State of Florida

Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: July 31, 2018

TO: Carlotta S. Stauffer, Commission Clerk, Office of Commission Clerk

FROM: Samantha Cibula , Office of the General Counsel SMC

RE: Docket No. 20060121-EI

Please file the attached materials in the docket file listed above.

Thank you.

Attachment

PRELIMINARY COMMENTS OF PROGRESS ENERGY FLORIDA ON STAFF'S PROPOSED METER TESTING RULE DEVELOPMENT

Progress Energy Florida submits its preliminary comments on Staff's proposed rule development on amendments to the meter testing provisions of Rules 25-6.022, 25-6.05, 25-6.05, 25-6.05, 25-6.05 and 25-6.05. These comments are presented in the form of italicized inserts following the applicable provisions of the proposed rule development. Progress Energy wishes to emphasize that its comments are very preliminary in nature and will be revised and supplemented during the course of this proceeding based on its ongoing review of Staff's proposal, the comments submitted by other interested persons, and other information that may become available.

Staff's Proposed Rule Development

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. For equipment tested under Rule 25-6.059, any record of a previous accuracy test must be retained by the utility until after any 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) – (4)(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 Test Procedures and Accuracies of Consumption Metering Devices.

(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 percentage registration is not more than 102 percent nor less than 98 percent, calculated in accordance with Rule 25-6.058, F.A.C.

(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 throughout the range of~~, when tested at any point between~~ 25 percent and 100 percent of full-scale ~~value~~.

(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 throughout the range of~~, when tested at any point between~~ 10 percent and 100 percent of full-scale ~~value~~.

COMMENT: PEF is concerned with the use of the phrase "throughout a range" rather than using a predetermined set of points. The phrase could be interpreted as meaning that a test must be made at every percentage point between 10 and 100 percent. The specific percentage points at which tests are to be made should be identified for consistency purposes.

(c) No change.

(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~~1995~~), which is incorporated into this rule by reference.

(c) 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~~1995~~. Demand registration need not be tested, provided the meter has been inspected to contain the correct demand algorithm whenever watthour registration is tested.

(4) – (b) 4. No change.

5. Description of the general steps involved.

(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.

COMMENT: PEF believes the term "meter type" should be better defined. Meter type is a term used loosely in the industry and may distinguish minor differences between meters that have no relevance to the appropriate test procedures.

(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) No change.

(4) All metering equipment listed in Rule ~~paragraph~~ 25-6.052(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 which are statistically sample tested by the utility under an approved Random Sampling Plan, as set forth in subsection (8); and

(b) – (5)(c) 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 full-scale value.

(7)~~(6)~~ In-Service Testing.

(a) – (b) No change.

(c) The utility shall supplement its in-service tests of metering equipment by operating a program to analyze customer billing records and any other information regarding customers' consumption, for the purpose of detecting and investigating abnormally high or low electric bills. The utility's procedures for doing this shall be set forth in its meter testing plan on file with the Commission.

COMMENT: PEF believes that a program for "detecting and investigating abnormally high or low electric bills" is an inappropriate requirement for the Commission's meter testing rules. Meter errors account for only a very small portion of abnormally high or low bills and an even smaller portion of high bill complaints. The vast majority of high bills and high bill complaints are due to extreme weather or meter reading errors, not fast meters. Low bills are most often the result of extreme weather or occupancy changes, rather than meter inaccuracies. PEF has had procedures in place for many years to identify meter-related problems that can lead to abnormal billings, such "zero consumption" checks for non-registering (stuck) meters and checks for large usage reductions in accounts with transformer-rated service installations. In addition, PEF is able

to identify the relatively few instances in which abnormally high bills are caused by meter inaccuracies with the algorithms used in the Company's analysis of high bills in general. However, it would be a mistake to assume that there is a sufficient correlation between abnormally high or low customer bills and meter errors to justify using billing records as a supplementary means for testing meter accuracy. PEF therefore suggests that the proposed paragraph (7)(c) should be deleted. Billing issues are properly addressed by the Commission's rules on that subject (see Chapter 25-6, Part VI, generally and 25-6.099 through 25-6.103 and 25-6.106 specifically).

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

(a) – 3. 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 Error.

