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: OCTOBER 9, 2003

TO: DIRECTOR, DIVISION OF THE COMMISSION CLERK & ADMINISTRATIVE SERVICES (BAYÓ)

FROM: OFFICE OF THE GENERAL COUNSEL (C. KEATING)
DIVISION OF AUDITING & SAFETY (MILLS, RUEHL)
DIVISION OF ECONOMIC REGULATION (FLOYD, MATLOCK, KUMMER, WHEELER)

RE: DOCKET NO. 030623-EI - COMPLAINTS BY SOUTHEASTERN UTILITY SERVICES, INC., ON BEHALF OF VARIOUS CUSTOMERS, AGAINST FLORIDA POWER & LIGHT COMPANY CONCERNING THERMAL DEMAND METER ERROR.

AGENDA: 10/21/03 - **REGULAR** AGENDA - PROPOSED AGENCY ACTION - INTERESTED PERSONS MAY PARTICIPATE

CRITICAL DATES: NONE

SPECIAL INSTRUCTIONS: NONE

FILE NAME AND LOCATION: S:\PSC\GCL\WP\030623.RCM

CASE BACKGROUND

In January 2002, the Florida Public Service Commission (Commission) received a customer inquiry from Southeastern Utility Services, Inc. (SUSI), on behalf of a Florida Power & Light Company (FPL) customer, concerning one of FPL's Type 1V thermal demand meters used in commercial applications. SUSI alleged that **the** meter **improperly** measured, or registered, demand when exposed to the heat of the sun followed by exposure to shade. At the request of SUSI, a Commission staff engineer witnessed a test of the meter under simulated field conditions. The test revealed that the meter had a potential inaccuracy when subjected to changes in temperature that would be caused by exposure to sunlight in the morning followed by shade in the afternoon.

To determine whether this phenomenon was unique to this particular meter, FPL, in September 2002, tested a sample 'of 50 additional Type 1V thermal demand meters and a sample of 100 additional thermal demand meters of various types under the same simulated field conditions. None of' the 150 additional meters responded similarly to the original meter under the simulated field conditions. However, the test results showed that more than the allowable percentage of Type 1V meters registered demand outside of the tolerance limits specified in Rule 25-6.056, Florida Administrative Code.

On October 11, 2002, FPL notified staff of its plans to remove and replace all of its approximately 3,900 Type 1V thermal demand meters by January 2003. FPL indicated that it would test each such meter and issue refunds to customers whose Type 1V meters over-registered demand, but would not back-bill customers whose meters under-registered demand, absent evidence of meter tampering or fraud. The results of the individual meter tests conducted by the utility indicated that 15% of its Type 1V meters registered outside of tolerance, with 11% under-registering demand and 4% over-registering demand. Thus, many more customers were under-billed rather than over-billed as a result of Type 1V meter error. Recently, each Type 1V meter that over-registered demand at any level in testing was retested by FPL at a higher demand level, or higher percentage of scale. The results of the retests indicated that 6% of the Type 1V meters over-registered demand outside of tolerance.

SUSI has submitted complaints on behalf of several customers whose Type 1V meters (now removed and replaced by electronic demand meters) were found to over-register demand during FPL's tests. On January 24, 2003, SUSI submitted a complaint on behalf of one Target account. On March 6, 2003, **SUSI** submitted complaints **on** behalf of thirteen additional Target accounts. On July 16, 2003, **SUSI** submitted complaints on behalf of two Dillards accounts and two JCPenny accounts. On July 17, **SUSI** submitted complaints **on** behalf of three Best Buy accounts. On July 29, 2003, SUSI submitted a complaint on behalf of one Ocean Properties account. Since that time, **SUSI** has submitted complaints on behalf of six Home Depot accounts. In each case except the January 24 Target complaint, which staff addresses separately in Issue 3 of this recommendation, there is no dispute that the customer's meter over-registered demand. Each complaint involves the appropriate level of refund to be provided to those customers.

