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

DATE: January 20, 2005

TO: Director, Division of the Commission Clerk & Administrative Services (Bayó)

FROM: Office of the General Counsel (C. Keating)
Division of Economic Regulation (Floyd, Kummer, Wheeler)
Division of Regulatory Compliance & Consumer Assistance (Mills)

RE: Docket No. 030623-EI – Complaints by Ocean Properties, Ltd., J.C. Penney Corp., Target Stores, Inc., and Dillard's Department Stores, Inc. against Florida Power & Light Company concerning thermal demand meter error.

AGENDA: 02/01/05 – Regular Agenda – Posthearing Decision – Participation is Limited to Commissioners and Staff

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

FILE NAME AND LOCATION: S:\PSC\GCL\GCO\WP\2003\030623\030623.RCM-FINAL.DOC

Case Background

On November 19, 2003, the Commission issued Order No. PSC-03-1320-PAA-EI in this docket as proposed agency action to resolve complaints made by Southeastern Utility Services, Inc. ("SUSI") against Florida Power & Light Company ("FPL") on behalf of six commercial retail electric customers concerning inaccuracies in the customers' thermal demand meters. SUSI, four of the customers it represents (Ocean Properties, Ltd., J.C. Penney Corp., Dillards Department Stores, Inc., and Target Stores, Inc., collectively referred to as "Customers"), and FPL protested the Commission's proposed agency action and requested a formal administrative hearing on these matters.[1] Consequently, this matter was set for a formal administrative hearing

[1] Subsequently, by Order No. PSC-04-0591-PCO-EI, issued June 11, 2004, SUSI was dismissed as a party to this proceeding. The Commission affirmed this dismissal by denying SUSI's motion for reconsideration by Order No. PSC-04-0881-PCO-EI, issued September 8, 2004.

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which was held on November 4, 2004. This recommendation addresses each of the issues established in this docket by Order No. PSC-04-0933-PHO-EI, issued September 22, 2004. The Commission has jurisdiction over this matter pursuant to Chapter 366, Florida Statutes, including Sections 366.04, 366.05, and 366.06, Florida Statutes.

Discussion of Issues

Issue 1: Pursuant to Rule 25-6.052, Florida Administrative Code, what is the appropriate method of testing the accuracy of the thermal demand meters subject to this docket?

Recommendation: Staff interprets Rule 25-6.052, Florida Administrative Code, as requiring that the *demand portion* of the meters be accurate throughout the range of values between 25% and 100% of full scale. Rule 25-6.052 establishes the method for testing the accuracy of the *watthour portion* of these meters by reference to Rule 25-6.058, Florida Administrative Code. Rule 25-6.058(3)(a) provides the specific method for determining error for the watthour portion of the meters. Staff recommends that the testing already performed by FPL is appropriate to determine whether or not the meters subject to this docket pass or fail the accuracy requirements of the Commission's rules.

Staff makes the following specific recommendations on the eligibility for refunds for each meter subject to this docket:

- Meter #1V7166D failed the accuracy requirement for only the *watthour portion* of the meter. It was appropriately tested and, based on the undisputed test results, is eligible to receive a refund.

- Meter #1V5871D showed evidence of physical damage (bent maximum demand indicator). Based on record evidence, as discussed in the staff analysis below, this meter is eligible to receive a refund.

- Meter #1V5774D does not require further testing. It was tested at 40% of full scale and found to be slightly underregistering. Based on the test results, this meter is not eligible to receive a refund.

- The remaining eleven meters subject to this docket (#1V52093, #1V7179D, #1V52475, #1V5216D, #1V7001D, #1V5192D, #1V5025D, #1V7019D, #1V7032D, #1V5887D, #1V5159) were tested at 80% of full scale and failed the accuracy requirements of Rule 25-6.052(a) for the *demand portion* of the meters. These meters are eligible to receive a refund. (Floyd, C. Keating)

Staff Analysis:

Appropriate Method to Determine Meter Accuracy

The appropriate method for determining the accuracy of the *watthour portion* of the meters subject to this docket is not in dispute. Using the method specified in Rule 25-6.058(3)(a), only one meter in this docket demonstrated an unacceptable watthour registration error. As discussed below, the parties agree that that particular meter is eligible for a refund.

With respect to determining the accuracy of the *demand portion* of the meters subject to this docket, both parties, as well as staff witness Matlock, offer differing interpretations of Rule 25-6.052(2)(a), Florida Administrative Code, which states that:

> 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.

FPL witness Bromley argues that the rule allows the company to test a thermal demand meter at any point between 25% and 100% of the meter's full-scale value. [TR 13] Staff witness Matlock suggests that a test point be selected for each meter based on the peak kW usage experienced by the meter in the preceding 12 months. [TR 269] Customers witness Gilmore argues that the rule requires that a meter's performance must be within the allowable tolerance when tested anywhere within 25% and 100% of full-scale value [Gilmore Supplemental Rebuttal Testimony, p. 2] Staff agrees with witness Gilmore that the rule requires that the meter be accurate throughout the range of values between 25% and 100% of full-scale.

Staff witness Matlock and Customers witness Gilmore point out that the results of testing are dependent upon the test point selected. [TR 268, 269, Gilmore Supplemental Rebuttal Testimony, pp. 2-3] This is clearly demonstrated by the data shown in Hearing EXH 1 (Document No. DB-4, page 1 of 1). This table shows that in every single case when the meter was tested at both 40% and 80% of full-scale value, the error at 80% was higher - usually significantly higher - than the error at 40%.

Staff agrees with Customers that Rule 25-6.052 does not give any guidance on an appropriate method of testing to determine whether a meter meets accuracy requirements. The rule specifies only the criterion that meters be accurate within +/- 4%, but does not specify a method for testing whether that accuracy criterion has been met. It is certainly not practical to test a meter over the continuum of all points between 25% and 100% of full-scale value. Witness Gilmore testified that the only way to satisfy the requirements of the rule is to test the meter at the highest practicable percent of full-scale. [Gilmore Supplemental Rebuttal Testimony, p. 4] Staff points out, however, that there is data in the record that suggests it is possible for the error measured at a lower point on the scale to be higher than the error measured at full scale. [TR 174, EXH 7 (Exhibit GB-3)] Exhibit GB-3 includes an April 5, 1982, letter from a manufacturer of thermal demand meters, Landis & Gyr, stating that the effects of an error at no load will be approximately inversely proportional to the scale deflection. Thus, testing at the highest practicable percent of scale will not always accurately capture the error experienced by the customer.