The average meter error shall be determined as follows: ~~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 Error for Watt-hour Meters

(a)~~(1)~~ No change.

(b)~~(2)~~ If a single-phase 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)~~ (a) – (b) renumbered as 1. – 2. No change.

3.~~(c)~~ A single point, when calculating the error of a totally solid-state ~~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 poly-phase 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.

COMMENT: PEF suggests the proposed requirement that "The utility shall select the method that best fits the customer's usage pattern" for all meter tests performed under paragraph (1)(b) and (c) is unworkable and would become increasingly unnecessary. To begin with, the initial meter acceptance tests are performed at a time when there obviously is no customer usage pattern. For shop tests and field tests, the technician would be required to review the billing records of the account where the meter had been previously installed, to which the technician does not currently have access, and make a subjective

determination of the prior customer's usage pattern, for which the technician is not currently trained. In addition, utilities in general and PEF in particular are moving steadily towards the exclusive use of solid-state meters, which, as sub-paragraphs (b)3 and (c)2 recognize, have flat, or linear, accuracy curves irrespective of usage patterns that would render the proposed requirement completely unnecessary. Therefore, PEF suggests that the proposed addition to paragraphs (b) and (c) should be deleted..

1.~~(a)~~ No change.

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

(2) Average Meter Error for Demand Meters

(a) For tests performed to determine whether a meter meets the performance requirement of Rule 25-6.052(2)(a) or Rule 25-6.052(2)(b), for acceptance tests, in-service tests, or tests requested by customers, meter error shall be determined by testing the meter at both 40 percent and 80 percent of reference meter full-scale value, or as near to these two points as is practicable. The kilowatt readings on the meter being tested shall be denoted by M40 and M80, respectively, and the corresponding kilowatt errors shall be denoted by E40 and E80, respectively. These two pairs of results define a straight line relationship between the kilowatt readings on the meter being tested and the corresponding kilowatt errors.

1. For mechanical or lagged demand meters, the straight line determined by subsection (2)(a) above shall be used to estimate the kilowatt error of the meter at 25 percent of full scale and at 100 percent of full scale, both with respect to the meter being tested. The kilowatt errors shall be denoted by E25 and E100, respectively. The greater of the kilowatt errors E25 and E100 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(2)(a).

2. For electronic demand meters, the straight line determined by subsection (2)(a) above shall be used to estimate the kilowatt error of the meter at 10 percent of full scale and at 100 percent of full scale, both with respect to the meter being tested. The kilowatt errors shall be denoted by E10 and E100, respectively. The two kilowatt

errors E10 and E100 shall be expressed as a percentage of the corresponding reference meter kilowatt reading. The greater of these two percentages shall be used to determine if the meter meets the accuracy requirement of Rule 25-6.052(2)(b).

(b) For tests performed to calculate amounts to refund customers, or amounts by which to backbill customers whose meters are found to be in error according to Rule 25-6.052 (2)(a) or Rule 25-6.052(2)(b), meter error shall be determined as follows. Using the same linear relationship determined in Rule 25-6.058(2)(a) above, determine the kilowatt error at the point on the scale that represents the average billing demand over the refund period. The kilowatt error so determined shall be expressed as a percentage of the reference meter reading corresponding to the average billing demand and shall be used to determine the corrected billing demand for each month in the refund period.

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.

COMMENT: This proposed rulemaking presents one of the few opportunities, and the first since 1983, to review the adequacy of the $15 meter test deposit. Labor costs have escalated significantly since 1983, and since any shortfall between the deposit and actual cost of excessive and unnecessary meter tests must be borne by ratepayers in general, PEF suggest the Commission should take advantage of this infrequent opportunity to review, and update if necessary, the current $15 deposit.

(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~~1982~~). Where appropriate, the meter may be field tested. The customer shall be responsible for all the costs to the utility associated with a meter test by an independent meter testing facility. The utility shall provide a detailed estimate of such costs and may require payment of such costs prior to the actual meter test. If the meter is found to be running fast in excess of the limits established by these rules, such costs shall be refunded, but if within the allowable limits, the utility may retain 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,_____.

