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March 18, 2005

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RE: Docket No's. E-01345A-03-0775 and E-01345A-04-0657
Declaratory Order and Bill Estimation

Dear Sir/Madame:

Pursuant to the Procedural Order dated March 2, 2005, Arizona Public Service Company ("APS") hereby files its Settlement Testimony for David J Rumolo and Tammy McLeod in the above referenced Dockets.

If you or your staff should have any questions, please feel free to call me.

Sincerely,

Jana Van Ness/vld

Jana Van Ness
Manager
Regulatory Affairs

JVN/vld

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SETTLEMENT TESTIMONY OF

DAVID J. RUMOLO

On Behalf of Arizona Public Service Company

Docket No. E-01345A-03-0775

Docket No. E-01345A-04-0657

March 18, 2005

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SETTLEMENT TESTIMONY OF
DAVID J. RUMOLO
ON BEHALF OF ARIZONA PUBLIC SERVICE COMPANY
(Docket Nos. E-01345A-03-0775 and E-01345A-04-0657)

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is David J. Rumolo, and my business address is 400 North Fifth Street, Phoenix, Az 85004.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS DOCKET?

A. Yes, I filed Direct Testimony on November 23, 2004 and Rebuttal Testimony on January 24, 2005. My Direct Testimony described the bill estimating procedures used by APS in recent years and provided analyses that compared revenue levels under alternative bill estimation procedures. My Rebuttal Testimony addressed specific concerns of the Company with certain of the findings and recommendations of the interim report prepared by Staff's consultant, Barrington-Wellesley Group, Inc. ("BWG Report") as part of the Staff Inquiry into the Usage Estimation, Meter Reading and Billing Practices of APS.

Q. WHAT IS THE PURPOSE OF YOUR SETTLEMENT TESTIMONY?

A. My testimony provides explanations of and comments regarding certain of the terms of the Proposed Settlement Agreement dated February 25, 2005 ("Proposed Settlement" or "Agreement"). I will also explain why the Proposed Settlement is in the public interest. Since the Proposed Settlement covers a wide number of issues, my Settlement Testimony will address only portions of the Proposed Settlement, while APS Witness Tammy McLeod will addresses the other aspects of the Agreement.

II. SUMMARY OF SETTLEMENT TESTIMONY

Q. PLEASE SUMMARIZE YOUR SETTLEMENT TESTIMONY.

A. The Proposed Settlement compromises several contested issues regarding estimating usage in the absence of a valid meter reading in a manner acceptable to all parties. It also brings regulatory certainty as to the issues concerning estimation addressed in the Agreement, which in large part was the original goal of the Company's Application in Docket No. E-01345A-03-0775 back in the fall of 2003. Finally, it puts behind both APS and the Commission a dispute that has consumed tremendous resources of time and money on both sides.

In that first category, I place the applicability of certain language within two of our residential rate schedules, EC-1 and ECT-1R, as well as the appropriate remedy in those instances in which that language was not followed. I also include the issues of whether and for how far back the Company should be compelled to make retroactive bill adjustments for specific instances of over-estimation while not making adjustments in the opposite situation, especially when there is no dispute that such asymmetry will aggravate an overall underestimation and underbilling situation.

In the second category, the validity of bills issued using the Company's post-1998 bill estimation has been affirmed, subject to the specific exception noted in Paragraph 16. APS also has direction concerning what estimation procedures it should use prospectively (i.e., upon approval of the bill estimation tariff schedule called for in Paragraph 26) and a process by which future changes in those procedures can be implemented (Paragraph 28). Finally, there is agreement on those situations triggering an "estimated" bill, with all that entails under the provisions of A.A.C. R14-2-208, and those that do not (Paragraph 27).

As to the third benefit of the Proposed Settlement, I believe them obvious. The Agreement ends a dispute that has lasted for nearly two years, engendered a battle of expensive consultants, disrupted Company operations, and consumed resources on both sides far disproportionate to the dollars ever at issue.

III. THE PROPOSED SETTLEMENT

Q. WHAT ISSUES OF DISAGREEMENT REGARDING ESTIMATION PRACTICES DOES THE PROPOSED SETTLEMENT COMPROMISE?

A. There were essentially two such issues. The first concerned the degree to which APS had utilized and needed to utilize a procedure for estimating demand set forth in residential rate schedules EC-1 and ECT-1R. Associated with that issue is the appropriate remedy for those instances where both Staff and APS agreed the procedure was applicable but not followed. The second was the degree to which a Company-initiated policy of crediting individual customer bills for specific instances of overestimation of demand – a policy that had first been adopted by APS in the fall of 2003 before the Company filed its initial Application with the Commission – should be applied retroactively.

Q. PLEASE DISCUSS HOW THE AGREEMENT RESOLVES THE FIRST OF THESE TWO ISSUES.

A. Residential rate schedules EC-1 and ECT-1R contained language suggesting that when a meter reading could not be obtained because of a locked gate or safety condition, the customer's demand should be billed using the last valid meter read, usually but not necessarily the prior month's reading. Staff indicated in its testimony that it believed APS has never followed this procedure, which it also interpreted as applicable to all estimations of demand under these two rate schedules. Thus, Staff originally recommended a substantial fine against APS, but Staff did not suggest recalculating customer bills using the rate schedule procedure. Both APS and Staff agree that such a recalculation would likely produce a net benefit to the Company. APS noted that the rate schedule estimation procedure by its own terms applied in only two situations, locked gate and safety, which accounted for less than half of the estimated demands during the period analyzed by Staff. Further, as noted in Paragraph 3 of the Agreement, APS discovered during the course of these proceedings that the Company's Billing Service Representatives, which handled all demand estimations until early 1999, utilized the last demand reading in estimating residential demand, albeit not universally and perhaps not even systematically. It was not until demand estimation became automated with the "new" CIS that the rate schedule procedure was all but abandoned in favor of a load-factor based methodology. Because of these factors and also because APS did not profit to any degree from its failure to universally follow the rate schedule procedure (quite to the contrary, it lost money), APS believed a fine of any kind totally inappropriate.

In lieu of any fine, the Proposed Settlement requires APS to expend $600,000 on new programs and equipment designed to gain access to its customers' meters and thus reduce the need for estimation. To that $600,000 would be added any unclaimed refunds, an issue I will discuss next. APS is expressly prohibited from seeking any rate recovery of the $600,000. This solution attacks the underlying problem of customer meter access rather than getting bogged down on arguing about whose interpretation of the tariff is correct or debating how bills were estimated some twenty years ago. As such, it focuses on the future and not on assigning blame for the past.