One practical way to comply with the rule is to test the meter at 40% of full scale as well as at 80% of full scale. Then, using the data from these two test points, the error at all other points on the scale could be estimated by simple straight-line interpolation. Witness Matlock used this interpolation method for a single point on the scale representing a customer's maximum billing demand for the refund period, but the same idea could be used for any point on the scale. [Hearing EXH 15 (SWM 2)] The April 5, 1982, letter from Landis & Gyr discussed above also uses linear interpolation to determine the error at the customer's load. [See pages 2 and 3 of the letter and the chart attached to the letter.] As explained below, however, it is not necessary to perform further testing on the meters subject to this docket to determine whether these meters are eligible for a refund.

Eligibility of Specific Meters for Refund

Meter #1V7166D

Both parties agree with the test results for the *watthour portion* of Meter #1V7166D. This meter had a registration error of 2.08%, which is in excess of the 2% allowed by Rule 25-6.052(1). [TR 43, EXH 1 (Document No. DB-4, page 1 of 1), TR 155, 156] Thus, this meter is eligible for a refund for watthour overregistration.[2]

Meter #1V5871D

This meter has a bent maximum demand pointer. This causes the instantaneous demand pointer to strike the maximum demand pointer prematurely, causing an erroneous deflection of approximately + 2.5 divisions on the scale of the meter. [TR 171] Two and a half divisions of the scale corresponds to 30 kilowatts of demand, or 3.57% of full-scale value. In five tests of this meter at approximately 61% of full scale, the results varied from 3.14% to 3.57% of full-scale value. [EXH 1(Document No. DB-4, page 1 of 1)] Witness Brown's direct testimony in this case shows an error of 6.7% of full-scale value for this meter. [TR 155] However, witness Brown conceded on cross-examination that the 6.7% figure was not a test result, but a number that was agreed to by the parties as part of failed settlement discussions. [TR 204]

Although none of the tests of this meter resulted in an error of more than 4% of full-scale value, staff believes that this meter should be eligible for a refund for the following reasons. First, customers of FPL should have their electric service measured by a meter that is free of physical damage. Second, the physical damage to this meter causes a definite positive bias of approximately 30 kilowatts of demand. This means that any errors from other sources could easily cause the meter to exceed the 4% accuracy required by Commission rules. Therefore, staff believes the customer using this meter is eligible for a refund.

Meter #1V5774D

Customers state that this meter was mistakenly included in their petition for a formal hearing in this docket. [See Motion to Amend Petition for Formal Administrative Hearing, Paragraph 3, filed on September 8, 2004.] Witness Brown did not discuss this meter in his testimony nor did he include this meter in the table summarizing the refunds he is proposing for Customers. [TR 164] The test results for this meter show that it was slightly underregistering for both kilowatt-hours and demand (-0.48% and -0.03%, respectively). [EXH 1 (Document No. DB-4, page 1 of 1)] Therefore, this meter is not eligible for a refund.

[2] This meter did not violate the accuracy requirement for the demand portion of the meter and Customers have not asked for a refund regarding the demand portion of the meter.

Meters #1V52093, #1V7179D, #1V52475, #1V5216D, #1V7001D, #1V5192D, #1V5025D, #1V7019D, #1V7032D, #1V5887D, #1V5159)

All of these meters failed the 4% accuracy requirement when tested at 80% of full-scale value. One of the meters also failed the 4% accuracy requirement when tested at 40% of full-scale value. [EXH 1(Document No. DB-4, page 1 of 1)] Although FPL does not agree that it was required to test these meters at 80% of full-scale value, it nevertheless agreed to do so and is recommending refunds to customers for these meters based on the results of the 80% test. [TR 46, 113, 114] Both parties agree, based on the tests that have been conducted by FPL, that these meters are eligible for a refund.

Issue 2: Pursuant to Rules 25-6.058 and 25-6.103, Florida Administrative Code, what is the appropriate method of calculating customer refunds for those thermal meters which test outside the prescribed tolerance limits?

Recommendation: To calculate the appropriate refunds for overregistration by the *demand portion* of these meters, staff recommends a procedure, set forth in detail in the staff analysis, by which the demand error at the customer's average load is estimated by using the linear relationship determined by the demand errors at two points on the meter scale.

To calculate the appropriate refunds for overregistration by the *watthour portion* of these meters, the procedure specified in Rule 25-6.058(3)(a) is the appropriate method. Using the percent error as determined by Rule 25-6.058(3)(a), an adjusted bill would be calculated in a manner similar to that outlined in Steps 6 through 9 of the procedure recommended herein to calculate refunds for overregistration by the demand portion of the meter. (Floyd, C. Keating)

Staff Analysis:

Calculation of Refunds for Demand Overregistration

FPL witness Bromley argues that customer refunds for demand overregistration should be based on the error of the meter expressed as a percentage of full-scale value. [TR 45] Recognizing that Rule 25-6.103(1), Florida Administrative Code, only addresses the watthour portion of the meter, witness Bromley relies on Rule 25-6.103(3) for justification. He testified that this rule makes it clear that when a meter is found to be in excess of described limits, the refund or the charge is to be based on the error as determined by the meter test. He concludes that the meter test referenced in Rule 25-6.103(3) must refer to the performance requirements of Rule 25-6.052. Staff disagrees with this rule interpretation.

Rule 25-6.103(3) states:

> 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.

Both subsection (1) and paragraph (2)(b) of the rule refer to refunds or backbills as determined by Rule 25-6.058. Staff witness Matlock discussed in detail that Rule 25-6.058, while providing a clear method for calculating the amount billed in error for the *watthour portion* of these meters, does not clearly provide an appropriate method for determining the amount billed in error for the *demand portion* of these meters. [TR 271-272] Thus, the Commission's rules are, at the very least, ambiguous regarding the proper method to determine refunds for demand meters.

Customers agree that the Commission's rules do not specifically address how the demand portion of the thermal demand meters subject to this docket should be tested for purposes of calculating a refund. [TR 168] Moreover, both Staff witness Matlock and Customers witness Brown give examples which show that under witness Bromley's interpretation of the rule, i.e.,

using errors as a percent of full-scale value to calculate amounts billed in error due to demand overregistration, customers would not be made whole. [TR 172-173, 273].

Customers witness Brown proposes that refunds be based on the actual change in demand registration that has occurred following the replacement of the inaccurate thermal demand meters with electronic demand meters. [TR 163-165] The results of witness Brown's calculations are contained in Hearing EXH 6 (see Tab 5 of 6 of witness Brown's Direct Testimony). Staff recommends that witness Brown's proposal be rejected, because it is inconsistent with the Commission's rules.