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June 30, 2005

VIA ELECTRONIC MAIL

Florida Public Service Commission
Betty Easley Conference Center
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

Re: FPL Initial Comments on Draft Revisions to Rules 25-6.022, 25-6.052, 25-6.056, 25-6.058, 25-6.059, and 25-6.060, F.A.C., Pertaining to Electric Meter Testing

Dear Ms. Cibula:

Florida Power & Light Company ("FPL") hereby submits its initial comments and recommendations on Staff's draft revisions to the meter test rules. A copy of the draft revised meter test rules, with FPL's suggested revisions in legislative format, is attached as Appendix A to this letter.

General - FPL suggests adding some key terms and definitions for clarity. For example, the terms electronic meter, mechanical meter, average meter error, billing error, watthour register, and demand register should be added;

Rule 25-6.022 – See minor edits in Appendix A;

Rule 25-6.052 – For consistency and clarity, FPL recommends using the term "electronic" throughout the rules, which is inclusive of solid state and totally electronic meters;

The rule should remain consistent with ANSI – several of the Staff proposals would make the rules inconsistent with ANSI, e.g., 25-6.052 (2) (a) and (b);

Rule - 25-6.056 – Regarding the requirement to group populations by full-scale value, FPL suggests using class amps and class volts in lieu of full-scale. FPL currently does not have the ability to identify its populations by full-scale value;

Rule 25-6.058 – FPL suggests clarifying that the purpose is to determine the error for billing purposes - after a meter has been determined to be out of tolerance;

FPL recommends clarifying the requirement to supplement meter testing with program to analyze bills for billing abnormalities – this should not be included in the meter accuracy/testing rules

Use the customer average test point in lieu of the "40% and 80%, straight-line method" FPL believes there is evidence that shows that errors do not occur in a "straight-line" manner. For electronic meters, attached as Appendix B to this letter are load curves produced by GE for 5C, 7C, and kV2C meters that show the lack of variation in error across their operating ranges. Additionally, for thermal meters, test results showed that testing the same meter at the same test point produced five different results and applying additional load to a thermal meter produced inconsistent and sometimes opposite results. We believe testing at the customer's load produces a more accurate representation of the billing error.

For electronic meters, use full load or the manufacturer's recommended test value as the test point;

Rule 25-6.059 – Utility meter test costs should be updated to reflect current costs;.

Rule 25-6.060 – No comments at this time.

Please contact me should you have any questions or wish to discuss.

Sincerely,

Natalie F. Smith

NFS:ec
Enclosure

cc: Mr. Roland Floyd
Mr. Sid Matlock

APPENDIX A

Florida Administrative Code- Rulemaking- FPL Revised:

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

(1) For fall 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. For equipment tested under Rule 25-6.059, any record of a previous accuracy test must be retained by the utility until after any 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 test; reason for the test; readings before and after the test; if meter creeps, a statement as to the rate of creeping; a statement of the "as found' accuracy; indications showing that all required checks; a statement of repairs made, it 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) Each utility shall keep a recorded for each unit of metering equipment showing the date the unit was purchased, if available; the utility's identification; associated equipment; essential name plate data; date of test; results of "as found" test; and location where installed with date of installation.

(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 make during the calendar or fiscal year, the following information:

(a) Type of equipment, including manufacturer, model number, and any feature that ~~which~~ will subsequently be used to classify the units purchased into a population of units for in-service tests

(b) The number of units purchase

(c) The total number of units tested

(d) The number of units tested measuring each percent registration recorded

(e) Average percent registration

(f) Standard deviation about the average percent registration (population of sample standard deviation);

(g) Results regarding whether the units tested meet the utility's acceptance criteria and

(h) If a utility does not perform its tests for incoming purchases, the data provided by equipment manufacturers concerning units tested on a 100 percent basis by the manufacturer, with the manufacturer's test results used as a basis for acceptance testing, shall also be retained.

(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 equipment 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 purchased into a population of units for in-service tests;
(b) The number of units purchase;
(c) The total number of units tested;
(d) The number of units tested measuring each percent registration recorded
(e) Average percent registration;
(f) Standard deviation about the average percent registration (population of sample standard deviation);
(g) Results showing whether the units tested under an approved random sampling program meet the utility's acceptance criteria and;
(h) A statement of the action to be taken to make further tests or replace inaccurate units, when the units tested under an approved random sampling program do not meet the acceptance criteria.
(i) The information regarding units tested during the year by not tested under a Random Sampling Plan or a periodic testing program need not be maintained as listed in paragraphs (4)(a) through (h) or be summarized on an annual basis.