Q. WHAT ABOUT THE ISSUE OF CUSTOMER CREDITS AND REFUNDS?

A. Beginning in September of 2003, APS instituted a policy of crediting customers for over-estimations of demand, as indicated by a subsequent meter read. As explained in Ms. McLeod's Rebuttal Testimony, the new policy was not without controversy because it aggravated an already existing problem of demand and bill underestimation. And since the underestimation was progressively larger the further one went back in time to the implementation of "new" CIS, it was determined not to make the change in policy retroactive.

Despite the Company's concerns, Staff recommended precisely such a retroactive application of the new APS policy. The Staff recommendation further called for adding interest to the adjustments, despite the Commission's unequivocal pronouncement in the *Ciccone* decision [Decision No. 59919 December 10, 1996)] that such interest was inappropriate "as a matter of policy." The Staff recommendation also ignored APS arguments that there were

statute of limitations and other statutory provisions limiting how far back the Company could be compelled to provide refunds or billing credits.

The Proposed Settlement essentially adopts the Staff position. APS grants full billing credits and refunds, with interest, back to the introduction of "new" CIS in 1998. The only "exceptions" are: (1) instances in which the impact of contract and rate schedule demand minimums made the overestimation of actual demand moot (because it did not impact the actual bill); (2) instances in which the customer had already received a credit for the estimation; and (3) instances where the affected customer has left the APS system and either had a refund due of less than $5 or cannot be located. The first of these three "exceptions" is only applicable to general service customers. The second could theoretically apply to both residential and general service customers, but APS has agreed only to claim an offset for such prior credits in the case of general service customers. In the third instance, any amount not refunded to an affected former customer, either because the amount was too small to justify the effort in locating such former customer or the former customer cannot be located to submit a claim under Paragraph 20, is added to the $600,000 for improved customer access that I previously discussed.

Q. DID STAFF AND APS DISAGREE ON EVERY ISSUE CONCERNING BILL ESTIMATION?

Absolutely not. Indeed, if we had not agreed on so much to begin with, it is doubtful we could have come to settlement. For example, Staff and APS agreed that Complainant Avis Read had not been overbilled (Paragraph 9). They agreed that APS' demand estimation process was consistent with Rule 210 (Paragraph 8) and resulted in underestimation of demand on average, both in absolute terms

and relative to the process outlined in rate schedules EC-1 and ECT-1R (Paragraph 7). Staff and APS further agreed that irrespective of whether the 1998 amendments to Rule 210 were ever effective, any alleged violations of their provisions neither warranted a fine nor affected the validity of bills issued since 1998 using the estimation procedures implemented by the Company with "new" CIS (Paragraph 34).

Q. HOW DOES THE PROPOSED SETTLEMENT PROVIDE APS WITH THE REGULATORY CLARITY SOUGHT IN ITS 2003 APPLICATION?

A. Paragraph 27 adopted Staff witness Rowell's recommendations as to what circumstances result or do not result in an "estimated" bill for purpose of the Commission's regulations. As it turns out, Mr. Rowell agreed with the Company's position on this issue, and therefore it represented another issue that did not need to be compromised because there was, in fact, no disagreement between Staff and APS. I previously discussed the status of bills issued since Commission approval of the 1998 amendments to Rule 210, which was also the subject of the Company's 2003 Application. Finally, Paragraphs 12-15 provide for a new process to estimate demand. Although the Company would have preferred retaining its existing demand estimation procedure, especially considering the significant unrecoverable cost to change to this new methodology (Paragraph 25d), an alternative clearly contemplated by the original 2003 Application was a Commission directive as to how usage and demand should be estimated and an agreed-upon methodology for implementing future changes to whatever methodology the Commission authorized (Paragraph 28).

Q. WHAT ABOUT THE BENEFITS OF FINALLY ENDING THIS NOW LONG-STANDING CONTROVERSY OVER BILL ESTIMATION AND METER READING PRACTICES?

A. As I indicated in my Summary, these benefits are both obvious and substantial for both sides. From the Company's perspective, the benefits of getting this matter behind it were some of the primary drivers in leading it to agree with Staff's terms for settlement.

IV. CONCLUSION

Q. DO YOU HAVE ANY CONCLUDING REMARKS?

A. Yes. The Proposed Settlement is a fair and reasonable compromise. It provides substantial benefits to APS customers, both current and former. It should lead to a reduction in access-related bill estimation, provides regulatory certainty and clarity where none existed before. Finally, it ends a near two-year dispute that has consumed very significant resources of time and money on both sides. I urge the Commission to adopt this Agreement.

Q. DOES THAT CONCLUDE YOUR SETTLEMENT TESTIMONY?

A. Yes.

SETTLEMENT TESTIMONY OF TAMMY MCLEOD

On Behalf of Arizona Public Service Company

Docket No. E-01345A-03-0775

Docket No. E-01345A-04-0657

MARCH 18, 2005

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SETTLEMENT TESTIMONY OF TAMMY MCLEOD
(Docket Nos. E-01345A-03-0775 and E-01345A-04-0657)

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Tammy McLeod. I am the General Manager of Customer Service and Southern Arizona operations for Arizona Public Service Company ("APS" or "Company"). My business address is 2121 W. Cheryl Drive, Phoenix, Arizona.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS DOCKET?

A. Yes, I filed Direct Testimony in this proceeding on November 23, 2004.[1] That testimony explained the background facts relating to APS' meter reading practices and bill estimation procedures, and various other matters. I also filed Rebuttal Testimony regarding the interim report prepared by Staff's consultant, Barrington-Wellesley Group, Inc. ("BWG"), as well as Complainant's "testimony"[2] and Complaint filed with the Commission.

Q. WHAT IS THE PURPOSE OF YOUR CURRENT TESTIMONY ?

A. My current testimony addresses various issues relating to the proposed settlement agreement ("Settlement" or "Agreement") that the parties to this proceeding entered into on February 25, 2005. In doing so, I am aware that APS has not filed any responsive testimony to Staff's January 23, 2005 direct case, which puts this

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[1] There was one small formatting error in my testimony filed on November 23, 2004. Corrected testimony was filed on January 7, 2005.