Staff agrees with FPL witness Morley that there is no basis in the Commission's rules for supporting Customers' proposed method of calculating refunds. [TR 118] As noted above, staff recognizes that there is ambiguity in the rules and that a clear method for determining the amount billed in error for the *demand portion* of these meters is not specified in the rules. However, Rule 25-6.103(3), cited above, states that any refund should be based on "that percentage of error determined by *the test*." (Emphasis added.) Thus, staff believes that the Commission's rules clearly intend that any refund be based on the results of a meter test.

Further, staff agrees with witness Morley that there are two technical flaws in witness Brown's proposed method. [TR 118, 119] Witness Brown calculates an average demand for each customer before and after meter replacement. However, the average demand before meter replacement is based on 12 months and the average demand after meter replacement is based on 16 to 22 months, depending on the meter. The two averages are not consistent because the average after replacement, in effect, weights certain months more than others. For example, meter #1V5192D shows an average meter error of 10.62% for the 18 months following meter replacement. [Hearing EXH 6 (Tab 5)] If 12 months had been used to conduct a month-to-month comparison with the previous 12 months, the average meter error following replacement would have been 7.63%.

The second technical flaw is that witness Brown's proposed method does not take into account that some customer loads were already trending downward before meter replacement. [TR 118]. This trending action can be observed most clearly from witness Gilmore's rebuttal testimony. [Hearing EXH 16 (BG-3)] Five of the fourteen charts he presents show that a downward trend in the plotted ratios of kilowatt-demand to energy consumption already existed before meter replacement. An additional five charts show that the plotted ratios of kilowatt-demand to energy consumption following meter replacement are not outside of the control limits in witness Gilmore's statistical analysis, as discussed in greater detail in Issue 5.

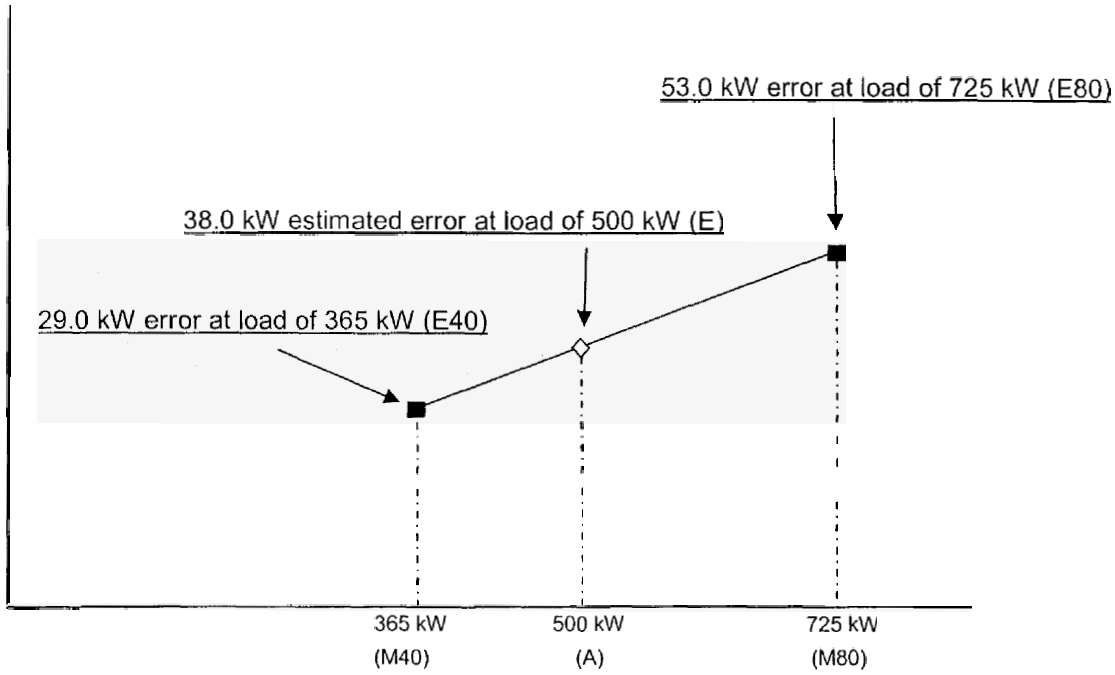
Staff witness Matlock proposes that the eligible meters be re-tested at the customers' average billing demand for the refund period to determine the percentage error for purposes of calculating a refund. Witness Matlock proposes that the test point error be used rather than the full-scale error, because he believes, as discussed above, that use of the full-scale error does not make the customer whole. Staff agrees that using the percentage error based on the test point rather than the full-scale value better serves the purpose of making the customer whole.

Since eight of the meters at issue in this docket have already been tested at two points, it is not necessary to test those meters for a third time. The straight-line interpolation method

provided in Staff witness Matlock's SWM-2 [Hearing EXH 15] can practically and easily be used to determine the percentage error for the twelve meters eligible for a refund for inaccurate demand readings. However, instead of using the maximum demand over the refund period, as witness Matlock proposes, staff recommends that the average demand be used. Staff believes that using the average demand better reflects a customer's actual usage. FPL witness Bromley also recommends an average demand be used in the modified procedure that FPL is currently using, although his modified method uses a two-year average rather than the average over the refund period. [TR 41-43].

Staff recommends using a straight-line interpolation method similar to and consistent with the method proposed by Landis & Gyr in its letter of April 5, 1982. [Hearing EXH 7, GB-3] In that letter, two separate linear interpolations are used, one to determine the effect of the zero adjustment error at the customer's load point, and one to determine the full-scale adjustment error at the customer's load point. Staff recommends using a single linear interpolation using the test results that are available from the two test points (40% and 80% of full-scale), since the error at no load is unknown. The proposed linear interpolation method is illustrated in the following diagram:

Illustration of Linear Interpolation to find Error at Customer Average Billing Demand



Equation of estimating line: E = [(E80 - E40)/(M80 - M40) * (A - M40)] + E40

To use this straight-line interpretation method, only four of the meters subject to this docket would need to be re-tested. The following table shows the full-scale error test results for the twelve meters eligible for refunds because of demand registration errors. These are taken from Hearing EXH 1 (DB-4, Page 1 of 1).