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 Test Procedures and Accuracies of Consumption Metering Devices.

(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 percentage registration is not more than 102 percent nor less than 98 percent, calculated in accordance with Rule 25-6.058, F.A.C.

(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 ~~throughout the range of~~, when tested at any point between 25 percent and 100 percent of full-scale.

(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 ~~throughout the range of~~, when tested at full-load or at the manufacturer's recommended test point. ~~any point between 10 percent and 100 percent of full-scale value.~~

(c) Demand meters shall indicate zero under no-load conditions.

(3) Meter Equipment Test Procedures.

(a) The test of any unit of metering equipment shall consist of a comparison of its accuracy with the accuracy of a standard.

(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), that ~~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. Demand registration need not be tested, provided the meter has been inspected to contain the correct demand algorithm whenever watthour registration is tested.

(4) Test Procedures.

(a) Each utility shall submit its test procedures for review and approval for all types of metering equipment, including:

1. Single-phase watthour meters;
2. Polyphase watthour meters;
3. Demand meters;
4. Pulse initiating meters;
5. Pulse recorders;
6. Time-of-use meters; and
7. Instrument Transformers.

(b) Test procedures shall contain the following for each type of metering device covered:

1. Adjustment limits;
2. Test points;
3. Test duration;
4. Type of test - single-phase test, polyphase test, etc.; and
5. Description of the general steps involved.

(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 subsections (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.

Specific Authority: 366.05(1), F.S.

Law Implemented: 366.05(3), F.S.

History: Amended 7- 29 - 69, formerly 25-6.52, Amended 05 – 19- 97.

APPENDIX A

25-6.056 Metering Device Test Plans.

(1) The test of any unit of metering equipment shall consist of a comparison of its accuracy with a standard of known accuracy. Units not meeting the accuracy or other requirements of Rule 25-6.052 at the time of the test shall be corrected to meet such requirements and adjusted to within the required accuracy as close to 100 percent accurate as practicable or their use discontinued.

(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(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) When they are suspected by the utility of being inaccurate or damaged.

(5) Acceptance Testing. Tests for all new units of metering equipment may be performed according to one of three plans:

(a) On a 100 percent basis, with testing performed by the utility;

(b) On a statistically sampled basis under an approved Random Sampling Plan, with testing performed by the utility; or

(c) On a 100 percent basis, with testing performed by the manufacturer and the test results for each unit provided by the manufacturer and maintained by the utility.

(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 amps and class volts. ~~full-scale value.~~

(7) In-Service Testing.

(d) In-service metering devices may be sample tested under an approved Random Sampling Plan.

(e) 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.

~~(f) The utility shall supplement its in-service tests of metering equipment by operating a program to analyze customer billing records and any other information regarding customers' consumption, for the purpose of detecting and investigating abnormally high or low electric bills. The utility's procedures for doing this shall be set forth in its meter testing plan on file with the Commission.~~

(8) Random Sampling Plans Submitted for Approval.

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

(g) 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 that ~~which~~ they were approved.

(h) Each Random Sampling Plan submitted for approval shall include, at a minimum, the following information:

1. Plans to more closely monitor populations of equipment in service for which estimates indicate accuracy problems, to determine if units in the population need to be adjusted or replaced (in-service sampling plans).
2. A statement of the plan's statistical design and the rationale for using the plan in lieu of testing 100 percent of the units in the population.
3. A precise statement of the plan's null hypothesis and alternative hypotheses, the probability of committing Type I error and Type II error, and the criteria for accepting or rejecting the null hypothesis.

(i) "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.

(6) The analysis of a proposed Random Sampling Plan, or a proposed periodic in-service testing schedule where applicable, shall include assessments of the plan's ability to detect the presence of inaccurate equipment, the economy of testing only a sample of the units in the population, the impact of having inaccurate units used for billing purposes, the number of units in the population, and the historical performance of the type of equipment covered by the proposed plan.

