

# ORIGINAL

## NOTICE OF PROPOSED RULE DEVELOPMENT FLORIDA PUBLIC SERVICE COMMISSION

UNDOCKETED

RULE TITLE:	RULE NO.:
Record of Metering Devices and Metering Device Tests	25-6.022
Test Procedures and Accuracies of Consumption Metering Devices	25-6.052
Metering Device Test Plans	25-6.056
Determination of Average Meter Error	25-6.058
Meter Test by Request	25-6.059
Meter Test – Referee	25-6.060
Adjustment of Bills for Meter Error	25-6.103

PURPOSE AND EFFECT: To amend the rules to clarify the calculation of meter error used in the determination of any potential refund or backbill and reflect the most current edition of the American National Standard for Electric Meters.

SUBJECT AREA TO BE ADDRESSED: Electric meter testing

SPECIFIC AUTHORITY: 366.05(1), FS

**CMP** \_\_\_\_\_ LAW IMPLEMENTED: 366.03, 366.04, 366.05, 366.06, FS

**COM** \_\_\_\_\_ A RULE DEVELOPMENT WORKSHOP WILL BE HELD AT THE TIME, DATE, AND

**CTR** \_\_\_\_\_ PLACE SHOWN BELOW:

**ECR** \_\_\_\_\_

**GCL** \_\_\_\_\_ TIME AND DATE: 9:30 a.m., September 21, 2005

**OPC** \_\_\_\_\_ PLACE: Betty Easley Conference Center, Room 182, 4075 Esplanade Way, Tallahassee, Florida

**RCA** \_\_\_\_\_

**SCR** \_\_\_\_\_ Any person requiring some accommodation at this workshop because of a physical impairment

**SGA** \_\_\_\_\_ should call the Division of the Commission Clerk and Administrative Services at (850) 413-6770

**SEC**   1   at least 48 hours prior to the hearing. Any person who is hearing or speech impaired should

**OTH** \_\_\_\_\_

DOCUMENT NUMBER-DATE

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FPSC-COMMISSION CLERK

contact the Florida Public Service Commission by using the Florida Relay Service, which can be reached at: 1-800-955-8771 (TDD).

THE PERSON TO BE CONTACTED REGARDING THE PROPOSED RULE

DEVELOPMENT IS: Roland Floyd, Florida Public Service Commission, 2540 Shumard Oak Blvd., Tallahassee, FL 32399-0862, (850) 413-6676.

THE PRELIMINARY TEXT OF THE PROPOSED RULE DEVELOPMENT IS:

25-6.022 Record of Metering Devices and Metering Device Tests.

(1) For all types of utility-performed tests, a test record shall be made whenever a unit of metering equipment is tested, but need not be retained after the equipment is again tested unless the test is made in accordance with Rule 25-6.059. When equipment accuracy testing is required under Rule 25-6.059, any record of accuracy testing for disputed equipment that is on file at the time the customer request is made under Rule 25-6.059 must be retained until the dispute is resolved. The record shall show information to identify the unit and its location; equipment with which the unit is associated; the date of the test; reason for the test; readings before and after the test; if the meter creeps, a statement as to the rate of creeping; a statement of the “as found” accuracy; indications showing that all required checks have been made; a statement of repairs made, if any; and identification of the person making the test. The completion of each test will signify the “as left” accuracy falls within the required limits specified in Rule 25-6.052, F.A.C., unless the meter is to be retired.

(2) No change.

(3) Records of Test for Incoming Purchases. Regardless whether the newly purchased metering equipment is tested under a Random Sampling Plan approved pursuant to Rule 25-6.056, each utility shall maintain and make available to the Commission for each purchase of

new meters and associated devices made during the calendar or fiscal year, the following information:

(a) – (h) No change.

(4) Records of Periodic and Annual In-Service Meters Tests. Each utility shall maintain test records for each periodic and annual in-service test of electric meters and associated devices in such a manner that the information listed in paragraphs (4)(a) through (h) is readily available to the Commission on request. These data shall be maintained for units of metering equipment tested under approved Random Sampling Plans and for units tested under periodic testing programs, and shall be summarized on an annual basis.

(a) Type of equipment, including manufacturer, model number, and any features that ~~which~~ are currently used to classify the units tested into a population of units for in-service tests;

(b) – (i) No change.

Specific Authority 366.05(1) FS.

Law Implemented 366.05(1), (3), 366.04(2)(f) FS.

History--Amended 7-29-69, Formerly 25-6.22, Amended 5-19-97, \_\_\_\_\_.