Meter Number - Location	40% F.S. Error	80% F.S. Error
1V52093 (Ocean Properties – Bradenton)	5.78%	6.00%
1V7179D (J.C. Penney – Bradenton)	n/a	4.31%
1V52475 (J.C. Penney – Naples)	3.01%	4.12%
1V5216D (Dillards – Coral Springs)	2.44%	4.84%
1V7001D (Target – Boynton Beach)	n/a	4.60%
1V5192D (Target – Bradenton)	2.68%	4.36%
1V5025D (Target – Delray Beach)	1.73%	4.12%
1V7019D (Target – Ft. Myers)	n/a	4.21%
1V7032D (Target – Hollywood)	2.01%	4.84%
1V5887D (Target – Port Charlotte)	3.25%	4.36%
1V5871D (Target – Sarasota)	n/a	n/a
1V5159D (Target – Venice)	3.10%	4.36%

As this table shows, three meters need to be tested only at 40% of full scale and one meter needs to be tested both at 40% and 80% of full scale. After this testing, the linear interpolation procedure described above can be applied to determine the correction factor to be used in determining corrected customer billing demands.

To implement this process, staff recommends that the following nine-step linear interpolation procedure be used to determine the amount billed in error for the *demand portion* of the meters subject to this docket:

1. Calculate the average billing demand over the refund period. Denote this average by A.

2. Test the meter in question at both 80% of full-scale value and 40% of full-scale value (or, as nearly so as practicable), denoting these two test points by T80 and T40, respectively. Denote the kilowatt readings on the meter being tested by M80 and M40, respectively.

3. Calculate the kilowatt error at each of these test points and denote them by E80 and E40, respectively:

$$E80 = M80 - T80 \quad \text{and} \quad E40 = M40 - T40$$

4. Calculate the estimated kilowatt error, E, at the customer's average billing demand by the following formula:

$$E = [(E80 - E40) / (M80 - M40) * (A - M40)] + E40$$

5. Calculate the percentage error, P, associated with the kilowatt error at customer's average load:

$$P = [E/(A - E)]*100$$

6. Calculate a "correction factor" defined by 1/(1+P/100)

7. Multiply each monthly billing demand in the refund period by the correction factor calculated in Step 6 to determine an adjusted billing demand for each month.

8. Apply the appropriate rates and charges to each of the adjusted billing demands calculated in Step 7 to calculate an adjusted monthly bill for each month in the refund period. Then subtract the adjusted monthly bill from the original monthly bill for each month of the refund period.

9. Apply the appropriate interest rate to the overbilled amounts calculated in Step 8 to determine the total refund amount for each meter eligible for refund.

Calculation of Refunds for Watthour Overregistration

Neither the Customers' position on this issue nor the testimony provided by witness Brown, on behalf of Customers, explicitly discusses the appropriate method for calculating customer refunds for the watthour portion of a thermal demand meter. However, the refund that witness Brown is proposing in this docket for meter #1V7166D is based on the average change in kWh consumption before and after the thermal meter was replaced by an electronic meter. [Hearing EXH 6 (Tab 6 of George Brown's exhibits)] For this meter, the percent change that was used by witness Brown in his calculations (1.63%) is actually less than the error as measured by FPL (2.08%). Staff believes that FPL used the correct method to calculate the percent registration error for this meter as specified in Rule 25-6.058(3)(a). [TR 44] Using the percent error as determined by Rule 25-6.058(3)(a), an adjusted bill would be calculated in a manner similar to that outlined in Steps 6 through 9 of the procedure recommended herein to calculate refunds for overregistration by the demand portion of the meter.

As discussed previously, staff does not believe that it is appropriate to calculate refunds on the basis of readings before and after meter changeout.

Issue 3: Should the customers in this docket be treated the same way in which FPL treated other, similarly situated customers, for the purposes of determining the percentage of meter overregistration error?

Recommendation: Customers in this docket have been treated in the same manner as similarly situated customers; FPL calculated refunds for Customers and similarly situated customers based on a 12-month refund period and the higher of: (1) the meter test point error; or (2) an error calculated by comparing billing records before and after replacement of the meter. Customers in this docket disputed FPL's use of a 12-month refund period and chose to litigate this matter. The "higher of" method requested by Customers goes beyond the requirements of the Commission's rules, which require that the determination of amounts billed in error shall be based on the results of a meter test. Customers cannot now claim entitlement to a benefit to which they were never entitled under the Commission's rules and which they chose to reject. (C. Keating)

Staff Analysis: Customers point out that Section 366.03, Florida Statutes, states that "[n]o public utility shall make or give any undue or unreasonable preference or advantage to any person or locality, or subject same to any undue or unreasonable prejudice or disadvantage in any respect." Citing Pan American World Airways, Inc. v, Florida Public Service Commission, 427 So. 2d 716 (Fla. 1983), Customers argue that utility policies must be applied without discrimination. Customers argue that FPL, in calculating refunds for customers whose type 1V thermal demand meters were tested and found to be eligible for refunds, established a policy of using the higher of the meter test point error or an error calculated by comparing billing records before and after replacement of the meter (the "higher of" method). Customers contend that this policy must now be applied uniformly to all customers whose type 1V meters are eligible for refunds, including Customers.

FPL notes that Rule 25-6.103(3) provides that the determination of amounts billed in error shall be based on the results of a test. FPL contends that the record is clear that FPL offered all customers, including Customers in this docket, the "higher of" method sought by Customers, along with a 12-month refund. FPL asserts that Customers complaint of unfair treatment rang hollow when Customers' witness Brown conceded on cross-examination that FPL had made the same offer to him, as representative of Customers, and witness Brown rejected it in favor of pursuing multi-year refunds.

The record is clear that FPL treated Customers in this docket the same as other similarly situated customers with respect to the calculation of refunds for meter error in type 1V thermal demand meters. FPL calculated refunds for all such customers based on a 12-month refund period and the "higher of" method described above. [TR 45-49] The record indicates that FPL used the "higher of" method, which goes beyond the requirements of the relevant Commission rules as discussed in Issue 2, to remove any perception from affected customers that they were not being treated fairly. [TR 47] Thus, FPL went beyond the requirements of the Commission rules in this regard in an attempt to avoid litigation concerning calculation of refunds.

On behalf of Customers, witness Brown rejected this method of calculating refunds and sought refunds for greater than 12 months. [TR 94-95] Through this litigation, Customers now seek the benefit of the "higher of" method along with a refund period much greater than twelve

months. **Thus,** Customers themselves have chosen to be treated differently than similarly situated customers.

Customers assert that there is no evidence that FPL ever offered these terms to other customers as settlement or that those customers accepted these terms as settlement. Instead, Customers assert, FPL developed a policy to calculate refunds pursuant to these terms and credited customers' accounts accordingly. Customers contend that FPL never informed other customers that the credit being applied to their accounts was an offer to resolve issues related to a faulty thermal demand meter and that acceptance of the credit constituted acceptance of FPL's offer. Customers argue that merely paying a bill which includes a utility generated credit is not acceptance of an offer.