[2] Complainant did not file any actual testimony with the Commission. Instead, Complainant only filed the depositions of a number of APS employees who had been deposed by Complainant's counsel in a now-dismissed Superior Court action.

matter in a somewhat different procedural status than, for example, the Company's presently pending rate case settlement. Thus, I will also address some of the issues raised by such testimony, most specifically the proposed fines against the Company. As I discuss later, these proposed fines were dropped as part of the Settlement.

Q. WOULD YOU PLEASE SUMMARIZE YOUR CURRENT TESTIMONY?

A. My testimony focuses on the reasons that APS agreed to the Settlement, a brief explanation of some of the provisions of the Agreement, and some background relating to the Settlement. In general, APS agreed to the Settlement because, after full development of the underlying facts by Staff and Staff's outside consultants (BWG) as well as by APS and its own outside consultants (Accion Group and Ascent Group), APS determined that there were relatively few disputed issues and that resolution of those disputed issues by mutual agreement was more productive than contesting those remaining issues at a Commission hearing.

APS witness David Rumolo will also provide testimony regarding various aspects of the Settlement.

II. ISSUES RELATING TO MRS. READ AND HER COMPLAINT

Q. THE SETTLEMENT (PARAGRAPH 35) CALLS FOR DISMISSAL OF MRS. READ'S COMPLAINT WITH PREJUDICE AND DOES NOT PROVIDE FOR RECOVERY BY MRS. READ OR HER ESTATE OF ANY AMOUNT. CAN YOU EXPLAIN WHY?

A. Yes. Once the facts relating to Mrs. Read's complaint were developed and were fully examined by Staff's outside consultants (BWG), there was complete agreement that, although Mrs. Read's bills were estimated on several occasions because the APS meter reader was prevented from accessing Mrs. Read's meter

due to a locked gate or the presence of a dog, APS had not over-estimated Mrs. Read's bill on any of those occasions. On the contrary, the undisputed evidence was that APS consistently under-estimated Mrs. Read's bills. As the BWG Report states (at page I-10): "Contrary to the allegations contained in the Read Complaint, the main problems with the estimated bills issued to Mrs. Read . . . are that the estimates are too low rather than too high." This is also acknowledged by all of the parties in Paragraph 9 of the Settlement. Thus, there was no evidence that Mrs. Read had been financially harmed in any way by the estimated bills she received on those occasions when her meter could not be accessed.

Q. NEVERTHELESS, I NOTE THAT IN RECITAL 5 OF THE SETTLEMENT, APS ACKNOWLEDGES THAT IT COULD HAVE DONE EVEN MORE TO OBTAIN ACCESS TO MRS. READ'S METER. CAN YOU EXPLAIN THE REASON FOR THAT RECITAL?

A. Yes. Although APS believes that its meter reader took reasonable steps under the circumstances to obtain access to Mrs. Read's meter, including door hangers, phone calls to her, and written communications with her (all of which I explained in detail at pages 20-23 of my Rebuttal Testimony dated January 24, 2005), APS accepts Staff's assertion that it could have done even more to obtain access, such as knocking on the door or checking with a neighbor. As I noted in my previous testimony in this proceeding, APS makes every reasonable effort to obtain access to meters, particularly demand meters, and APS seeks to avoid the drastic remedy of cutting off electric service to customers, such as Mrs. Read, who consistently deny access to their meter. Moreover, it should be noted that customers, like Mrs. Read, have an obligation under Commission regulations (A.A.C. R14-2-209(D)) to provide safe and unassisted access to their meter, as all parties to the Settlement have acknowledged in Paragraph 29 of the Settlement.

Q. THE SETTLEMENT ALSO STATES IN RECITAL 4 AND PARAGRAPH 36 THAT APS DID NOT SEND MRS. READ ANY BILLS FOR FIVE MONTHS FROM SEPTEMBER 1999 TO JANUARY 2000 DUE TO IMPLEMENTATION PROBLEMS WITH ITS CIS. WHAT IS THE SIGNIFICANCE OF HAVING THESE STATEMENTS IN THE SETTLEMENT?

A. The problems stemming from APS' conversion to its new Customer Information System (CIS) in late 1998 and 1999 were one-time events that were similar to problems experienced by virtually every electric utility that has engaged in a CIS conversion in the last decade. (See the Accion Report attached hereto as **Exhibit TM-1.**) Many of these problems were made known to the Commission at the time. (See the document attached hereto as **Exhibit TM-2** in which Commission Staff acknowledge in 1999 the efforts made by APS to deal with CIS conversion problems.) Moreover, APS took numerous measures to limit the impact of these conversion problems on customers, including a series of letters to customers explaining the unusual circumstances giving rise to these problems and the resultant impact on APS' ability to generate some bills on a timely basis. Attached hereto as **Exhibit TM-3** are copies of some of those letters and other communications. Those letters and other communications with customers made it clear that APS would work with the customers in every reasonable way to minimize the impact or inconvenience to customers, including, if requested by the customer, an extended period for payment of any delayed bills. It was the continuation of these CIS transition problems that resulted in the fact that APS did not send Mrs. Read bills from September 1999 through January 2000. APS regrets that occurred, but as Staff Witness Matthew Rowell notes in his testimony dated January 24, 2005 (at page 16), "implementation of a new CIS is a difficult undertaking and . . . it can result in significant billing problems even though it is managed appropriately."

In this instance, when Mrs. Read received a delayed bill in February 2000, the total amount of the cumulative bill was $6,336, and Staff believes that may have caused an unexpected hardship for Mrs. Read (although neither Staff nor its consultants ever spoke with Mrs. Read). In response, APS pointed out that more than $4,000 of that amount had nothing to do with the fact that she had not been billed for five months. In fact, most of the bill ($4,600) was a prior balance for which Mrs. Read had been previously billed as of August 23, 1999, but which she had not paid. In any event, APS accommodated Mrs. Read by allowing her three months to pay the February 2000 charges, and APS assessed no penalty or late fees, nor took any other action during this period (such as sending a late notice) to collect this balance, even though most of the bill had nothing to do with delayed billings by APS. Nevertheless, APS agreed to Paragraphs 36 and 37 of the Settlement to acknowledge its obligations to bill customers in accordance with Commission regulations, but at the same time explain the unique circumstances relating to its failure to send bills for several months in late 1999 and early 2000 to Mrs. Read and number of other customers as a result of the CIS conversion problems, which problems were corrected long ago.