25-6.052 Accuracy Requirements and Test Procedures for and Accuracies of Consumption  
Metering Devices.

(1) Definitions.

(a) “Electronic Meter.” Any meter that measures electric demand or energy and displays registration using electronic components only.

(b) “Mechanical Meter.” Any meter that measures electric demand or energy and displays registration using mechanical components rather than electronic or solid-state components.

(c) “Lagged Demand (or Thermal Demand) Meter.” Any meter that indicates demand by means of thermal or mechanical devices having an approximately exponential response.

(d) “Registration Error.” The variation in kilowatts or kilowatt-hours from the true value measured by a standard or reference device.

(2)(1) Accuracy Requirements for Watthour Meters. The performance of an in-service watthour meter shall be acceptable when the meter does not creep and the average error of registration does not exceed plus or minus two percent. ~~percentage registration is not more than 102 percent nor less than 98 percent,~~ calculated Meter registration error shall be determined in accordance with Rule 25-6.058(1), F.A.C.

(3)(2) Accuracy Requirements for Demand Meters and Registers.

(a) The performance of a mechanical or lagged demand meter or register shall be acceptable when the error of registration does not exceed four percent in terms of full-scale value, ~~when tested~~ at any point between 25 percent and 100 percent of full-scale value. Meter registration error shall be determined in accordance with Rule 25-6.058(2)(a).

(b) The performance of an electronic demand meter or register shall be acceptable when the error of registration does not exceed two percent of reading, ~~when tested~~ at any point between 10 percent and 100 percent of full-scale value. Meter registration error shall be determined in accordance with Rule 25-6.058(2)(b).

(c) No change.

(4)(3) Meter Equipment Test Procedures.

(a) No change.

(b) Watthour meters and associated devices shall be tested for accuracy and adjusted in accordance with American National Standard for Electric Meters, Code for Electricity Metering (ANSI C12.1 – 2001+995), which is incorporated into this rule by reference.

(c) Electronic ~~Totally solid-state~~ meters that compute demand from watthour meter registration and programmed demand algorithms shall be tested and adjusted in accordance with ANSI C12.1 – 2001+995. Demand registration need not be tested, provided the meter has been inspected to contain the correct demand algorithm whenever watthour registration is tested.

~~(5)~~(4) Test Procedures.

(a) – (b) No change.

(c) Any changes to a previously approved test procedure must be submitted to the Commission's Division of Economic Regulation for approval. Adding a meter type to a previously approved test procedure is a change that ~~which~~ requires approval.

(d) Review of Proposed Test Procedures. Except where a utility has requested a formal ruling by the Commission, the Division of Economic Regulation shall within 90 days after submission review each utility's proposed test procedures to determine whether they satisfy the criteria set forth in paragraphs (4)(a) and (b) above and shall notify the utility in writing of its decision accepting or rejecting the proposed procedures. If a proposed procedure is rejected, the written notice of rejection shall state clearly the reasons for rejecting the proposed procedure. If a utility's proposed procedure is rejected, the utility shall submit a revised procedure to the Commission within 60 days after receiving the notice of rejection. Where a utility has requested staff review of its procedures and a procedure has been rejected, the utility may petition the Commission for approval of the procedure. ~~If a utility has not submitted a satisfactory procedure~~

~~within six months following the submission of the initially proposed procedure, the Commission may prescribe by order a procedure for the utility.~~

Specific Authority 366.05(1) FS.

Law Implemented 366.05(3) FS.

History—Amended 7-29-69, Formerly 25-6.52, Amended 5-19-97, \_\_\_\_\_.

25-6.056 Metering Device Test Plans.

(1) No change.

(2) All metering device tests shall be retained in accordance with ~~by the utility and made available to the Commission pursuant to Rule 25-6.022, F.A.C.~~

(3) New instrument transformers shall be tested before initial installation. Instrument transformers that ~~which~~ have been removed from service shall be tested prior to reinstallation if the reason for removal, physical appearance, or record of performance gives cause to doubt its reliability.

(4) All metering equipment listed in Rule paragraph 25-6.052(5)(4)(a), F.A.C., shall be tested:

(a) Before initial and each successive installation, either by the utility or the manufacturer, with the exception of units of metering equipment that ~~which~~ are statistically sample tested by the utility under an approved Random Sampling Plan, as set forth in subsection (8); and

(b) – (5) No change.

(6) Within each population specified in an approved sampling plan or periodic test plan of mechanical or lagged demand meters, or other metering devices for which acceptability is

stated in terms of full-scale value, each device shall have the same class amperage and class voltage.