The record reflects that FPL did not negotiate the calculation of refunds with customers outside of this docket. [TR 95-96] Yet the record does indicate that every customer using a type 1V thermal demand meter was informed by FPL that each such meter would be removed, tested, and replaced with a new meter and that FPL would provide a refund if the meter test demonstrated that the meter was eligible for a refund, but would not backbill any customer whose meter underregistered outside of the limits specified by Commission rules. [TR 35-36] Each of these customers whose meter was eligible for a refund was free to challenge FPL's calculation of the refund provided, including the refund period, just as Customers have done in this docket. Upon such a challenge, FPL would also have been free to take the position that it is not required to calculate refunds based on the "higher of" method, just as it has done in this docket.

In conclusion, staff believes that FPL treated Customers in this docket the same as any other similarly situated customer with respect to the calculation of refunds for meter error in type 1V thermal demand meters. By seeking to hold FPL to one part of the formula it used to calculate refunds - a part not required by Commission rules - but seeking larger refunds by litigating another part of the formula, Customers have chosen to be treated differently than similarly situated customers.

Issue 4: What rate schedule should be applied in calculating customer refunds?

Recommendation: The proper rate schedule to be used to calculate refunds is the schedule under which the customer would have been billed, had the meter registered accurately. (Kummer, Wheeler)

Staff Analysis: This issue deals solely with the determination of the rate schedule to be used to calculate the actual dollar refund, once the percent error and the length of time to be covered is determined. The appropriate calculation of the meter error to be used in calculating a refund is discussed in Issues 1 and 2. The length of time over which refunds are due is addressed in Issue 5.

As discussed in FPL witness Morley's testimony, the goal of refunds is to make the customer's electric bill equal to the electric bill which would have been rendered, had the meter error not existed. [TR110] Witness Morley argues that the objective should be to hold the customer harmless from the effects of the meter error and return the customer to a correctly billed status quo. [TR 111] Witness Morley describes how FPL's rate schedules are differentiated by the maximum monthly demand of the customer. Customers whose maximum demand in a given 12 month period is between 21 kW and 499 kW qualify for the GSD rate. Customers whose maximum demand in a 12 month period is between 500 kW and 1,999 kW are billed under the GSLD-1 rate schedule. If a customer's meter resulted in a measured maximum demand in excess of 500 kW but the actual demand was less than 500 kW, in the absence of the meter error, the customer would have been billed under the GSD tariff. Therefore the appropriate adjustment is to calculate the customer's bill under the GSD schedule and then subtract that amount from the actual amount billed to determine the amount of the refund for the month. [TR 110-11] Witness Morley maintains that this methodology is consistent with the Florida Administrative Code. [TR 121]

Customers' witness Brown states that the Customers agree that the process sponsored by witness Morley is correct. [TR 14] However, they believe that the determination of the percent meter error, a critical input to witness Morley calculations, is incorrect. As a result, witness Brown contends that FPL's proposed refund calculation can never meet its stated goal of restoring the customer to the position the customer would been in but for the metering error. [TR 176,188]

Customer witness Brown also disputed the rate schedule used for a specific customer, Account number 90964-37216. This customer was originally billed on the GSLD rate schedule because the customer's maximum registered demand in a 12 month period was in excess of 500 kW. When the correction factor advocated by witness Morley was applied, this customer no longer qualified for the GSLD rate and was rebilled using the GSD rate factors. [TR 17-18] The GSLD rate schedule allows a customer for whom it is advantageous to "opt up" to the GSLD rate even if the customer would not otherwise qualify for that schedule. The customer then pays for the minimum 500 kW demand, no matter what the actual kW usage is. [TR 185] The advantage to "opting up" is the ability to take service at the lower kWh charge on the GSLD rate. For high load factor customers, this may be a significant monetary advantage, even with the minimum kW charges. Witness Brown argued that because the customer was very close to 500 kW maximum demand, and may well have chosen to "opt up," using the GSD rate to calculate the refund could

understate the refund due to this customer. Since the customer had no reason to believe it didn't qualify for the GSLD rate, it never considered the "opt up" provision and was therefore being unduly penalized by being billed at the GSD rate. [TR 185]

FPL witness Morley notes that this account is the only customer of the 14 addressed in this docket which fell into this potential "opt up" situation. [TR 115] Further, FPL established that this customer had been on the GSD rate since September 2003, was aware of the opt up provision, and had not yet availed itself of that option. [TR 224-5] The inference was that the customer, even given the knowledge and opportunity to opt up, has not done so. Staff believes that it is reasonable to assume the customer would not have opted up, had the meter been registering correctly. Therefore, witness Morley's calculations for this customer were appropriate.

Witness Morley repeatedly stated that she relied on the error percentage computed and provided by FPL witness Bromley and did not independently verify it. [TR 128, 133, 134] The determination of appropriate meter error calculation is addressed in Issues 1 and 2. Customer witness Brown also disputes witness Morley's refund calculations because she uses a 12 month period. Mr. Brown alleges the Customers are due refunds for a much longer period. [TR 180] The length of time over which refunds should be granted is addressed in Issue 5. If the Commission determines that some methodology for determining meter error other than the one proposed by FPL witness Bromley is appropriate, or that the refunds should cover more than a 12 month period, the total refund amounts shown in witness Morley's testimony would need to be adjusted. However, neither of these factors changes staff's recommendation that the proper rate schedule to be used to calculate refunds is the schedule under which the customer would have been billed, had the meter registered accurately.

Issue 5: Pursuant to Rule 25-6.103, Florida Administrative Code, what is the period for which refunds should apply?

Recommendation: The refund period for all meters except Meter #1V5871D (Target – Sarasota), Meter #1V5192D (Target – Bradenton), and Meter #1V7001D (Target – Boynton Beach) should be the twelve billing months prior to replacement of the meter. The refund period for Meter #1V5871D should be all billing months from May 1997 through August 2002. The refund period for Meter #1V5192D should be all billing months from December 1996 through November 2002. The refund period for Meter #1V7001D should be all billing months from December 1993 through November 2002. (Floyd, C. Keating)

Staff Analysis: Rule 25-6.103(1), Florida Administrative Code, reads in pertinent part:

> Whenever a meter is found to have an error in excess of the plus tolerance allowed in Rule 25-6.052, the utility shall refund to the customer the amount billed in error as determined by Rule 25-.058 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.