SUSI and FPL attempted to settle the complaints submitted by SUSI without the need for Commission intervention. The parties made progress in narrowing the issues in dispute but could not reach agreement over the appropriate level of refunds. Staff was informed in June 2003 that the parties were at an impasse concerning the complaints filed up to that point in time.

On July 16, 2003, the Commission opened Docket No. 030623-EI to address the remaining disputed issues between the parties, i.e., the appropriate method to determine refunds for those customers who formerly used Type 1V thermal demand meters that over-registered demand. As noted above, SUSI submitted additional complaints soon thereafter.

Since SUSI's January 2002 inquiry, staff has participated in numerous discussions with representatives of FPL and SUSI and witnessed several tests and retests of the thermal demand meters in question. On July 24, 2003, staff met with FPL, SUSI, and the office of Public Counsel in an attempt to resolve these complaints. Following that meeting, staff requested additional information related to the remaining disputed issues through an informal data request. Staff's recommendation is based on the information provided in response to that request, information gathered in discussions with FPL and SUSI, and information gathered since SUSI's January 2002 inquiry.

The Commission has jurisdiction over this matter pursuant to Chapter 366, Florida Statutes, including Sections 366.04 and 366.05, Florida Statutes.

DISCUSSION OF ISSUES

ISSUE 1: What is the appropriate method for determining the meter error to be used in calculating refunds due to FPL customers who formerly used Type 1V thermal demand meters that over-registered demand outside of tolerance?

RECOMMENDATION: The single point percent error determined by testing the meter at 80% of full scale should be used in calculating any refund. If the kilowatt error divided by the full-scale kilowatt value is greater than four percent, the customer should receive a refund. The percent error obtained through testing the meter at 80% of full scale should be applied to the actual billing demands to determine the appropriate refund. (Floyd, Matlock, C. Keating)

STAFF ANALYSIS: In addressing this issue, the Commission must consider the interplay of three rules. First, Rule 25-6.052, Florida Administrative Code, describes the procedures used to test a meter to determine if it is inaccurate, i.e., registers beyond tolerance limits. Next, Rule 25-6.058, Florida Administrative Code, defines the procedure used to determine the average meter error, once the meter has been determined to be inaccurate beyond tolerance limits. Finally, Rule 25-6.103, Florida Administrative Code, describes the procedure used for adjusting bills when a meter is found to be registering outside acceptable limits.

Rule 25-6.052(2)(a), Florida Administrative Code, provides that the acceptable percent error for lagged demand meters, which include the type of meter that is the subject of these complaints, is four percent of full-scale value when tested at any point between 25 percent and 100 percent of full-scale value. If a meter is found to register outside of this tolerance limit, the degree to which the meter is in error and the manner in which bills should be adjusted must be determined.

Rule 25-6.103 (1), Florida Administrative Code, subtitled "Fast Meters," states that 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 25-6.058. However, Rule 25-6.058 does not clearly provide an appropriate method for determining the amount billed in error for the demand meters in question in this case.

Rule 25-6.058 (3), Florida Administrative Code, states that for a polyphase meter used to measure a varying load, the average error shall be determined in one of the following ways:

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

While thermal demand meters are polyphase meters, neither (a) nor (b) above are relevant to determining average error for demand meters. Part (b) is not applicable to this case because a thermal demand meter is not a solid state meter. Part (a) is relevant to calculating average error in energy (kWh) readings from watthour meters but not demand (kW) readings from demand meters. Part (a) calls for measuring the error at light load (approximately 10 percent of rated test amperes). Because customers with demand meters are billed at the maximum demand for the billing period, a test at light load would not be relevant in calculating average error in demand readings.

Further, Rule 25-6.052, which provides test procedures for measuring the accuracy of both energy and demand readings on meters, refers to Rule 25-6.058 to calculate error in energy readings from watthour meters but does not make a similar reference for demand readings from lagged demand meters.

Although the test to determine average meter error set forth in Rule *25-6.058,* Florida Administrative Code, is not relevant to determine error for demand meters, the Commission's rules do indicate that error should be based on results of a meter test. Rule 25-6.103(3), Florida Administrative Code, clearly states 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 shall be that percentage of error as determined by the test."