(7)(6) In-Service Testing.

(a) No change.

(b) In-service metering devices that ~~which~~ are not included in an approved Random Sampling Plan shall be tested periodically. The periodic testing schedule for equipment not included in an approved Random Sampling Plan must be approved by the Commission.

(8)(7) Random Sampling Plans Submitted for Approval.

(a) Commission approved Random Sampling Plans shall ~~may~~ be used to accept or reject shipments of newly purchased equipment and to estimate the average accuracy of equipment in service.

(b) Random Sampling Plans published by the United States Department of Defense or by The American Society for Quality Control, or any other sampling plans that ~~which~~ have been approved by the Commission prior to the effective date of this rule need not be re-approved for the types of equipment for which they were approved.

(c) No change.

(d) "Variables" sampling plans shall ~~may~~ use either of the "known variability" or the "unknown variability" acceptance criteria. The acceptance criteria shall be appropriately modeled. Variables sampling plans shall use the population standard deviation to measure variability unless the proposed plan is accompanied by adequate justification for using another parameter.

(9)(8) No change.

(10)(9) Approval of Sampling Plans and In-Service Testing Schedules. All utilities subject to this rule shall submit to the Commission's Division of Economic Regulation a proposed Random Sampling Plan for each population of metering devices for which it intends to use a random sampling plan for acceptance testing or for in-service testing, and a proposed periodic testing schedule for each population of metering devices for which it does not submit a proposed in-service random sampling plan. Sampling plans and in-service testing schedules must be reviewed and approved pursuant to subsection (11) prior to their use.

(11)(10) Review of Proposed Test Plan. As used in this subsection, the word "plan" includes periodic testing schedules as well as Random Sampling Plans. Except where a utility has requested a formal ruling by the Commission, the Division of Economic Regulation shall within 90 days after submission review each utility's plan to determine whether it satisfies the criteria set forth in subsections (8)(7) and (9)(8) above and shall notify the utility in writing of its decision accepting or rejecting the proposed plan. If a proposed plan is rejected, the written notice of rejection shall state clearly the reasons for rejecting the proposed plan. If a utility's proposed plan is rejected, the utility shall submit a revised plan to the Commission within 60 days after receiving the notice of rejection. Where a utility has requested staff review of its plan and the plan has been rejected, the utility may petition the Commission for approval of the initially proposed plan. ~~If a utility has not submitted a satisfactory plan within six months following the submission of the initially proposed plan, the Commission may prescribe by order a plan for the utility.~~

Specific Authority 366.05(1) FS.

Law Implemented 366.05(3) FS.

History—New 7-29-69, Amended 4-13-80, Formerly 25-6.56, Amended 5-19-97,\_\_\_\_\_.



25-6.058 Determination of Average Meter Registration Error.

Whenever a metering installation is tested and found to exceed the accuracy limits, the average error shall be determined in one of the following ways:

(1) Average Meter Registration Error for Watthour Registers.

(a)(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 registration error accuracy of the meter "as found" shall be considered as the average meter error accuracy.

(b)(2) If a single-phase metering installation is used on a varying load, the average registration error shall be determined by in one of the following methods. ways: The utility shall select the method that best fits the customer's usage pattern.

1.(a) No change.

2.(b) No change.

3.(c) A single point, when calculating the error of an electronic a totally solid-state meter, and the single point is an accurate representation of the error over the load range of the meter.

(c)(3) If a polyphase metering installation is used on a varying load, the average error shall be determined by in one of the following methods. ways: The utility shall select the method that best fits the customer's usage pattern.

1.(a) No change.

2.(b) A single point, when calculating the error of an electronic a totally solid-state meter, and the single point is an accurate representation of the error over the load range of the meter.

(2) Average Meter Registration Error for Demand Registers.

(a) For mechanical or lagged demand meters, registration error shall be determined by testing the meter at both 40 percent and 80 percent of its full-scale value, as read on the reference or standard meter, or as near to these two points as practicable. The following two formulas shall be used to estimate the kilowatt error of the meter at 25 percent of full scale and at 100 percent of full scale:

$$E_{25} = [E_{80} - E_{40}] / [R_{80} - R_{40}] * [R_{25} - R_{40}] + E_{40}$$

$$E_{100} = [E_{80} - E_{40}] / [R_{80} - R_{40}] * [R_{100} - R_{40}] + E_{40}$$

where:

R<sub>25</sub> and R<sub>100</sub> denote the kilowatt readings on the reference meter at 25 percent and 100 percent of the full scale value of the meter being tested, respectively;

R<sub>40</sub> and R<sub>80</sub> denote the kilowatt readings on the reference meter at 40 percent and 80 percent of the full scale value of the meter being tested, respectively;

E<sub>40</sub> and E<sub>80</sub> denote the kilowatt errors on the meter being tested corresponding to R<sub>40</sub> and R<sub>80</sub>, respectively;

E<sub>25</sub> is the estimated kilowatt error corresponding to R<sub>25</sub>; and

E<sub>100</sub> is the estimated kilowatt error corresponding to R<sub>100</sub>.