Q. STAFF'S ORIGINAL RECOMMENDATION WAS TO FINE APS $20,000 IN CONNECTION WITH APS' FAILURE TO BILL THE READ ACCOUNT FOR FIVE MONTHS IN LATE 1999 AND EARLY 2000, BUT THERE IS NO SUCH PROVISION CONTAINED IN THE SETTLEMENT. PLEASE EXPLAIN.

A. In lieu of any fine, APS agreed to expend considerable sums to improve training of Billing Service Representatives, to improve communications with customers, to improve meter reading procedures, and to modify its bill estimation procedures.

Q. IN YOUR OPINION, WOULD A FINE HAVE BEEN APPROPRIATE EVEN ABSENT A SETTLEMENT?

A. No. Aside from any legal defense the Company may have interposed, APS believes that the circumstances did not justify a fine of any amount. APS failed to send Mrs. Read bills for a five-month period in late 1999 and early 2000 because of the unfortunate problems that occurred with the conversion to the new CIS system. As explained above, APS took reasonable measures to alleviate any financial burdens for customers that may have resulted from those computer problems.

Staff's major concern appears to have been based primarily on the fact that Mrs. Read did not receive an extended payment plan and that she received a $6,000 bill in February 2000. However, as set forth above and in my Rebuttal Testimony filed on January 24, 2005, there is no indication that Mrs. Read wanted or needed an extended payment plan, and she took three months anyway to pay the bill without any penalty by APS. Further, even though Mrs. Read received a bill for over $6000 in February 2000, approximately $4,600 of those charges had been incurred (and timely billed) prior to the time that the new CIS failed to send Mrs. Read bills in late 1999. In reality, if Mrs. Read had paid the $4,600 when those amounts were due, she would have received a bill in February 2000 for approximately $1,700. APS understands that $1,700 is still a significant amount and we regret that Mrs. Read was not billed for this five-month period. But Mrs. Read had received very substantial bills previously because of her rather high usage of electricity, and there is no reason to believe that Mrs. Read considered this bill to be a particular hardship.

Q. THE SETTLEMENT CONTAINS NO PROVISION FOR PAYMENT OF FEES TO MRS. READ'S ATTORNEYS, ALTHOUGH PARAGRAPH 35 STATES THAT THE AGREEMENT DOES NOT PROHIBIT HER ATTORNEYS FROM SEEKING FEES TO WHICH THEY MAY BE ENTITLED UNDER APPLICABLE LAW. WHY IS THIS PROVISION IN THE AGREEMENT?

A. It was APS' position throughout that Mrs. Read's attorneys had no statutory basis for recovery of attorneys' fees, that Mrs. Read had not prevailed on the merits, and that the Commission had no jurisdiction to entertain such a request for fees in any event. This language relating to attorneys' fees was inserted in Paragraph 35 to preserve whatever right they may have to seek recovery of fees from the Superior Court.

III. APS' FAILURE TO IMPLEMENT THE DEMAND ESTIMATION PROCEDURES SET FORTH IN RATE SCHEDULES EC-1 AND ECT-1R

Q. IN RECITAL 3 AND PARAGRAPH 6 OF THE SETTLEMENT, APS ACKNOWLEDGES THAT IT FAILED TO FULLY IMPLEMENT THE DEMAND ESTIMATION PROCEDURES OF RATE SCHEDULES EC-1 AND ECT-1R, AND STAFF HAD ORIGINALLY PROPOSED A FINE OF MORE THAN $500,000 FOR THIS FAILURE. WHAT DOES THAT AGREEMENT PROVIDE?

A. As noted earlier, and in lieu of such fines, APS must expend substantial sums (exceeding $600,000) to change various aspects of its bill estimation procedures and related business practices. (See Paragraphs 23 and 24 of the Settlement.) It was further agreed that APS would not be permitted to seek cost recovery of these (and various other) expenditures called for under the Settlement. (See Paragraph 25 of the Settlement.)

Q. WHAT WERE THE CIRCUMSTANCES BEHIND THIS SITUATION AND WHY DID APS BELIEVE A FINE INAPPROPRIATE?

A. First, it should be noted that APS brought this circumstance to Staff's attention as soon as it was discovered by APS. Second, the EC-1 and ECT-1R Rate Schedules went into effect in approximately 1983 and 1988, respectively, and APS believes that it adhered to the demand estimation procedures in those Rate Schedules in many if not most instances until sometime in the mid or late 1990's — perhaps as late as the conversion to APS' new CIS system in the late 1990's — but records

are not available to confirm the precise history relating to how long and to what extent the demand estimation procedures in these Rate Schedules were followed by APS. Third, the demand estimation procedures in these Rate Schedules (which required that, if demand needed to be estimated, the estimated demand would be the last demand reading for that customer) expressly applied only in the limited circumstances of a lack of meter access due to "a locked gate" or "safety" reasons; the Rate Schedules did not address the numerous other reasons (such as weather, equipment failure, etc.) that require bills to be estimated. Fourth, APS demonstrated that if APS had followed the demand estimation procedures of these Rate Schedules in later years, there would have been less net **under-billing** to customers on these Rate Schedules (that is, estimated bills would on average have been higher) than under the demand estimation procedures that APS actually used in those years. And fifth, there was no evidence that APS intentionally disregarded the demand estimation procedures of these Rate Schedules; on the contrary, APS believes that the failure to systematically follow those demand estimation procedures in the instances where access was denied because of a "locked gate" or for "safety" reasons was an oversight (and one that produced no financial benefit for APS).

IV. NEW DEMAND ESTIMATION PROCEDURES

Q. THE SETTLEMENT CALLS FOR APS TO IMPLEMENT AN ENTIRELY NEW ESTIMATION PROCEDURE FOR DEMAND ACCOUNTS. PLEASE EXPLAIN WHY THIS IS BEING DONE AND WHAT THE EXPECTED BENEFITS OF THIS CHANGE WILL BE.

A. First, APS wishes to note that all parties agreed in the Settlement (Paragraph 8) that APS' current demand estimation procedures (which use class average load factors to estimate demand) are consistent with the requirements of A.A.C. R14-2-210. Moreover, APS demonstrated that its use of class average load factors to

estimate demand consistently resulted in net overall **under-billing** to customers rather than net over-billings as had been alleged in the Read Complaint. Nevertheless, APS recognizes that there are numerous procedures that can be used to estimate demand and that reasonable minds can differ as to which way is best. Thus, based on the recommendations of Staff's consultants, APS has agreed as part of the Settlement to change its demand estimation procedures to implement the procedures set forth in Paragraphs 11 through 16 of the Settlement. Summarized briefly, this new demand estimation procedure will rely on available customer-specific or premises-specific prior demand readings to the extent possible. A class average load factor will be used only if customer-specific or premises-specific prior demand readings are not available.