SUSI proposes that refunds be based on the higher of (1) the error observed during the testing of the old meter or (2) the average error observed in comparing the new meter billing demands with the old meter billing demands for comparable months. This 'higher of" method has no basis in the Commission's rules. Further, while the first component of SUSI's proposed method is consistent with the requirement in Rule 25-6.103**(3) that** refunds be calculated based on the error demonstrated in a meter test, the **second** component is inconsistent with that requirement and does not have a basis in any Commission rule.

Based on discussions at the July 24, 2003, meeting with the parties, it is staff's understanding that both FPL and SUSI have agreed to test the meters at the single point of *80%* of full scale. It is also agreed that if the kilowatt error divided by the full-scale kilowatt value is greater than four percent, the customer should receive a refund. Because the Commission's rules do not clearly provide a method for determining average meter error for demand meters and the parties have agreed to test the meters at 80% of full scale, staff recommends that the percent error determined when testing the meters in question at the single point of 80% of full scale should be **applied** to the customer's billing demand under **the** Type 1V meter to determine the number of kilowatts billed in error. Testing at 80% of full scale would be at or above most customers' actual demands and would therefore be a fair point for determining the meter error experienced by customers who formerly used Type 1V meters. Staff believes that this method is reasonable and consistent with the Commission's rules. Staff notes that FPL has used this method to calculate **and** pay refunds to other customers who formerly used Type 1V meters that **over-registered** demand.

Finally, staff notes that FPL compared the monthly billing demands of those Type 1V meters that over-registered demand with the comparable monthly billing demands of the replacement electronic meters. In other words, consistent with the second component of SUSI's "higher of" method described above, monthly demands that were registered by the new electronic meters for particular months were compared to the monthly demands registered by the old Type 1V meters for those same months of prior years. Notwithstanding that use of this comparative method has no basis in the Commission's rules, staff reviewed this data and found that these comparisons did not yield a consistent degree of error upon which staff could comfortably rely to determine a refund amount.

ISSUE 2: Should FPL be required to backbill customers who formerly used Type 1V thermal demand meters that under-registered billing demand outside of tolerance?

RECOMMENDATION: No. Single-account customers should not be backbilled for Type 1V meters that under-registered billing demand unless there is evidence of meter tampering or fraud. However, net billing (netting) should be applied for customers with multiple accounts. Multiple-account customers should not be backbilled for any net under-registration. Netting should not apply to multiple-account customers who requested refereed meter tests for specific meters before October 22, 2002. (Floyd, Matlock, C. Keating)

STAFF ANALYSIS: On October 11, 2002, staff received a letter from Dave Bromley, Manager, Regulatory Strategy for FPL, outlining the procedure that FPL intended to use to remove, replace, and test Type 1V thermal demand meters, including the method for calculating refunds. The procedure called for netting multiple-account customers' registration errors, but not backbilling single-account customers for any under-registration. Also, multiple-account customers would not be backbilled for any net under-registration.

Rule 25-6.103(2)(a), Florida Administrative Code, provides that if a meter is found to be slow, non-registering, or partially-registering, a utility may backbill the customer for a period not greater than twelve months from the date it notifies the customer of the meter error. Under FPL's proposal, no customer would be backbilled for Type 1V meters that under-registered billing demand outside of tolerance. While the Commission's rules do not address the netting procedure proposed by FPL, staff believes this procedure is fair and reasonable because no customer will be asked to pay for errors caused by under-registering Type 1V meters. Staff recommends approval of this procedure, except as noted below.

