience of the utilities and the commission has displayed a rather consistent and dramatic improvement in meter accuracy retention characteristics. The sample testing plan therefore provides a significant potential for reducing the cost of electric meter testing and maintenance programs by assuring the continued maintenance of meter accuracy with a minimum amount of actual testing. The specifics of the rule and its application are based on longstanding sample testing and statistical procedures from a recognized standard specification source (Military Standard (MIL-STD)-414). Under sample testing, it is possible that individual electric meters may never receive a selected periodic accuracy test during their lifetime in service. This is also possible under the current variable interval plan for the newer meter types. Meters will still require testing on removal, however, and any billing adjustments required for any meter errors found at that time. Records and reports are also required to allow the commission to adequately monitor the sample meter testing program as it does with all meter testing options. The commission also retains a fairly liberal practice for customer request tests and commission referee tests on customer complaint. In summary, the commission believes the customers' interest will still be adequately protected and that the advantages of the proposed sample testing plan outweigh any disadvantages.

Sections 31 and 32 amend the existing testing requirements for self-contained, polyphase meters and single-phase meters with instrument transformers, respectively, to clarify and update the existing rule, delete the requirement for periodic testing of inactive meters in inventory, and add a provision for meters with electronic programmable registers.

Section 33 amends the current rule on testing of polyphase meters with instrument transformers to clarify and update the existing rule, delete the requirement for periodic testing of inactive meters from inventory, add a provision for meters with electronic programmable registers, and increase the periodic test frequency from two years to four years in recognition of improving accuracy requirements of newer meters of this type.

Section 34 amends the requirements for the testing of time-controlled, multi-register metering installations used for time-of-use rates to clarify and update the existing rule and add appropriate requirements for newer types of electronic meters and registers.

Section 35 amends the existing requirements for testing instrument transformers to reflect that the University of Wisconsin Electrical Standards Laboratory will no longer provide this service and to accept manufacturers calibration under certain specified conditions.

Section 36 amends the existing fee schedule for commission referee test of meters and metering equipment on complaint or by request of the customer. The existing schedule of services is significantly simplified by reducing the existing seven categories to only two; one for single-phase installations and one for polyphase installations including all accessory equipment. The $5.00 customer fee for single-phase referee test is retained and the existing $20.00 fee for polyphase referee test is increased to $25.00. While these fees do not cover the commission's cost in providing such referee test services, the commission has attempted to keep these fees as low as possible to maintain reasonable customer access to this service in cases where billing disputes involving meter accuracy questions are not otherwise resolvable.

PROPOSED RULES AND STATUTORY AUTHORITY

Pursuant to authority vested in the Public Service Commission by ss. 196.02, 196.03, 196.16, 196.37 and 227.014, Stats., the commission adopts rules as shown in the attached Appendix.

FISCAL ESTIMATE AND

INITIAL REGULATORY FLEXIBILITY ANALYSIS

There will be no fiscal impact of the proposed rules on state or local units of government, including municipally-owned electric utilities. The proposed rules will have no effect on small businesses.

EFFECTIVE DATE

If the commission approves the proposed rules as permanent rules, they will take effect on the first day of the month following publication in the Wisconsin Administrative Register, as provided in sec. 227.22, Stats.

ENVIRONMENTAL ANALYSIS

This action is classified as a Type 3 action according to PSC 2.90(3), Wis. Adm. Code. No unusual circumstances have come to the attention of the commission that would require further environmental review. It consequently requires neither an environmental impact statement under s. 1.11, Stats., nor an environmental assessment.

These proposed rules were forwarded to the Legislature for review pursuant to s. 227.19, Stats. They will take effect as final rules on the first day of the month following publication in the Wisconsin Administrative Register, as provided in s. 227.22, Stat.

Dated at Madison, Wisconsin, October 23, 1987

By the Commission.

Jacqueline K. Reynolds
Secretary to the Commission

JKR:LLS:erb12308602

APPENDIX

PROPOSED RULES

SECTION 0. PSC 113.02 is created to read:

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 Chapter 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 PSC 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, D.C. 20402.

SECTION 1. PSC 113.03 is repealed.

SECTION 2. PSC 113.04 is amended and renumbered to read:

PSC 113.04 SERVICING UTILIZATION CONTROL EQUIPMENT. (1) Utilities shall service and maintain any equipment they use on customers' premises ~~and shall adjust thermostats, clocks, relays, or time switches, if such devices must be so adjusted~~ so as to provide service in accordance with the rate provisions.