As discussed below, staff believes, pursuant to this rule, that a refund period of more than one year is not appropriate for the meters addressed in this docket, except for Meter #1V5871D, Meter #1V5192D, and Meter #1V7001D. The following table lists the thirteen meters that are eligible for refund based on staff's analysis in Issue 1. They are grouped in the order in which they are discussed in staff's analysis on this issue.

Meter Number – Location	Comment
1V7166D (Dillards – Port Charlotte)	Failed watthour portion of meter
1V5871D (Target – Sarasota)	Meter showing physical damage
1V5216D (Dillards – Coral Springs)	Failed demand portion of meter These six meters were never calibrated by FPL (TR 54).
1V5159D (Target – Venice)	
1V5887D (Target – Port Charlotte)	
1V7019D (Target – Ft. Myers)	
1V7032D (Target – Hollywood)	
1V7179D (J.C. Penney – Bradenton)	
1V5025D (Target – Delray Beach)	Failed demand portion of meter
1V52475 (J.C. Penney – Naples)	Failed demand portion of meter
1V52093 (Ocean Properties – Bradenton)	Failed demand portion of meter
1V5192D (Target – Bradenton)	Failed demand portion of meter
1V7001D (Target - Boynton Beach)	Failed demand portion of meter

Meter #1V7166D (Dillards – Port Charlotte)

This meter failed the watthour accuracy requirements of Commission rules by a very small amount. Rule 25-6.052(1) states that the performance of the watthour portion of the meter is acceptable when the average registration is not more than 102 percent nor less than 98 percent. The registration of the meter in question was found to be 102.08 percent (or 2.08 percent error).

Customers witness Gilmore did not include any analysis in his rebuttal testimony to show that the watthour portion of this particular meter had been misregistering since the date of last calibration. His rebuttal testimony applied only to the demand portion of the meters subject to this docket. [TR 382, Hearing EXH 16, BG-3] The only other testimony in this docket that attempts to show a change after meter replacement is a chart provided by witness Brown. [Hearing EXH 7, Tab 5] However, this chart shows only a one-year historical analysis. Therefore, the chart does not demonstrate that the watthour portion of this meter has been in error by more than two percent since its last calibration. Because there is no evidence to demonstrate that this meter has had an unacceptable error since it was installed or last calibrated or since some other fixed point in time, staff recommends that the appropriate refund period for this meter is one year.

Meter #1V5871D (Target – Sarasota)

As discussed above, this meter showed evidence of a bent maximum demand pointer which caused the meter's instantaneous demand pointer to prematurely strike the maximum demand pointer, causing an erroneous deflection of approximately +2.5 divisions on the scale of the meter. It is difficult to imagine that the pointer bent gradually over time, since it is protected by a glass cover. The last opportunity for the pointer to become bent was when it was last calibrated by FPL. Also, no explanation was offered by any FPL witness as to how this damage could have gradually occurred. For these reasons, staff recommends that the refund for this meter be made back to the time this meter was installed after its last calibration. According to witness Brown, this period would be May 1997 through August 2002. [TR 160]

Meters #1V5216D (Dillards – Coral Springs), #1V5159D (Target – Venice), #1V5887D (Target – Port Charlotte), #1V7019D (Target – Ft. Myers), #1V7032D (Target – Hollywood), and #1V7179D (J.C. Penney – Bradenton)

These six meters were never calibrated (i.e., adjusted) by FPL (TR 54). They were tested in the early 1990s when they were received from the manufacturer. Because the new meters tested as accurate, calibration adjustments were not required. [TR 53-54] Customers' theory of this case was that the meters were miscalibrated by FPL and, therefore, any refund must go back to the time that they were last calibrated by FPL. [TR 158]

In addition to the fact that these meters were never adjusted by FPL, the control charts prepared by witness Gilmore [Hearing EXH 16, BG-3] do not support a refund period of more than one year for these meters. Witness Gilmore's contention is that there is a consistent relationship between kilowatt-demand and energy consumption. According to witness Gilmore,

because the meters in this docket have exhibited correct readings for energy consumption, any significant change in the ratio of demand to energy must be caused by a change in demand.

Witness Gilmore plots these ratios of demand to energy on a chart along with statistically determined upper and lower control limits. The last ratio plotted on each chart represents the ratio of demand to energy for the new electronic demand meter that replaced the old thermal demand meter. If the last data point falls below the lower control limit while all other data points fall within the control limits, witness Gilmore contends that this is an indication that the demand dropped significantly when the new meter was installed.

Staff maintains that if there is already a downward trend in the plotted ratios prior to meter replacement, a point falling below the control limit would not necessarily indicate an "out of control" condition as witness Gilmore contends. [TR 382] It is just as likely to indicate the continuation of a trend that had already been established. Based on witness Gilmore's analysis of these six meters, staff makes the following observations about each meter:

- The chart for Meter #1V5216D (Dillards – Coral Springs) shows that all plotted ratios (annual average ratios of demand to energy consumption) fall within the established control limits.

- The chart for Meter #1V5159D (Target – Venice) shows that there is a downward trend in plotted ratios prior to meter replacement. In addition, all ratios are within the established control limits.

- Witness Gilmore stated under cross examination that he did not have the correct data corresponding to the chart for Meter #1V5887D (Target - Port Charlotte). [TR 401] Thus, no conclusions can be drawn from the chart for this meter.

- The chart for Meter #1V7019D (Target – Ft. Myers) shows a downward trend in ratios for the five-year period prior to meter replacement.

- The chart for Meter #1V7032D (Target – Hollywood) shows a downward trend for two years prior to meter replacement. In addition, all annual averages are within the established control limits, although the last data point is very near the limit.

- The chart for Meter #1V7179D (J.C. Penney – Bradenton) shows a downward trend for the three years prior to meter replacement.

From this record, staff believes Customers have not justified, pursuant to Rule 25-6.103(1), a refund period beyond one year for these six meters. Thus, staff recommends that the appropriate refund period for these meters is the one-year period prior to meter replacement.

Meters #1V5025D (Target – Delray Beach), #1V52475 (J.C. Penney – Naples), and #1V52093 (Ocean Properties – Bradenton)

Similarly, staff does not believe that the control charts prepared by witness Gilmore [Hearing EXH 16, BG-3] support a refund period of more than one year for these three meters for the following reasons:

- The control chart for Meter #1V5025D (Target – Delray Beach) shows a downward trend over all years represented by the control chart. In addition, there are significant drops in the ratios for both years prior to meter replacement.