As noted above, FPL's proposal called for the removal and testing of all of its approximately 3,900 Type 1V thermal demand meters by January 2003. Pursuant to Rule 25-6.060, Florida Administrative Code, a customer may request a meter test referee from the Commission. The Commission must then notify the utility of the request. Under the rule, the utility may not disturb the meter outside of the presence of a Commission representative once it has received notice of the request, unless authority to do so is first given in writing by the Commission or the customer. FPL was concerned that the Commission may receive a request for meter test

referee prior to a particular 1V meter being removed, but, in the time it would take for that request to be communicated from the Commission to FPL then to FPL's meter replacement crew, the meter may be removed in the normal course of FPL's planned replacement and testing program. Thus, before implementing its program, FPL requested authority to remove, outside the presence of a Commission representative, its Type 1V meters for which it had not already received a meter test referee request. By letter dated October 21, 2002, the Commission's General Counsel, pursuant to the rule, granted FPL's request for authority to remove only 1V meters outside the presence of a Commission representative in order to improve the efficiency and expediency of the replacement program. This authority applied only to future, not pending, meter test referee requests and was conditioned on FPL maintaining and documenting a continuous chain of custody for meters subject to such requests.

SUSI had pursued meter test referee requests and refunds on behalf of several customers prior to the grant of authority described above. Thus, those customers' meters were not subject to the mass removal and testing program, including the netting process proposed by FPL for meters removed and tested under that program. Staff recommends that any specific Type 1V meter for which a test was requested prior to October 22, 2003, should be exempt from the multiple-account netting process proposed by FPL and recommended by staff, above.

ISSUE 3: What percent error should be used in calculating a refund for the specific meter identified in SUSI's January 24, 2003, complaint on behalf of one Target account?

RECOMMENDATION: Staff recommends that 6.7 percent be used as the appropriate percent error to calculate a refund for this meter. (Floyd, Matlock, C. Keating)

STAFF ANALYSIS: On ~~August 6~~ July 30, 2002, the Commission received a letter from Target Stoves requesting a refereed meter test for thirteen meters. During testing it was observed that one of the meters had a "pusher" pointer that was bent. SUSI questioned the results of the meter test because of this mechanical problem. This meter became the subject of SUSI's January 24, 2003 complaint. This meter alone is the subject of this issue.

On a properly functioning meter, as load increases, the pusher pointer pushes a second pointer, or maximum demand pointer, on the meter scale to the customer's maximum registered demand. As load decreases, the pusher pointer recedes down the meter scale while the second pointer remains at the point of the customer's maximum registered demand. A customer's monthly demand charge is based on its maximum demand for that month as shown by the second pointer's position on the meter scale at the time the meter is read. The meter is reset after it is read.

SUSI claimed that the pusher pointer was contacting the maximum demand pointer prematurely, causing the demand to read higher than it should. FPL asserted that, although the pusher pointer caused the meter to read high temporarily, the pusher pointer pulled the maximum demand pointer down the meter scale along with it as load decreased. FPL stated that this could even cause the meter to under-register.

The refereed meter test showed an error of 3.14 percent over-registration when tested at 61.4 percent of full scale. This degree of over-registration is within the tolerance limits specified in Rule 25-6.052, Florida Administrative Code. However, FPL states that it inadvertently calculated the error to be 6.7 percent by including the effect of the bent pusher pointer in the calculation of error. Nevertheless, FPL agreed to offer SUSI a refund using the 6.7 percent error figure.

SUSI and FPL could not agree on the amount of the refund due. staff asked FPL to re-test the meter with the bent pusher pointer to see if the results were repeatable. FPL re-tested the meter four times and determined that the resulting percent error was close to the original test error of 3.14 percent.

Staff believes that using a 6.7 percent error in this case is reasonable for purposes of calculating a refund for this customer. FPL is still willing to use 6.7 percent error and allow a refund on that basis. Further, the meter did have a bent pusher pointer and was over-registering. Even though the additional tests showed the meter was still registering within tolerance, staff is not completely convinced that the bent pusher pointer may not have caused higher readings under actual field conditions. Thus, staff recommends using a 6.7 percent error for purposes of calculating a refund for this meter.

ISSUE 4: Over what time period should refunds be calculated for customers who formerly used Type 1V meters that over-regis'tered demand outside of tolerance?

RECOMMENDATION: Refunds should be calculated over **the** 12-month period prior to removal of the Type 1V meter. This procedure should also be used to calculate the refund recommended for the meter discussed in Issue 3, above. (Floyd, Matlock, C. Keating)

STAFF ANALYSIS: Rule 25-6.103(1), Florida Administrative Code, states, 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 . . . for one half of 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.