~~(2) The time switches used by the utility for controlling equipment such as water heaters, street lights, etc., shall be of such quality that the timing mechanism may be adjusted as to be accurate within 10 minutes per month. Time switches used by the utility for controlling street lighting or display lighting shall be inspected or operation observed at least once each 3 months and if in error, adjusted, and also adjusted upon complaint if found in error or when service interruptions cause them to be in error by one half hour~~

~~or more.--Time switches used by the utility for controlling off-peak appliances shall be inspected or operation observed when the utility reads the meter and when the meter is tested and adjusted if in error, and also adjusted upon complaint if found in error or whenever service interruptions result in error of 2 hours or more in supplying service to off-peak appliances during peak periods.~~

~~(3)~~ (2) Utilities shall test load-control systems ~~utilizing a central signaling source to operate equipment on the customers' premises for directly or indirectly controlling customer loads shall be tested as follows:~~

~~(a) The central signaling source shall be tested for proper signal output in accordance with procedures as filed with and accepted by the commission.~~

~~(b) The receiver control devices at the customers'~~ premises according to procedures as filed with and accepted by the commission. ~~At the minimum such tests shall include an annual sample testing of the various types of devices in use (sufficient to determine whether each of the various types of devices is performing satisfactorily, and a test of any unit suspected to have failed or which is the subject of a customer complaint.~~

~~(c) Each utility shall file with the commission appropriate test procedures in accordance with preceding pars. (a) and (b) within 12 months after placing each load control system in use.~~ The initial filing may consist of temporary procedures to be observed until the capabilities of the particular system are determined from experience.

~~(4)~~ (3) Other control devices used by the utility to control loads shall be checked periodically.

SECTION 3. PSC 113.07 is amended to read:

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.

Notes: (1) Also see s. PSC 113.37.

(2) 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 overlooked. 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.

SECTION 4: Sec. PSC 113.11(9) is amended to read:

PSC 113.11 --- (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. Also see Part XII - Standards for Electric Service Extensions.

SECTION 5: Sec. 113.115 is repealed.

SECTION 6: Sec. PSC 113.132(4) is amended to read:

(4) Service may be denied to any customer for failure to comply with applicable requirements of this section, or of the utility's rules, or with s. ~~167.16~~ 101.865, Stats.; or if the customer proposes to use a device that is not designed so that interference with communication and signal services is reasonably minimized.

SECTION 7. PSC 113.132(5) is amended to read:

PSC 113.132 (5) A utility is not required to furnish 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.

Note: See Part XI - Rules for Interconnection of Small Customer-Owned Generation With Utility System Facilities.

SECTION 8. PSC 113.17(2)(b) is amended to read:

PSC 113.17(2)(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.

SECTION 9. PSC 113.17(4) is amended to read:

PSC 113.17 (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 ~~residential~~ all customers, the period of backbilling ~~shall~~ 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.

SECTION 10. PSC 113.17(5) is amended to read:

PSC 113.17(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 calander year (or an annual period compatible with the meter accuracy summary report required by 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.

SECTION 11. PSC 113.23 is amended to read:

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 ~~not~~ be retained after the equipment is again tested. ~~if-a-complete history-record-is-maintained.~~ 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 two tests; results of ~~all~~ 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; ~~94.0% and under; 94.1% to 96.0%; 96.1% to 98.0%; 98.1% to 99.0%; 99.1% to 100.0%;~~ 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 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.

SECTION 12. PSC 113.23(4) is created to read:

PSC 113.23(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 of 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.

SECTION 13. PSC 113.25 (Note) is created to read:

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 ± 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).

SECTION 14. PSC 113.26(1) is amended to read:

PSC 113.26 UNUSUAL VARIATIONS OF VOLTAGE. (1) Variations of voltage, in excess of those specified in section 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 ~~shall~~ 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.

SECTION 15. PSC 113.27(1) is renumbered PSC 113.27 and amended to read:

PSC 113.27 HARMONICS OF 60 Hz VOLTAGE WAVE. ~~(1)~~ 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 ~~customer~~ utility shall ~~be-so-advised-and-informed-of-his~~ notify the customer and it shall be the customer's responsibility to correct the problem.

Note: See ss. PSC 113.015 and 113.70.

SECTION 16: PSC 113.29 is repealed and recreated to read:

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-mechnical 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.

Notes: (1) Also see section 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 replaced by more recent records, shall be available for inspection by the commission for a period of 6 years.

SECTION 17. PSC 113.31 is repealed and recreated to read:

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.