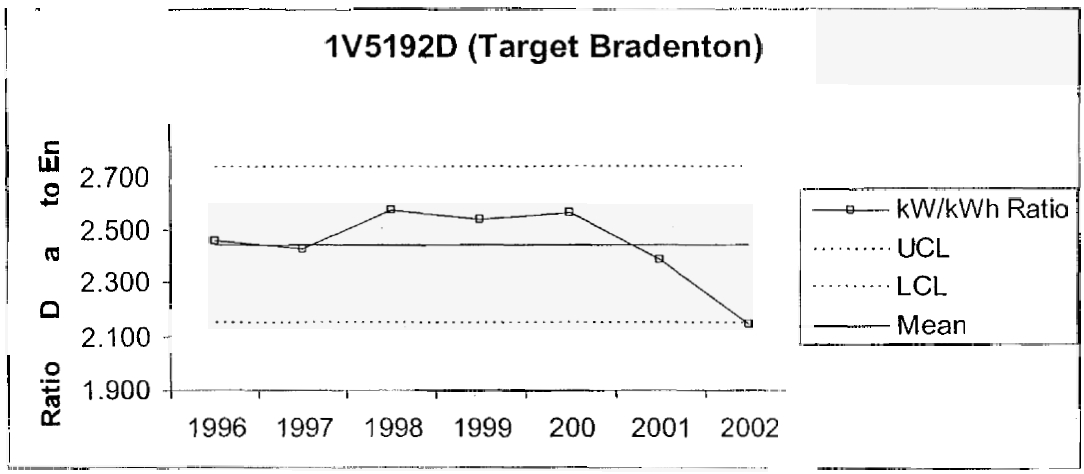
- The control chart Meter #1V52475 (J.C. Penney – Naples) shows that all annual averages are within the established limits of the control chart. In addition, there is a significant drop in the ratio for the year prior to replacement of the meter.

- The control chart for Meter #1V52093 (Ocean Properties – Bradenton) shows a downward trend in the ratios for two years prior to meter replacement. In addition, all annual averages fall within the established control limits.

Meter #1V5192D (Target – Bradenton)

The control chart for this meter does not match the accompanying data upon which the chart is supposedly based. For example, the number of data points shown on the chart corresponds to years 1994 through 2003, however, the accompanying data is only for years 1997 through 2003. In addition, staff notes that the chart for this meter is exactly the same as the chart for the Target Boynton Beach meter.

Staff created the following control chart based on the data in Hearing EXH 16 (BG-2). The same methodology was used as outlined in witness Gilmore's rebuttal testimony.

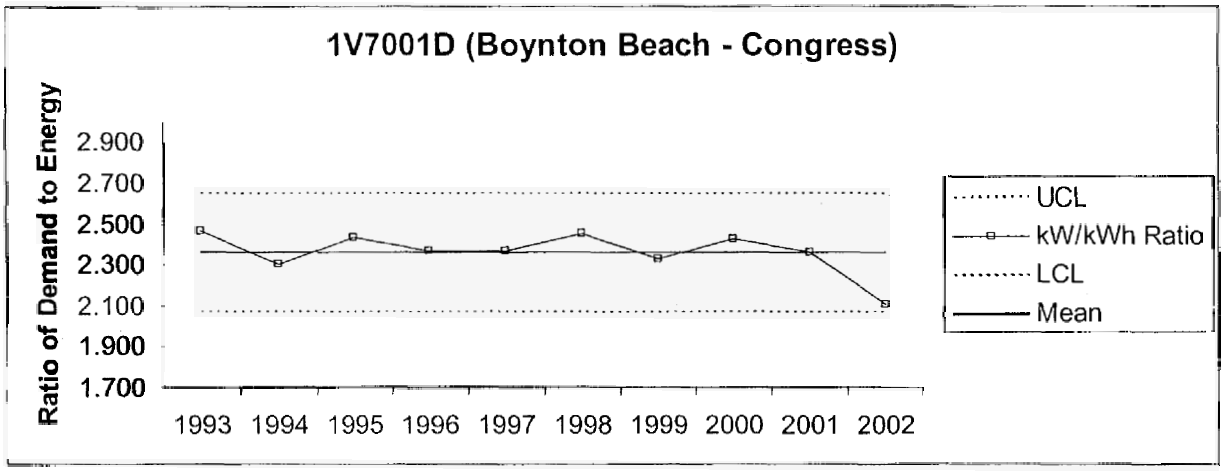


This chart shows a stable and fairly flat pattern of ratios prior to meter replacement. Staff believes that this evidence shows that the demand portion of this meter was overregistering as far

back as December 1996, which is the beginning month that the control chart was based on. (See Page 2, Exhibit BG-2 of Hearing EXH 16 for this meter). Thus staff recommends that the appropriate refund period for this meter is the billing months from December 1996 through November 2002.

Meter #1V7001D (Target - Boynton Beach)

The control chart for this meter shows a stable and fairly flat pattern of ratios prior to meter replacement. Based on the data presented by witness Gilmore in Hearing EXH 16 and the methodology presented in witness Gilmore's rebuttal testimony, staff independently created a control chart for this meter, as shown below. The resulting graph is very similar to the graph shown in witness Gilmore's rebuttal testimony.



Staff believes that this evidence shows that the demand portion of this meter was overregistering as far back as December 1993, which is the beginning month that the control chart was based on. (See Page 2, Exhibit BG-2 of Hearing EXH 16 for this meter). Thus, staff recommends that the appropriate refund period for this meter is the billing months from December 1993 through November 2002.

Issue 6: What interest rate should be used to calculate customer refunds?

Recommendation: The Commission should apply the interest rate provisions of Rule 25-6.109, Florida Administrative Code, to calculate appropriate refunds. (C. Keating)

Staff Analysis: Customers argue that, pursuant to Section 687.01, Florida Statutes, the appropriate interest rate for calculating customer refunds is the rate provided for in Section 55.03, Florida Statutes. Section 687.01 states that "[i]n all cases where interest shall accrue without a special contract for the rate thereof, the rate is the rate provided for in s. 55.03." Customers state that Section 55.03 requires the Chief Financial Officer to annually set the interest rate by averaging the discount rate of the Federal Reserve Bank of New York for the preceding year, then adding 500 basis points to the averaged discount rate. Customers also argue that the Florida Supreme Court decided in Kissimmee Utility Authority v. Better Plastics, Inc., 526 So. 2d 46 (Fla. 1988) that Section 687.01 is applicable when calculating interest on utility overcharge refunds.