Q. AS PART OF THE SETTLEMENT, IS APS AGREEING TO MAKE ANY CHANGES TO ITS CURRENT PROCEDURES FOR ESTIMATING CONSUMPTION (KWH) AS OPPOSED TO DEMAND (KW)?

A. No. There has been no finding that APS' current procedures for estimating consumption (kWh) require any changes. APS has agreed, however, to conduct a study to determine the impact of reclassifying May as a non-summer month for purposes of kWh estimation. (See Paragraph 17 of the Settlement .) Once the study has been completed, APS will report its findings to the Commission and will discuss whether a change in its kWh estimation procedures is desirable.

V. METER READING ISSUES

Q. YOU MENTIONED EARLIER THAT APS HAS AGREED TO IMPLEMENT A VARIETY OF NEW METER READING AND OTHER PROCEDURES DESIGNED TO REDUCE THE NUMBER OF "NO ACCESS" METERS AND TO EXPAND COMMUNICATION WITH CUSTOMERS REGARDING ACCESS AND BILLING ISSUES. PLEASE EXPLAIN?

A. By way of background, it is important to note (as APS' consultants pointed out) that APS has a higher percentage of residential customers on demand billing accounts than virtually any electric utility in the country. Indeed, most other Arizona electric utilities have little or no residential customers on demand billing accounts. Unlike non-demand meters (which can be read or scoped from a distance and do not need to be reset each month), a demand meter must be accessed each month so that the demand dial on the meter can be reset to zero. This presents a special challenge to APS because of APS' high percentage of customers on demand billing accounts. And, of course, it is no response to say that APS should reduce the number of residential demand accounts, because such accounts are very beneficial to the customer and allow the customer to significantly reduce his or her utility bill by simply managing the rate of consumption to minimize spikes in demand during a billing cycle. In spite of these challenges, APS currently has a meter-reading rate (98.99%) that is **above** the national and local industry average. (See Accion Report, **Exhibit TM-1** hereto, at page 20.) It was also shown that APS has more experienced meter readers and despite the high number of demand meters, has a meter-reading accuracy rate above industry average and fewer inaccessible meters than the industry average. (Id.)

Thus, although it is undisputed that APS is performing very well under its current meter reading procedures, the Settlement provides for APS to expend substantial

sums of money to improve and upgrade its meter reading procedures and technology. For example, APS will spend more than $600,000 on an Access Improvement Program that will be designed to achieve even further reductions in the number of "no access" issues. This Access Improvement Program will include such things as remote ports or similar devices, advanced metering systems, and enhanced radio technology — all of which would potentially permit meters to be read and reset electronically to one extent or another, thereby reducing the need for a meter reader to access the meter. (See Paragraphs 22 through 24 of the Settlement.)

Q. WHAT ELSE DOES THE SETTLEMENT AGREEMENT PROVIDE WITH RESPECT TO METER READING ISSUES?

A. APS has agreed to implement or improve various meter reading reports and install meter reading performance measures. In addition, we have agreed to continue with activities and slightly modify others such as: implementing a pilot program to evaluate the use of an auto-dialer to communicate with customers who have repeatedly presented access problems, publishing a policy of periodic inspection by meter reading supervisors of repeated "no access" locations to ensure that corrective measures are taken, participation in benchmarking studies with other utilities relating to access issues, and various other procedural and technological measures. (See Paragraph 32 of the Settlement.)

Q. WHAT MEASURES HAS APS AGREED TO IMPLEMENT AS PART OF THE SETTLEMENT TO IMPROVE CUSTOMER COMMUNICATIONS AND CUSTOMER SERVICE?

A. As set forth in Paragraph 33 of the Settlement, APS has agreed to implement some new training procedures for Billing Service Representatives and others involved in bill estimation matters regarding the importance of timely and accurate customer

bills, adherence to Commission rules and tariffs, and procedures for more effective communication with customers. In addition, APS has agreed to provide clearer information on re-bills regarding the reason for the re-bill and that the customer need pay only the re-billed amount.

Q. IN PARAGRAPHS 19 THROUGH 21 OF THE SETTLEMENT, APS HAS AGREED TO GIVE CREDITS OR REFUNDS TO THOSE CUSTOMERS WHOSE ESTIMATED DEMAND READINGS BETWEEN SEPTEMBER 1, 1998, AND OCTOBER 1, 2003, WERE HIGHER THAN THE SUBSEQUENT READ. WHY ARE SUCH CREDITS OR REFUNDS BEING MADE?

A. In September 2003, APS made the business decision that, notwithstanding the fact that APS' demand estimation procedures resulted in net overall **under-billings** to its customers, it would begin crediting those demand customers whose estimated demand readings in a month were higher than the subsequent actual demand read. APS chose not to make that practice retroactive at the time because (1) the extent of under-billing was even greater prior to 2003, and (2) any such credits are arguably unwarranted for any period of time because an over-estimate of demand in one month is probably offset by under-estimates relating to that same customer and is certainly offset by an allocable portion of the overall under-estimates for all demand customers. Nevertheless, APS agreed as part of this Settlement to retroactively apply those credits to September 1, 1998 (or to give refunds to those customers who are no longer APS customers who can be located with reasonable effort and who are entitled under the Settlement to credits of at least $5.00). If a customer who would receive a payment under the Settlement cannot be located, that amount will be added to the amount APS is required to expend under Paragraphs 22 through 24 to improve its meter reading and bill estimation procedures.

Q. WILL CUSTOMERS WHO RECEIVE THESE CREDITS OR REFUNDS BE PAID INTEREST ON THOSE AMOUNTS?

A. Yes. Although the Commission stated in the *Ciccone* decision (Decision No. 59919, Docket No. U-1345-96-162) that, as a matter of "Commission policy," "APS should not pay interest on any amounts that it refunds to customers due to over billings due to failures to reset customers' demand meters" (id. at page 13), and although (as the Commission noted in *Ciccone*) APS does not receive interest when a customer is under-billed, APS agreed as part of this Settlement to pay interest on the credits and refunds that it has agreed to give to customers.