[NOT ADOPTED]

SECTION 18 PSC 113.315(1) is amended to read:

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 utility-owned and-maintained electric meter for each such dwelling or commercial unit. See s. PSC 113.31. In this section, "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~~ In this section "dwelling unit" does not include transient multi-dwelling buildings and mobile home parks: for example, hotels, motels, campgrounds, resort dwellings rented or sold (condominiums) on a time-sharing basis to multiple renters or owners, hospitals, nursing homes, convalescent homes, college dormitories, fraternities, and sororities.

[NOT ADOPTED]

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

(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.

(d) For a residential building or complex of buildings having no individual unit electric heaters, and no current installation nor provision for future installation of individual unit air conditioners, electric water heaters, automatic dishwashers or laundry facilities.

[NOT ADOPTED]

SECTION 19. PSC 113.316 is created to read:

PSC 113.316 RESALE OF ENERGY. (1) A utility may not permit the resale of electric energy by its retail customers unless authorized by the commission in utility-specific tariff provisions. Resale is defined as the furnishing of electric service by a customer to another person or persons where the service so furnished is separately charged in whole or in part, whether as a flat charge or on the basis of submetering or any measure of the quantity or value of the service used. This prohibition does not apply to wholesale sales of energy to another public utility or electric cooperative.

(2) Where a customer is permitted to submeter and resell electric energy by specific authorization of the utility under a commission-approved tariff, the following conditions of the authorization shall apply unless specifically exempted or modified by the commission:

(a) Commercially-acceptable meters approved by the utility shall be used. They may be furnished and owned by the reseller or may be provided and owned by the utility by agreement of the parties or in accordance with the utility's tariff.

[NOT ADOPTED]

(b) Meters used shall be reasonably accessible to the utility and shall be tested and maintained pursuant to the rules of the commission. Meter testing and maintenance services may be furnished by the utility by agreement of the parties or in accordance with the utility's tariff or may be provided by the reseller under terms and conditions acceptable to the utility. Records of meter test results and meter adjustment or maintenance performed on the meter shall be kept by the reseller and made available for review by the utility or the commission. If the utility owns, tests and maintains the meters for the reseller under agreement as provided herein, the utility may keep and maintain these meter records.

(c) The utility may establish rules and fees to cover the reasonable cost of providing, testing and maintaining the submeters.

(d) The reseller shall not charge rates which are higher than the currently filed rates of the utility for comparable

service that would apply if service were furnished directly by the utility.

[NOT ADOPTED] (e) The utility shall periodically verify that the reseller is applying the utility's current rates correctly and is not violating (d) above. The periodic review by the utility shall be as often as base rates change, but not less than once a year.

(f) Utilities shall inform the commission of any rejected applications for submetering and any submetering equipment determined to be inappropriate for use.

SECTION 20. PSC 113.36(2) is amended to read:

PSC 113.36 (2) Loss compensators designed to be used with meters and which accurately add iron ~~and/or~~ 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 sec. PSC 113.61 which covers test requirements for transformer loss compensators.

SECTION 21. PSC 113.37(1) is amended to read:

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 sec. PSC 113.07 - Tamper-resistant equipment.

SECTION 22. PSC 113.45(4)(a) is amended to read:

PSC 113.45(4)(a) All working portable standard watthour meters when regularly used shall be compared with a secondary standard at least ~~once in every 2 weeks~~ monthly, and if infrequently used shall be compared with a secondary standard before they are used.

SECTION 23. PSC 113.472 is repealed and recreated to read:

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 watthour meters shall be tested with the demand register mounted in a normal operating position on the watthour 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 watthour meters shall be tested with the demand register mounted in a normal operating position on the watthour meter. The demand registered on the demand meter during the test shall be equivalent to the test ampere rating of the watthour meter with the demand test interval varying from a fraction of an interval up to a full interval.

SECTION 24. PSC 113.473 is amended to read:

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, relays and circuitry may be considered to be operating properly when a kilowatthour check indicates that the demand meter kilowatthours are within the required accuracy limits of the watthour meter kilowatt hours. ~~At least 10 pulses shall be transmitted from each pulse initiator during the test and it shall be determined that every pulse is received (recorded). The kilowatthour value of a pulse from each pulse initiator should be verified. In the case of pulse recorders, the incoming pulses may be checked against the counters on the pulse recorders, where available, or against visual or audible test equipment. When warranted, a test tape may be installed and the reading from the tape compared with the number of incoming pulses.~~

SECTION 25. PSC 113.51 is amended and renumbered to read:

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) ~~Within a period of 12 months before to 60 days after they are~~ 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 ~~approved by the commission~~ 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) ~~Before use when they have been inactive for more than one year.~~

~~(e)~~ (d) When they are removed from service.

~~(f)~~ (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 ~~12~~ 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 s. PSC 113.518. Exception: Lagged-demand meters shall be tested every 8 years.