(7) Approval of Sampling Plans and In-Service Testing Schedules. All utilities subject to this rule shall submit to the Commission's Division of Electric and Gas 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 prior pursuant to subsection (11) to their use.

(8) 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 Electric and Gas 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), F.S.

Law Implemented: 366.05(3), F.S.

History: 7/29/69, Amended 4/13/80, formerly 25-6.56, Amended 05/19/97.

25-6.058 Determination of Average Billing ~~Meter~~ Error.

~~The average meter error shall be determined as follows~~: Whenever a metering installation is tested and found to exceed the accuracy limits (see 25-6.052), the average billing error shall be determined in one of the following ways:

(1) Average Billing ~~Meter~~ Error for Watthour Registers ~~Meters~~

(a) 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.

(b) If a singlephase electromechanical meter ~~metering installation~~ is used on a varying load, the average billing 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) The weighted algebraic average of the error at approximately 10 percent and at 100 percent of the rated test amperes for the meter, the latter being given a weight of four times the former;

(2) The simple average of the error at approximately 10 percent and at approximately 100 percent of the rated test amperes of the meter, each being given an equal weight; or

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

(c) If a polyphase electromechanical meter ~~metering installation~~ is used on a varying load, the average billing 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) The weighted algebraic average of its error at light load (approximately 10 percent rated test amperes) given a weight of one, its error at heavy load (approximately 100 percent rated test amperes) and 100 percent power factor given a weight of four, and at heavy load (approximately 100 percent

rated test amperes) and 50 percent lagging power factor given a weight of two; or

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

(2) Average Billing ~~Meter~~ Error for Demand Registers ~~Meters~~

(a) For mechanical or lagged demand registers, that fail to meet the accuracy ~~For tests performed to determine whether a meter meets the performance~~ requirements of Rule 25-6.052(2)(a) or Rule 25-6.052(2)(b), the average billing error of the demand register shall be determined separate from the average watthour register. For ~~acceptance tests, and or~~ tests requested by customers or any in-service test, the average billing error of the ~~meter~~ demand register ~~error~~ shall be determined by testing the meter at the customer's most recent 24 month average load calculated as a percent of reading. ~~both 40 percent and 80 percent of reference meter full-scale value, or as near to these two points as is practicable. The kilowatt readings on the meter being tested shall be denoted by M40 and M80, respectively, and the corresponding kilowatt errors shall be denoted by E40 and E80, respectively. These two pairs of results define a straight line relationship between the kilowatt readings on the meter being tested and the corresponding kilowatt errors.~~ For new acceptance test, the average demand billing demand error analysis is not required. ~~and in-service sample tests, demand register error shall be determined by testing the meter at the full-load or manufacturer's recommended test value.~~

~~(2) For mechanical or lagged demand meters, the straight line determined by subsections (2) (a) above shall be used to estimate the kilowatt error of the meter at 25 percent of full scale and at 100 percent of full scale, both with respect to the meter being tested. The greater of the kilowatt errors E25 and E100 shall be expressed as a percentage of~~

~~the full-scale value of the meter being tested to determine if the meter meets the accuracy requirements of Rule 25-6.052(2)(a).~~

(b). For electronic demand meters that do not meet the accuracy requirements of 25-6.052 (3) (c), and ~~tests performed to determine whether a meter meets the performance requirement of Rule 25-6.052(2)(b) For acceptance tests, or~~ tests requested by customers or any in-service test, the average billing error ~~of the meter demand register error~~ shall be determined by testing the meter at the full load or manufactuer's recommended test value. ~~the straight line determined by subsection (2)(a) above shall be used to estimate the kilowatt error of the meter at 10 percent of full scale and at 100 percent of full scale, both with respect to the meter being tested. The kilowatt errors shall be denoted by E10 and E100, respectively. The two kilowatt errors E10 and E100 shall be expressed as a percentage of the corresponding reference meter kilowatt reading. The greater of these two percentages shall be used to determine if the meter meets the accuracy requirement of Rule 25-6.052(2)(b).~~ For new meter acceptance test, the average demand billing error analysis is not required.