Q. WHAT BECOMES OF APS' APPLICATION FOR DECLARATORY ORDER AS A RESULT OF THIS SETTLEMENT?

A. As part of the Settlement, Staff and APS have effectively addressed most of the issues raised by APS in its Application, but the Settlement "takes no position on the validity or the applicability of the amendments to A.A.C. R14-2-210." Specifically, with respect to Commission approval of APS' bill estimation procedures, the Settlement acknowledges the validity of APS' current and prior bill estimation procedures under Commission rules (see Paragraphs 18 and 34 of the Settlement), but the Settlement also requires APS to submit its new bill estimation procedures to the Commission as a tariff filing within 30 days of the Commission's approval of this Settlement and to make similar tariff filings for any changes in procedures in the future (see Paragraphs 16, 26 and 28 of the Settlement). Thus, on a going forward basis, APS' bill estimation procedures will be on file with the Commission irrespective of whether A.A.C. R14-2-210 requires electric utilities to do so generally.

Similarly, the parties have agreed in Paragraph 27 of the Settlement that Staff's answers to ten circumstances or questions raised by APS in its Application are acceptable and will become part of APS' bill estimation procedures.

In effect, therefore, the Settlement sufficiently addresses the issues raised in APS' Application for Declaratory Order and deals with them in a manner that is satisfactory to both APS and Commission Staff.

VI. COMPLIANCE ISSUES

Q. WHAT MEASURES ARE SET FORTH IN THE SETTLEMENT TO ENSURE THAT APS COMPLIES IN THE FUTURE NOT ONLY WITH THE TERMS OF THE SETTLEMENT BUT ALSO WITH COMMISSION RULES AND TARIFFS?

A. There are a variety of compliance measures in the Settlement and some of those have already been discussed, such as the requirement that APS file its bill estimation procedures with the Commission as a tariff filing. Perhaps the most important compliance provisions are those contained in Paragraphs 39, 40 and 41 which require APS to conduct various audits and internal reviews and report the results to the Commission. Various other compliance reports are required to be made by APS under the Settlement (see Paragraphs 17, 19, 24, 32(a), 32(c), 32(e), 32(f), 32(g), 32(h), and 33(a)).

VII. CONCLUDING REMARKS

Q. DO YOU HAVE ANY CONCLUDING REMARKS?

A. Yes. I think it is important to recognize that the extensive review conducted by Staff and its consultants and by APS' own consultants has shown that there was no systematic over-billing of customers whose bills were estimated by APS. On the contrary, the undisputed findings are that APS' bill estimation procedures have

consistently resulted in net overall **under-billing** of customers. By its very nature, bill estimation is not a precise science, and that is well demonstrated by the fact that bill estimation procedures differ from company to company and there is no industry standard for bill estimation — particularly no industry standard for estimating demand accounts. (See Accion Report at pages 6-7.) And, although APS has agreed as part of this Settlement to modify its bill estimation procedures and to implement a variety of new meter reading and billing practices, the Settlement also gives APS the ability to come back to the Commission to request further modifications if circumstances indicate that such further modifications are warranted.

Q. DOES THIS CONCLUDE YOUR SETTLEMENT TESTIMONY?

A. Yes.

EXHIBIT TM-1

INDEPENDENT ASSESSMENT OF ***METER READING AND*** *BILL ESTIMATION PRACTICES*

Prepared by

Accion Group

on behalf of

Arizona Public Service Company's
Application for Declaration Order
Docket No. E-01345A-03-0775

January 24, 2005

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EXECUTIVE SUMMARY AND CONCLUSIONS

To address the allegations contained in the Complaint filed by Avis Read at the Arizona Corporation Commission (Commission or ACC) on September 9, 2004, and any issues that might be raised by the Staff of the ACC in that proceeding, Accion Group was retained by Arizona Public Service (APS) to provide an independent assessment of the meter reading and billing practices of the company. From our review, we believe the recommendations of the consultants to the Staff are without merit and, if adopted, would needlessly add expense and regulatory burden, without any benefit to customers. Further, our review found the assertions of Avis Read to be unfounded and, at most, an isolated, non-recurring incident which does not justify new reporting requirements.

The review was undertaken to provide APS with an unbiased opinion on whether:

1. APS bill estimating procedures comply with industry standards and result in appropriate billings to customers
2. APS customers are treated fairly relative to estimation practices
3. APS practices minimize the need for estimated bills to the extent practicable of APS bills (0.9% in Metro Phoenix) estimated in 2004.
4. Meter readers use good utility practices to obtain a meter read.

Our review consisted of six parts:

1. A survey of electric utility meter reading and billing practices of utilities across the country
2. A survey of meter reading and billing regulation in the United States
3. Statistical analysis of the impact of APS bill estimation methodologies
4. Review of the report prepared by Barrington-Wellesley Group (BWG) Staff consultants filed on December 28, 2004 (BWG Report)
5. Review of the Complaint filed by Avis Read with the Commission on September 9, 2004
6. Interviews and observation of APS' billing processes from meter reading through the issuance of bills.

From our review we determined that:

Estimation Conclusions

1. APS billing estimation practices are reasonable and have, over time, benefited its customers.
2. Although no single industry standard exists, either nationwide or in Arizona, APS billing and bill estimating practices for both energy and demand are consistent with good utility practices

in the electric utility industry and are appropriate for the company's unique service territory and rate structure.

3. APS has successfully reduced the number of estimated bills to the point where it is one of the better performing electric utilities. APS read 98.99% of its meters in 2004.

4. Customers on a tariff without a demand charge cannot be harmed by an estimated bill, because once an actual meter read is obtained the billing will be adjusted to reflect actual energy usage.

5. APS' method of calculating demand charges is reasonable and consistent with good utility practices.

6. As a group, APS under-bills its customers for demand charges when bills are estimated.

7. There is no consistent regulatory policy in the United States or in Arizona regarding bill estimating procedures or requirements.

Meter Reading Conclusions

1. The APS service territory with its extreme climates, wide range of customer density is unique and presents significant operating challenges to meter access.

2. The availability of Residential rates in Arizona, which contain a demand charge, is unique in the industry.
3. APS meter readers make appropriate efforts to obtain a meter reading from each meter during each billing cycle.
4. There is no consistent regulatory policy in the United States or in Arizona regarding meter reading procedures or requirements.