SECTION 26. PSC 113.515 is repealed and recreated to read: (Sections 27 & 28 of the Notice have been consolidated into Section 26.)

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.

SECTION 29. PSC 113.517 is created to read:

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(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 manufacturer 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.

SECTION 30. PSC 113.518 is created to read:

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 113.51, 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 or 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(c). A separate statistical analysis shall be performed on each lot sample at each of these two 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(c). Meters 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 two 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(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.

SECTION 31. PSC 113.52 is amended and renumbered to read:

PSC 113.52 TESTING OF SELF-CONTAINED POLYPHASE METERS. (1) ~~These~~ 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) ~~and (e)~~ below, ~~)~~ 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) Before use when they have been inactive for more than 1 year.~~

~~(e)~~ (d) Within 60 days after they are removed from service.

~~(f)~~ (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.

SECTION 32. PSC 113.53 is amended and renumbered to read:

PSC 113.53 TESTING OF METERS USED WITH INSTRUMENT TRANSFORMERS ON SINGLE-PHSE SERVICE. (1) ~~These~~ 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) ~~and (e)~~ below~~)~~, 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) ~~Before use when they have been inactive for more than 1 year~~.

~~(e)~~ (d) When they are removed from service.

~~(f)~~ (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.

SECTION 33. PSC 113.54 is amended and renumbered to read:

PSC 113.54 TESTING OF POLYPHASE METERS USED WITH INSTRUMENT TRANSFORMERS. (1) ~~These~~ 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) ~~and (e)~~ below~~)~~, 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) Before use when they have been inactive for more than 1 year.~~

~~(e)~~ (d) When they are removed from service.

~~(f)~~ (e) Within a period of ~~2~~ 4 months before or ~~2~~ 4 months after ~~2~~ 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.

SECTION 34. PSC 113.555 is repealed and recreated to read:

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 schedules specified under PSC 113.51, PSC 113.52, PSC 113.53 and PSC 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(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 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.

SECTION 35. PSC 113.56(2),(3)(Intro.),(4) is amended to read:

PSC 113.56 (2) ~~Voltage-withstand-tests.~~ 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. ~~The-University-of-Wisconsin-electrical-standards laboratory-is-not-equipped-to-perform-these-voltage-withstand~~

~~tests.--In-addition,~~ 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's meter shop ~~or-the-University-of-Wisconsin-Electrical-Laboratory~~ 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 accepted 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. ~~This test may be performed by the manufacturer, the utility, or the University of Wisconsin electrical standards laboratory.~~

(b) When there is evidence from outward appearance or performance to suspect inaccuracy. ~~This test may be performed by the University of Wisconsin electrical standards laboratory.~~

SECTION 36: Sec. PSC 113.575 is amended to read:

PSC 113.575 COMMISSION REFEREE TEST. (1) 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 watthour or varhour 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 connnections or auxiliary equipment results in over-registration greater than stated above. The fees for making such tests shall be follows:

Single-phase ~~self-contained~~ watthour meter	$ 5
~~Single-phase-transformer-rated watthour-meter~~	~~$10~~
Polyphase ~~self-contained~~ watthour meter*	~~$20~~ $25
~~Polyphase-transformer-rated-watthour-or varhour-meter~~	~~$50~~
~~Demand-register~~	~~$10~~
~~Instrument-transformer-field-check,-for each-transformer-checked~~	~~$-5~~
~~Other-metering-equipment~~	~~**~~

~~*Exclusive of any demand register~~

~~**At cost of test~~

~~(2) In the case of a test involving a metering installation for residential or farm time of use service, the test fee for metering equipment other than instrument transformers may be waived by the commission for requests made within 5 years from the effective date of this revised rule.~~

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State of Wisconsin \ PUBLIC SERVICE COMMISSION

CHARLES H. THOMPSON, CHAIRMAN
MARY LOU MUNTS, COMMISSIONER
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4802 Sheboygan Avenue
P. O. Box 7854
Madison, Wisconsin 53707

October 27, 1987

Mr. Gary Poulson
Assistant Revisor of Statutes
Suite 904
30 West Mifflin Street
Madison, WI 53703

Re: In the Matter of Proposed Revision of Chapter PSC 113, Wis. Adm. Code - Service Rules for Electric Utilities (Revision of Parts I, II, III, V, VI, VIII and IX) - 1-AC-114

Dear Mr. Poulson:

Enclosed please find two copies (one certified) of an order of the Public Service Commission adopting rules in the above-entitled matter.

The rules have been seen by legislative committees.

Sincerely,

Steven Levine
Assistant Chief Counsel

Enc.

SL:mac10278702