(b) ~~For tests performed to~~ To calculate the amounts to refund customers, or to adjust the accounts of ~~amounts by which to backbill~~ customers whose meters are found to be in error according to Rule 25-6.052 (2)(a) or Rule 25-6.052(2)(b), ~~the meter billing error shall be determined from~~ the Average ~~Meter~~ Billing Error for Watthour Registers and the Average ~~Meter~~ Billing Error for Demand Registers, if applicable, ~~as follows. Using the same linear relationship determined in Rule 25-6.058(2)(a) above, determine the kilowatt error at the point on the scale that represents the average billing demand over the refund period. The kilowatt error so determined shall be expressed as a percentage of the reference meter reading corresponding to the average billing demand and~~ shall be used to determine the corrected billing ~~demand~~ for each month in the refund period.

Specific Authority: 366.05(1), F.S.

Law Implemented: 366.05(3), F.S.

History: 7/29/69, formerly 25-6.58, Amended 05/19/97.

25-6.059 Meter Test by Request.

(1) Upon request of a customer, the utility shall, without charge, make a test of the accuracy of the meter in use at his premises provided that the meter has not been tested by the utility or the Commission within twelve (12) months previous to such request. This may be a shop test.

(2) Should any customer request a meter test more frequently than provided for in (1) of this rule, the utility may require a deposit to defray cost of testing, such deposit not to exceed TBD ~~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 below the allowable limit, the deposit may be retained by the utility as a service charge for conducting the test.

(3) If the customer so desires, he or his authorized representative shall have the privilege of witnessing the test. A written report giving the results of the test shall be furnished the customer upon request.

(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 minimum, conform to the requirements of the American National Standard Code for Electricity Metering, Seventh Edition (ANSI C12.1 2001). Where appropriate, the meter may be field tested. The customer shall be responsible for all the costs to the utility associated with a meter test by an independent meter testing facility. The utility shall provide a detailed estimate of such costs and may require payment of such costs prior to the actual meter test. If the meter is found to be running fast in excess of the limits established by these rules, such costs shall be refunded, but if within the allowable limits, the utility may retain the costs.

(5) The utility may, at its discretion, conduct its own test of the meter in conformance with the testing standards established by these rules. In the event that separate tests of the same meter conflict as to whether the meter meets the accuracy standards established by these rules, at the request of the utility or the customer, the Commission will resolve the matter.

Specific Authority: 366.05(1), F.S.

Law Implemented: 366.05(4)(5), 366.05(3), F.S.

History: New 7/29/69, Amended 10/11/83, formerly 25-6.59.

APPENDIX A

FPL suggests that a number of terms be defined. FPL suggests the following definitions:

- Electronic Meter – Any meter that measures usage and computes registration using electronic components only.
- (Note – This includes the terms "solid-state" and "totally electronic")
- Mechanical Meter – Any meter that measures usage by mechanics and displays the usage on a mechanical register.
- Meter Accuracy Error – The extent to which a given measurement agrees with the defined value.
  (Note – This includes the terms "meter accuracy," "accuracy limits," "percentage registration," "percent full-scale error," "percent readings error.")
- Average Meter Error – The percentage of registration over the operating range of the meter.
- Billing Error – The amount of correction or billing adjustment to be made as a result of a Meter Accuracy Error.
- Watthour Register – The portion of the meter that only records watthour registration.
- Demand Register – That portion of the meter that only records demand registration.
- Average Billing Error as a Percent of Reading –

$$\frac{\text{Meter under Test – Std. Meter Reading}}{\text{Standard Meter Reading}} \times 100\%$$

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June 30, 2005

HAND DELIVERED

Ms. Samantha Cibula
Office of General Counsel
Florida Public Service Commission
Room 301D – Gerald L Gunter Building
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Proposed Amendments to Meter Testing Rules

Dear Ms. Cibula:

Enclosed are Tampa Electric Company's Comments to Proposed Rule Amendments Pertaining to Electric Meter Testing.

Sincerely,

Lee L. Willis

LLW/pp
Enclosure

Tampa Electric Company Comments to
Proposed Rule Amendments Pertaining to Electric Meter Testing

Rule 25-6.022

Discussion: The apparent intent of the language added in lines 4, 5, and 6 is to ensure that utilities do not destroy previous metering device accuracy tests when a metering device is to be tested due to a customer request. However, from the wording in line 5, it is possible to contend that a customer complaint or request would require the utility to produce any and all previous tests of the metering device in contention.