Conclusions About the BWG Report

1. The Staff consultants have not adequately or appropriately evaluated the APS meter reading, billing, and bill estimating practices.
2. Adoption of the Staff consultants' recommendations would increase APS' operating costs without a corresponding benefit to customers.
3. Adoption of the Staff consultants' recommendations would potentially reward customers who deny APS access to their meter and shift cost to other customers.

Avis Read Conclusions

1. There is no evidence that Avis Read was over-billed.
2. The remaining allegations of Avis Read's are unfounded.

HOW THE INDEPENDENT ASSESSMENT WAS CONDUCTED

We conducted a survey of meter reading and estimated billing practices of utilities in the United States. Also, we surveyed regulatory practices in the United States for meter reading and bill estimation. To fully understand APS practices, past and present, we interviewed APS personnel with responsibility for meter reading and billing. Our interviews included supervisors and personnel who provide meter reading and billing services. As part of these interviews, we visited the APS billing department and sat with different billing representatives as they reviewed estimated bills for customers where meter access was denied or unavailable. Also, we accompanied meter readers for two days as they attempted to read every meter. We witnessed their efforts to obtain a meter read, even when access to a meter was denied, and witnessed their actions when encountering a malfunctioning meter and a possible tampering situation. Finally, we reviewed the report prepared by consultants for the Commission.

UTILITY METER READING AND BILL ESTIMATION PRACTICES

As described more fully on the following pages, APS employs meter-reading practices that are consistent with the practices generally employed in the industry. All participants in our study noted that access

to meters is a continuing problem. APS' practices to secure access to the meter are as comprehensive as any of the utilities surveyed. Several companies we surveyed have, in recent years, begun to implement Automated Meter Reading (AMR) to, in part, to address this problem. APS has advised us that it is presently in the process of pilot testing AMR for its residential (single phase) customers, and may continue to study deployment of those meters for parts of its service territory.

Availability of such meters for general service customers remains an issue. Reliable and cost effective AMR demand and TOU meters are now becoming available. Significantly, our survey found that there is no standard approach in the industry to calculating estimated usage by customers in those instances where a meter read was unavailable for whatever reason. The characteristics of each service territory, such as population density and climate, significantly impact the specific factors used in the estimation methods employed by our survey participants.

All of our survey participants based estimated energy usage on some combination of historical data, where available, including data from one or more prior months, and data from prior years. APS was no different in that regard. Various utilities computed estimates using factors that considered weather, some form of multiplier or seasonal load factors.

None of our survey participants had a procedure for routinely estimating demand. Typically, demand meters are used for larger commercial and industrial accounts where utilities reported that meter access is usually available. In those instances when a valid read was not available, they reported that follow-ups within the read window were attempted. This is consistent with APS' practices for larger commercial and industrial accounts. We did note that because of the broad application of APS General Service Rate Schedule E-32, APS has more access issues on this rate code. Also, unlike APS, our participants reported that they do not typically have demand rates for residential customers or install demand meters on residential accounts and therefore do not need to estimate residential demand. In those few instances where demand on a residential account needs to be estimated, there was no consistent approach to calculating an estimate. In those few incidents where it was necessary to estimate residential demand, there was no uniform or consistent approach used.

Our findings identify APS as unique in its need to, and the extent to which it must, estimate demand on residential accounts. As noted later in this report, we believe APS' approach to estimating customer energy usage and demand is appropriate and equitable to all customers.

SURVEY OF METER READING & ESTIMATED BILLING

During November and December 2004, Accion Group, in partnership with The Ascent Group and at the request of APS, conducted a survey of meter reading and estimated billing practices of utilities in the United States. The survey was done to determine if APS employs good utility practices and to assist in the evaluation of the merits of the allegations made by Avis Read in her complaint filed with the ACC on September 9, 2004. More than a dozen U.S. investor-owned electric, gas, or electric and gas combination companies were targeted. We investigated how the surveyed companies resolve difficult meter access accounts, and how accounts are billed when no actual read is available.

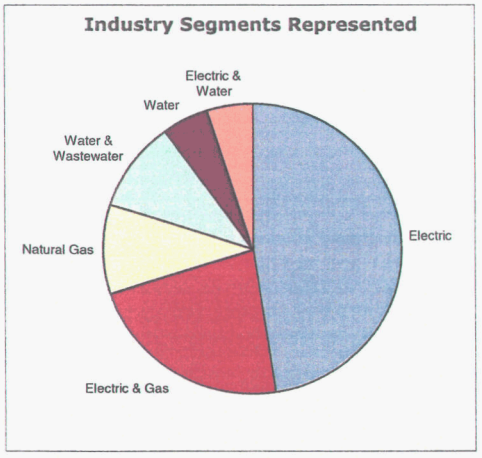
Scope of Survey

The utility companies were selected based on the following criteria:

- Geographically diverse
- Differing customer information systems
- Good industry reputations
- Mix of urban, suburban, rural accounts
- Known focus on difficult access accounts

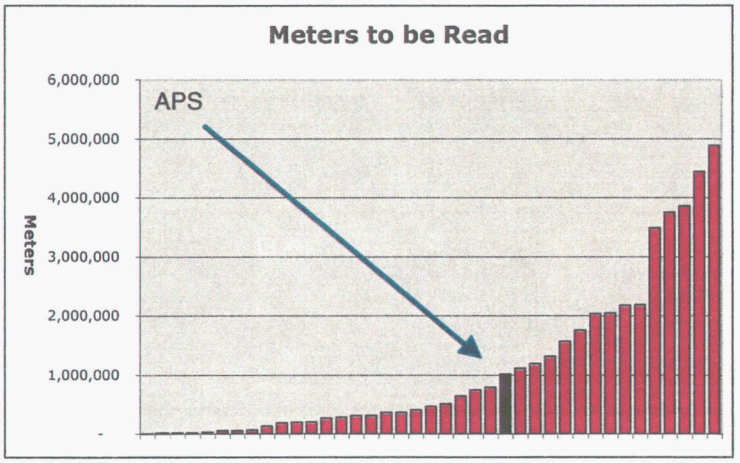
Including 12 specifically targeted companies, 39 utilities participated in our research. Nearly all companies participated in detailed telephone interviews of meter reading and billing personnel to examine meter reading practices, no-access resolution approaches, and billing estimation procedures. Additionally, participants completed on-line questionnaires.