SUSI claims that the meters have been in error since initial calibration and that there is no physical mechanism that will cause the meters to over register apart from miscalibration. FPL claims that, although it does not know precisely the physical mechanism that will cause over-registration, utility data show that Type 1V meters can both over-register and under-register through time.

Based on the information staff received from both FPL and SUSI, we have not been able to determine that the meter error for any of the meters in question was due to some cause, the date of which can be fixed. Therefore, staff recommends that any refunds be limited to bills rendered during the 12-month period preceding the date the meter was removed.

ISSUE 5: What interest rate should be used, if any, in calculating the refunds?

RECOMMENDATION: Interest should be assessed on the refunded amount and should be calculated in accordance with Rule 25-6.109, Florida Administrative Code. (Kummer, Wheeler)

STAFF ANALYSIS: Staff recommends that interest be paid on all refunds in accordance with Rule 25-6.109, Florida Administrative Code. During the period meters were over-registering, the amount of money over-billed was unavailable for use by the customers. The foregone use of the funds represents a cost to the customers that should be recouped in part through interest on the over billed amount.

All refunds to current customers should be paid with interest at the 30-day commercial paper rate as specified in Rule 25-6.109, Florida Administrative Code. Subsection (4) of Rule 25-6.109 sets forth the manner in which interest shall be calculated. Subsection (5) of the rule states that for customers still on the system, the refund shall be made on the bill, or if the customer is no longer on the system, the utility shall mail a check to the last known billing address of the customer. Subsection (6) of the Rule requires the utility to provide monthly reports on the status of the refund. If any refunds remain unclaimed at the end of the refund period, the utility shall suggest a method of disposing of any unclaimed amounts, subject to Commission approval.

All refunds to current customers, with interest, will be in the form of a credit on the customers' bills beginning no later than the first billing cycle day of the second month after the Order requiring the refunds becomes final. Refunds to former customers will be completed as expeditiously as reasonably possible.

ISSUE 6: Which rate schedule should be applied to calculate refunds for customers who formerly used Type 1V meters that over-registered demand outside of tolerance?

RECOMMENDATION: To calculate the refunds, the same rate schedule under which the accounts were originally billed through the defective meters should be applied. (Kummer, Wheeler, C. Keating)

STAFF ANALYSIS: This issue addresses which rate schedule should be applied in order to determine the amount of refund due. Under FPL's rate structure, accounts whose monthly demands are between 21 an 499 kilowatts (kW) are generally required to take service under the General Service Demand (GSD-1) rate schedule. To qualify for service under the lower General Service Large Demand 1 (GSLD-1) rate, accounts must have monthly billing demands of at least 500 kW. As a result, when the historic billing demands of, some accounts are adjusted downward to correct for over-registering thermal demand meters, it appears that the accounts may not have qualified for service under the GSLD-1 rate schedule under which they were originally billed.

FPL has suggested in informal discussions that it may be appropriate to calculate refunds based on the rate that would have applied (i.e., the GSD-1 rate) had the meters been operating properly. Because the GSD-1 rate is higher than the GSLD-1 rate, such an adjustment results in lower refunds €or the affected accounts. staff does not believe such an adjustment is appropriate.

Although a different rate schedule may have been applied had the metering error not occurred, staff believes that the adjustment unfairly penalizes customers who were billed on the incorrect rate through no fault of their own. It is the utility's responsibility to ensure that its meters are operating properly and that customers are billed under the correct rate schedule based on their monthly demand. Staff believes that it is unfair to reduce refunds to customers because FPL failed to fulfill that responsibility. Staff therefore recommends that the same rate schedule under which accounts were originally billed through the defective meter should be applied to calculate any refunds due.

ISSUE 7: Should this docket be closed?

RECOMMENDATION: If no person whose substantial interests are affected by the proposed agency action files a protest within 21 days of the issuance of the order, this docket should be closed upon the issuance of a consummating order. (C. Keating)

STAFF ANALYSIS: At the conclusion of the protest period, if no protest is filed, this docket should be closed upon the issuance of a consummating order.