Recommendation: Change the wording of line 5.

"When equipment accuracy testing is required under Rule 25-6.059, any record of accuracy testing for the disputed equipment that is on file at the time of the customer request made under Rule 25-6.059 must be retained by the utility until the dispute is resolved."

Rule 25-6.052

Discussion: The proposed language cleans up and clarifies several problems in the paragraph but leaves ambiguities such as "full-scale value" intact. There is also a question about the interpretation of testing "throughout the range of 25 percent and 100 percent of full-scale." The proposed additions to Rule 25-6.058 and the example of error correction formulas involve 40 percent and 80 percent of the metering device's intended use range.

Recommendation: Change to incorporate the proposed wording for error correction into Rule 25-6.052. Use wording such as "manufacturer's intended use range" or "full-scale as intended by the manufacturer" in the place of "full-scale value."

25-6.056(6)

Discussion: The added subsection (6) of the Rule is wordy and somewhat confusing.

Recommendation: Reword Rule 25-6.056(6) as follows: "Each metering device population of an approved sampling plan or periodic test plan shall consist of like devices, having the same intended use range or full-scale as intended by the manufacturer."

Rule 25-6.056(7)(c)

Discussion: The apparent intent of the added subsection (7)(c) is to identify and remove meter devices that perform poorly faster than is possible through the sole use of a random sample test program. However, there are too many human factors that can affect a customer's bill for the analysis of customer billing records to effectively isolate problems due to metering device accuracies. These human factors could include but are not limited to a customer experiencing a problem with installed heating or air conditioning equipment, a customer on an extended vacation where the bill would indicate low consumption, a meter reader transposing the digits of a meter reading indicating low or high consumption, or a customer having construction work done at his or her premise. Another concern with this subsection is that there are no stipulations on timeliness or comparison timeframe for the detection or investigation of an abnormally high or low electric bill, and the proposed addition does not define or provide any guidance as to what would constitute an abnormally high or low electric bill.

Recommendation: Remove and discard the proposed subsection (7)(c) of Rule 25-6.056.

Rule 25-6.058(2)(a)

Discussion: The proposed language is good, but the values used to determine the Average Meter Error for Demand Meters are different than those listed in Rule 25-6.052 and could lead to confusion and higher testing costs due to having to test a demand meter multiple times.

Recommendation: Use the same values for both Rule 25-6.052 and Rule 25-6.058.

Rule 25-6.058(2)(b)

Discussion: The proposed language is good, but the subsection pertains to Adjustment of Bills for Meter Error and really belongs in Rule 25-6.103 or closer to it. Having this subsection included in the Rules of the Florida Administrative Code (FAC) related to the accuracy testing of metering devices and not contained or adjacent to Rules related to billing breaks the continuity of the FAC and could possibly lead to confusion and oversight.

Recommendation: Move the proposed subsection (2)(b) of Rule 25-6.058 to Rule 25-6.103 or create a new Rule in the area of the FAC that pertains to Adjustment of Bills for Meter Error to maintain the continuity of FAC as written.

Rule 25-6.059(4)

Discussion: The wording of subsection (4) of Rule 25-6.059 is somewhat confusing in that the "customer shall be responsible for negotiating and paying for all costs to the utility associated with a meter test by an independent meter testing facility," but the following sentence states, "The utility shall provide a detailed estimate of such costs and may require payment of such costs prior to the actual meter tests." There is a further question about a refund of customer expenses should the meter be found to be running fast in excess of established limits. This begs the question, "Should the utility only be responsible for refunding the utility's costs associated with the independent test or should the utility be responsible to refund all costs of the independent test to the customer?"

Recommendation: Rewrite 25-6.059(4) to clarify customer costs, utility costs, and refund to customer should the meter be found to be running fast in excess of established limits.

Change the sentence of 25-6.059(4) which reads, "The customer shall be responsible for all costs to the utility associated with a meter test by an independent testing facility" to read, "The customer shall be responsible for all costs incurred by the utility related to a meter test by an independent testing facility."