The greater of these two estimated kilowatt errors, E<sub>25</sub> or E<sub>100</sub>, shall be expressed as a percentage of the full-scale value of the meter being tested to determine if the meter meets the accuracy requirement of Rule 25-6.052(3)(a).

(b) For electronic demand meters, registration error shall be determined by testing the meter at 80 percent of the manufacturer's full load rating, as read on the reference or standard meter, or as near to that point as is practicable. The percent error of registration is defined to be:

$$\text{Percent Error of Registration} = [(M_{80} - R_{80}) / R_{80}] * 100$$

where:

R<sub>80</sub> is the kilowatt reading on the reference meter when the reference meter is at 80 percent of the full load rating of the metering being tested; and

M<sub>80</sub> is the corresponding kilowatt reading on the meter being tested.

Specific Authority 366.05(1) FS.

Law Implemented 366.05(3) FS.

History—New 7-29-69, Formerly 25-6.58, Amended 5-19-97, \_\_\_\_\_.

25-6.059 Meter Test by Request.

(1) No change.

(2) Should any customer request a meter test more frequently than provided for in subsection (1) of this rule, the utility may require a deposit to defray costs of testing, such deposit not to exceed fifteen dollars (\$15.00) for each test. If the meter is found to be running fast in excess of the allowable limit the deposit shall be refunded, but if the meter is below the allowable limit, the deposit may be retained by the utility as a service charge for conducting the test.

(3) No change.

(4) At the request of the customer, the utility shall make arrangements for a meter test to be conducted by an independent meter testing facility of the customer's choosing. The customer shall be responsible for negotiating and paying to the independent meter testing facility any fee charged for such a test. Such independent meter testing facilities shall, at a minimum, conform to the requirements of the American National Standard for Electric Metering, Code for Electricity Metering, ~~Seventh Edition~~ (ANSI C12.1 2001+982). Where appropriate, the meter may be field tested. The customer shall be responsible for all the costs incurred by ~~to~~ the utility related to

~~associated with~~ a meter test by an independent meter testing facility. The utility shall provide a detailed estimate of such costs the utility expects to incur related to the meter test and may require payment of such costs prior to the actual meter test. The customer shall provide to the utility a detailed estimate of charges from the independent testing facility for the meter test prior to the actual test. If the meter is found to be running fast in excess of the limits established by these rules, any payment collected by the utility related to the meter test such costs shall be refunded, but if the meter is found to be within the allowable limits established by these rules, the utility may retain any payments collected by the utility related to the meter test the costs.

(5) No change.

(6) For equipment tested under this rule, any previous accuracy test result on record at the time the meter test is requested must be retained in accordance with Rule 25-6.022.

Specific Authority 366.05(1) FS.

Law Implemented 366.05(4), (5), 366.05(3) FS.

History—New 7-29-69, Amended 10-11-83, Formerly 25-6.59, \_\_\_\_\_.

25-6.060 Meter Test - Referee.

(1) – (3) No change.

(4) For equipment tested under this rule, any previous accuracy test result on record at the time the meter test is requested must be retained in accordance with Rule 25-6.022.

Specific Authority 366.05(1) FS.

Law Implemented 366.05(3) FS.

History—New 7-29-69, Formerly 25-6.60, \_\_\_\_\_.

25-6.103 Adjustment of Bills for Meter Error.

(1) For mechanical or lagged demand meters, the error at the customer's average billing demand over the refund period shall be used to determine the amount to refund or backbill the customer. This error shall be determined by testing the meter at both 40 percent and 80 percent of meter full scale value, as read on the standard or reference meter, or as near to these two points as is practicable. The following formula shall be used to estimate the kilowatt error of the meter at the customer's average billing demand:

$$E_{avg} = [E_{80} - E_{40}] / [M_{80} - M_{40}] * [M_{avg} - M_{40}] + E_{40}$$

where:

M<sub>avg</sub> denotes the average billing demand over the refund period;

M<sub>40</sub> and M<sub>80</sub> denote the kilowatt readings on the meter being tested when the reference meter is at 40 percent and 80 percent of the full-scale value of the meter being tested, respectively;

E<sub>40</sub> and E<sub>80</sub> denote the kilowatt errors on the meter being tested corresponding to M<sub>40</sub> and M<sub>80</sub>, respectively; and

E<sub>avg</sub> denotes the estimated kilowatt error at the customer's average billing demand.