Customers further argue that Rule 25-6.109(4), Florida Administrative Code, which addresses the interest rate to be applied to Commission-ordered refunds, is invalid because no specific statutory authority exists which gives the Commission the ability to adopt such a rule. Customers note that they have initiated a rule challenge in a proceeding before the Division of Administrative Hearings. Finally, Customers argue that it is better public policy to calculate interest using an approach that reaches back further in time to the point Customers were actually damaged, rather than applying an interest rate based on the commercial paper rates for the past 30 days as called for in Rule 25-6.109(4).

FPL notes that Rule 25-6.109(1) provides that the interest rate provisions of subsection (4) of the rule apply to all refunds ordered by the Commission with the exception of deposit refunds and refunds associated with adjustment factors, unless otherwise ordered by the Commission. FPL notes that this case does not involve deposit refunds or refunds associated with adjustment factors.

FPL contends that Kissimmee Utility is distinguishable from this case because it did not address whether the rule at issue in this case applied to a refund ordered by the Commission for payment by an electric utility that is subject to rate regulation by the Commission. FPL notes that approximately seven months after issuance of the Court's opinion in Kissimmee Utility, the Commission directly addressed the applicability of its refund rules in Commission proceedings. FPL notes that in Order No. 20474, issued December 20, 1988, in Docket No. 880606-WS, In re: Complaint by Kelly Tractor Company, Inc. against Meadow Brook Utility Systems, Inc. regarding refunds for overpayments in Palm Beach County, the Commission analyzed and rejected the potential application of the Kissimmee Utility decision and held that the interest to be applied to the refund at issue should be calculated pursuant to its rules. FPL states that in that case, the Commission noted that the generally applicable refund and interest rate rule for public utilities subject to Commission rate regulation was not at issue in Kissimmee Utility.

Staff agrees with FPL that the Florida Supreme Court's decision in Kissimmee Utility is clearly and easily distinguishable from this case. Kissimmee Utility involved a municipal utility not subject to the Commission's broad ratemaking authority under Chapter 366, Florida Statutes.

The Commission does not have the authority to set rates for municipal utilities and, likewise, does not have the authority to require refunds for overcharges of the rates set by municipal utilities. Thus, the Commission's rules governing refunds and interest rates applicable to Commission-ordered refunds were not at issue in Kissimmee Utility. As noted by FPL, the Commission recognized these distinctions in Order No. 20474 and determined that its rules, rather than Section 687.01, apply to the calculation of interest on Commission-ordered refunds. Thus, staff recommends that the Commission apply the interest rate provisions of Rule 25-6.109, Florida Administrative Code, to calculate appropriate refunds.

Staff does not believe that it is appropriate to address, in this proceeding, the Commission's authority to implement Rule 25-6.109(4). As Customers note, a rule challenge concerning this matter is currently pending before the Division of Administrative Hearings. Staff believes that DOAH is the proper forum for arguing and deciding the Commission's authority to implement the rule. For purposes of this proceeding, the Commission must only determine whether the rule applies in the context of Customers' complaints. Based on its analysis above, staff believes that it clearly does.

Issue 7: Did the sun or radiant heat affect the accuracy of any of the meters subject to this docket? If so, how do such effects impact the determination of which meters are eligible for a refund of the amount of any refund due?

Recommendation: There is no evidence that the sun or radiant heat affected the accuracy of any other meters subject to this docket. Therefore, there is no impact on the determination of which meters are eligible for a refund or the amount of any refund. (Floyd)

Staff Analysis: According to the Prehearing Order, witnesses Brown, Smith and Gilmore were identified to address this issue. Witness Gilmore provided no testimony on this issue. Witness Brown testified that he had observed and video recorded numerous thermal demand meters that appeared to respond to the effects of solar radiation. [TR 161] When asked if the meters subject to this docket have been affected by the sun, he stated that he could not be certain what part of the meters' demand errors in the docket were affected by the sun. [TR 161] Witness Smith also testified that thermal demand meters are affected by the sun. [TR244] However, he provided no specific testimony regarding the meters that are subject to this docket.

FPL witness Bromley discussed this issue in his direct testimony. [TR 32-34] In early 2002 a customer alleged, among other things, that its 1V thermal demand meter was over-registering in part because of the effects of the sun. FPL metering personnel investigated and observed that the heating and cooling of the meter experienced during and after exposure to the sun appeared to be affecting the demand reading.

FPL then performed a laboratory test on the meter. Three 500-watt halogen lights were used to simulate the effect of the sun. By using this test, FPL was able to duplicate what FPL employees had observed in the field. The process of being heated and then cooled caused the meter to over-register demand. To determine whether the phenomenon was a widespread problem, FPL tested two random samples of thermal meters, totaling 150 meters in all. Not one of the 150 meters sampled registered higher than it should when the meter was heated by the halogen lights and then cooled. [TR 34]

FPL witness Malemezian testified that the effect of the sun may cause a slight under-registration. [TR 324] He points out that the lab test performed by FPL on the 150 meters showed that the external heating caused either no demand mis-registration or some demand under-registration.

There is no information in the record to indicate that the specific meters subject to this docket were affected by the sun. Therefore, no determination can be made as to how this phenomenon may have affected the meters subject to this docket.

Issue 8: What is the appropriate customer refund for each thermal demand meter subject to this docket that tests outside the prescribed tolerance limits?

Recommendation: For the thirteen meters identified in Issue 1 as being eligible for refunds, the Commission should order refunds to be calculated consistent with staff's recommendations in Issues 2-7. Four of the meters should be re-tested as described in Issue 2 before refund calculations can be made. Refunds should be completed within 30 days of the issuance date of the Commission's final order. (Floyd, Kummer, Wheeler, C. Keating)

Staff Analysis: This issue is a fallout of previous issues. FPL should be ordered to calculate corrected billing determinants for the thirteen meters over the periods specified in Issue 5. The appropriate rate schedule as determined by Issue 4, and all other applicable rates and charges, should be applied to the corrected billing determinants to determine the corrected bill for each month in the refund period.

The difference between the original bill and the corrected bill is the amount of refund due to the customer, except for interest. The appropriate interest rate, as determined in Issue 6, should be applied to the monthly refund amounts to determine a total refund for the entire refund period.

This procedure is identical to the procedure laid out in FPL witness Morley's direct testimony, except for the determination of the appropriate correction factor to apply to the customers' billing determinants. [Hearing EXH 4]

Refunds should be completed within 30 days of the issuance date of the Commission's final order.

Issue 9: Should this docket be closed?

Recommendation: The docket should be closed after the time for filing an appeal has run. (C. Keating)

Staff Analysis: The docket should be closed 32 days after issuance of the order, to allow the time for filing an appeal to run.