Change the sentence of 25-6.059(4) which reads, "The utility shall provide a detailed estimate of such costs and may require payment of such costs prior to the actual meter test" to read, "The utility shall provide a detailed estimate of costs the utility expects to incur related to the meter test and may require payment of such costs prior to the actual meter test." Add a follow sentence to read, "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."

Change the sentence of 25-6.059(4) which reads, "If the meter is found to be running fast in excess of the limits established by these rules, such costs shall be refunded, but if within the allowable limits, the utility may retain the costs" to read, "If the meter is found to be running fast in excess of the limits established by these rules, any payments collected by the utility related to the meter test shall be refunded, but if the meter is found to be within the limits established by these rules, the utility may retain any payments collected by the utility related to the meter test."

Rule 25-6.060

Discussion: No comments.

Linda G. Malone
Assistant Secretary and
Assistant Treasurer

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GULF POWER
A SOUTHERN COMPANY

June 29, 2005

Ms. Samantha Cibula
Florida Public Service Commission
Office of the General Counsel
2540 Shumard Oak Boulevard
Tallahassee FL 32399-0870

Dear Ms. Cibula:

RE: Electric Meter Testing

Attached are Gulf Power Company's comments in response to the Notice of Proposed Rule Development Issued May 11, 2005 relating to Rule 25-6.022, 25-6.052, 25-6.058, 25-6.059 and 25-6.060, F.A.C.

Please call Terry Davis at 850-444-6253 if you have any questions.

Sincerely,

Linda G. Malone

db

Enclosure

cc: Beggs and Lane
Jeffrey A. Stone, Esquire
Robert G. Livingston

Gulf Power Company's Comments

RE: Notice of Proposed Rule Development issued May 11, 2005 related to Rules 25-6.022, 25-6.052, 25-6.056, 25-6.058, 25-6.059, and 25-6.060, F.A.C., Pertaining to Electric Meter Testing

June 29, 2005

Purpose of Memorandum

The purpose of this Memorandum is to summarize Gulf Power Company's comments related to the above-referenced Notice of Proposed Rule Development (NPRD) issued May 11, 2005.

Rule 25-6.022, Record of Metering Devices and Metering Device Tests

Gulf Power Company has no comments on the suggested revisions to 25-6.022 at this time.

Rule 25-6.052, Test Procedures and Accuracies of Consumption Metering Devices

Changes to (2)(a)

Gulf Power Company suggests that this revision not be made. The original wording of this rule was exactly as ANSI C12.1.2001. As revised, this provision does not comply with section 5.2.1.1 of the above-referenced ANSI standard.

Changes to (2)(b)

Gulf Power Company suggests that his revision not be made per the explanation in (2)(a) above.

Changes to (3)(b), (3)(c), (4)(c), and (4)(d)

Gulf Power Company has no comments on the suggested revision at this time.

Rule 25-6.056, Metering Device Test Plans

Changes to (2)

Gulf Power Company has no comments on the suggested revision at this time.

Changes to (4)

Gulf Power Company has no comments on the suggested revision at this time.

Changes to (6)

Reference test plans will be the same for all mechanical demand meters no matter what the full scale value.

Changes to (7)(c)

Gulf Power Company already has a program in place to flag high or low consumption for investigation. Gulf Power Company does not have a comment on the proposed revision at this time, but suggests this issue might be better addressed in another rule since this provision relates to billing and not meter testing.

Changes to (10) and (11)

Gulf Power Company has no comments on the suggested revision at this time.

Rule 25-6.058, Determination of Average Meter Error

General comments addressing suggested revisions to 25-6.058 include:

- The suggested revisions vary from the current ANSI Standards.
- Electronic Meters should be tested at only one point as defined by ANSI.
- The suggested revisions are vague in differentiating between Meter Error and Meter Accuracy.
- Practical issues associated with the proposed rule include possible software changes to our test systems and a longer time to perform the meter tests.

Rule 25-059, Meter Test by Request

Gulf Power Company has no comments on the suggested revisions to 25-6.059 at this time.

Rule 25-6.060, Meter Test Referee

Gulf Power Company has no comments on the suggested revisions to 25-6.060 at this time.