The kilowatt error so determined, E<sub>avg</sub>, shall be expressed as a percentage of the reference meter reading corresponding to the average billing demand. This percentage shall be used to determine the corrected billing demand for each month of the refund period.

(2) For electronic meters, the percentage error to be used for refunds and backbills shall be the same percentage specified in Rule 25-6.058(3)(b).

(3)(1) Over-registering Fast meters. Whenever a meter tested is found to have an error in excess of the plus tolerance allowed in Rule 25-6.052, F.A.C., the utility shall refund to the customer the amount billed in error as determined by subsection (1) or subsection (2) of this rule

~~Rule 25-6.058, F.A.C.,~~ for one half the period since the last test, said one half period shall not exceed twelve (12) months; except that if it can be shown that the error was due to some cause, the date of which can be fixed, the overcharges shall be computed back to but not beyond such date based upon available records. The refund shall not include any part of any minimum charge.

~~(4)(2)~~ Under-registering Slow meters.

(a) Except as provided in subsection (4)(b) of this rule ~~by this paragraph~~, a utility may backbill in the event that a meter is found to be under-registering slow, ~~non-registering or partially-registering~~. A utility may not backbill for any period greater than twelve (12) months ~~from the date it notifies a customer that his or her meter is slow, non-registering or partially registering~~. If it can be ascertained that the meter was under-registering slow, ~~non-registering or partially registering~~ for less than twelve (12) months ~~prior to notification~~, then the utility may backbill only for the lesser period of time. In any event, the customer may extend the payments of the backbill over the same amount of time for which the utility issued the backbill. ~~Nothing in this subsection shall be construed to limit the application of Rule 25-6.104, F.A.C., or prohibit a utility from backbilling for four years pursuant to subsection (5) of this rule.~~

(b) Nothing in subsection (4)(a) of this rule shall be construed to limit the application of Rule 25-6.104, or prohibit a utility from backbilling for four years pursuant to subsection (6) of this rule.

~~(c)(b)~~ Whenever a meter is tested and not subject to Rule 25-6.104 or subsection 25-6.105(5), F.A.C., and is found to have an error in excess the minus tolerance allowed by Rule 25-6.052, F.A.C., the utility may bill the customer an amount equal to the unbilled error as determined by subsection (1) or subsection (2) of this rule. ~~Rule 25-6.058, F.A.C., in accordance with this subsection. In order to determine the amount of undercharge, the recorded~~

~~consumption shall be adjusted using the amount of error found by the meter to determine the correct consumption and the customer's bills in question shall be recalculated and computed to the actual bills rendered. If the utility has required a deposit for a meter test as permitted under subsection (2) of Rule 25-6.059(2), F.A.C., the customer may be billed only for that portion of the unbilled error which is in excess of the deposit retained by the utility.~~

~~(d)(e)~~ In the event of a non-registering or a meter for which the test results are inconclusive ~~partially registering meter~~, unless the provisions of subsection ~~(5)(3)~~ of this rule apply, the utility may bill the customer on an estimate based on previous bills for similar usage or on other sources of available data provided.

~~(3)~~ It shall be understood that when a meter is found to be in error in excess of the prescribed limits, the figure to be used for calculating the amount of refund or charge in subsection (1) or paragraph ~~(2)(b)~~ above shall be that percentage of error as determined by the test.

~~(5)(4)~~ No change.

~~(6)(5)~~ No change.

Specific Authority 366.05(1) FS.

Law Implemented 366.03, 366.041(1), 366.05(1), (3), (4), 366.06(1) FS.

History—New 7-29-69, Amended 4-13-80, 5-3-82, \_\_\_\_\_.



Submit FAW Notices

**Step 5: Acknowledgement of Submittal**

The Administrative Code and Weekly Unit has received your notice for publication in the FAW.

A confirmation number has been provided below which may be used to reference this submittal in any communications with the Unit. Use the your browser *'Print'* button or the *'Print this Acknowledgement'* button at the bottom of this page to generate a receipt for your records. A record of this transmittal will be maintained for approximately 30 days and may be accessed from the 'Submittal Listing' item in the FAW Online menu on the left of this page.

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