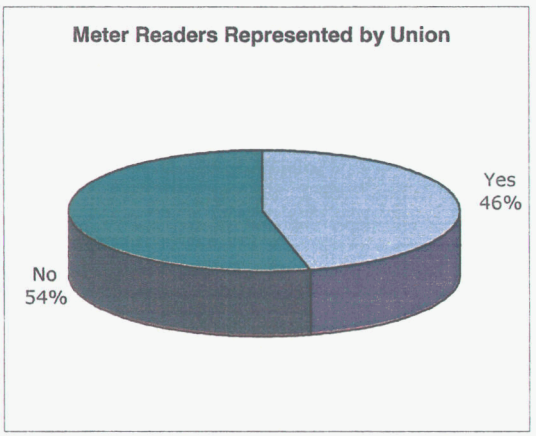
The survey included participants from all four corners of the US and in between. The number of meters read ranged from 4,500 to 4.9 million. Participants represented diverse service territories with an average meter density of 453 meters per square mile (high of 6,350 and low of 3 meters per square mile). Participating utilities also represent several industry segments -- electric service, natural gas service, water service, and wastewater service, with some providing more than one of these services. The participants included investor-owned, cooperative, government, and municipal utilities. More than half of participants were investor-owned electric utilities.



While the majority of study participants were from the United States, we did have several utilities from Canada and Australia.

Participants averaged 1.1 million meters to be read, roughly the same as APS.





Nearly half of participants have meter readers who are represented by a bargaining unit. APS' meter readers are represented by a bargaining unit.

Two surveys were used to gather information on two functional areas—Meter Reading and Billing. Specifically, we asked companies to tell us about their methods to secure a meter reading in situations of difficult or no access. We also asked companies basic information to better understand the management approach and philosophies of the Meter Reading department.

On billing, we asked companies to tell us how they deal with a "no read" account. Specifically the steps that are taken to communicate with the customer and the basic formulae used to estimate usage.

We contacted the companies by phone or email to identify the appropriate person in each area to respond to the questionnaire. A brief phone interview was conducted and/or participants completed an online survey form.

Study Objectives

The main objective of the study was to evaluate the various tactics and strategies used today to read customer meters and to bill estimated demand and energy use. Secondary objectives included understanding:

- The range of performance by company and by industry segment;
- How utilities are using technology to reduce costs and improve customer satisfaction;
- Other effective process improvement or cost-reduction techniques;

- How utilities measure individual, team, and center-level performance and encourage high productivity and performance;
- The role of meter reading training and its impact on performance.

Participants were asked to share management tactics and strategies, as well as identify any improvement in performance. The study also asked utilities to include considerations, successes, and plans moving forward.

Study Findings

Meter reading is still one of the more labor-intensive utility activities. While the use of automated meter reading technologies (AMR) is increasing, most utilities are reading the majority of their meters manually. Our panel reported an overall AMR implementation rate of 8.3 percent. The remaining 91.7 meters are read manually, usually on a monthly basis.

With all the changes in the utility industry and the economy, most utilities have been forced to reduce operating costs. At the same time, companies are being asked by regulators, customers, members, and shareholders to increase customer service and satisfaction. Essentially to "do more with less"—a daunting challenge for any organization.

The Meter Reading organization is effectively the cash register of the utility. Utilities must measure and bill energy or water use monthly (in most cases) in order to bill customers and facilitate the revenue collection process. Meter reading is the usage collection process that makes billing possible. Errors in meter reading result in billing errors or unbilled accounts that ultimately result in reduced collections and in higher operating costs. In addition, skipped meter readings result in estimated bills or no-bills. Accordingly, utilities have worked diligently to improve their meter reading processes and APS is no exception.

For many companies, the meter reader is an entry-level job, a planned stepping-stone into the company. And as such, meter reading departments can incur high turnover, thereby increasing the costs incurred to hire and train effective and efficient meter readers, and ultimately, increasing the cost to read a meter.

Clearly the meter reading organization is evolving with the introduction of automation. The diversity of metering and AMR equipment, complexity of accounts and billing, the challenges of service territory, and needs of different customer groups dictate different solutions for different companies. Regardless of the implementation rate, the transition from manual to automation is challenging from a technology and people perspective. Routes must be consolidated and optimized,

employee roles and responsibilities change with changing priorities, performance measurement metrics must shift to accommodate the mix of automation and manual effort, processes and systems change ... it's a challenging time for any organization. Even after automation, metering devices must be visited on occasion for testing and other reasons.

In this transition to automation and the quest for reduced operating expenses, most utilities are focusing on three approaches to meter reading improvement:

- Reducing costs of manual reads through contract negotiations, rerouting, more sophisticated hand-held equipment and meters, productivity improvement, and lowering overhead; many have maxed out these options; Some have reduced costs to a point that makes it difficult to justify AMR, for residential accounts.
- Contract meter reading to reduce overhead, tackle seasonal peaks, and as a strategy to transition to automated meter reading.
- Automated meter reading – some large-scale implementation as well as several strategies to pinpoint "high read cost" meters, unsafe meter locations, and high-turnover premises. Some companies have automated "key accounts" and commercial

accounts to accommodate real-time pricing and/or prepare for the competitive market.

The promise of automation, implementing AMR, remains the top plan for the future, whether they are proposing a partial or complete implementation, for our utility panel. APS is presently testing two AMR systems to determine the effectiveness and reliability of available meters and related software. Both systems appear to have the potential to offer significant benefits to APS if various technical and operating shortcomings, which may impede the widespread deployment of AMR, can be resolved.

Benchmarking performance is an effective technique to understand meter reading performance and to identify improvement opportunities. APS has consistently participated in benchmarking programs to compare its meter reading performance to its peers, to keep an eye on the industry, and to identify best practices and other improvement opportunities.

Meter Reading & Meter Access

- *Meter access is a continual challenge for all utilities.* Customers, terrain, and weather impact accessibility of meters. Meters once routinely accessible can be rendered inaccessible for reasons, such as home additions or modifications, dogs, fences, locked

gates, lock changes, landscaping. Weather and natural disasters also impact access, temporarily and permanently. Utilities are constantly challenged to resolve access issues to obtain a reading or perform service-related work at the premise. As long as customers flow in and out of the service territory and service is measured through a premise-based meter, utilities will be challenged to access each and every meter.

- *"No Access" approaches vary depending upon the level of emphasis, cost, and is closely tied to regulatory requirements.* Most companies attempt to resolve no access using the lowest-cost approaches—picking up skips later in the day, leaving a door hanger, printing a message on the bill, sending letters, and making calls. APS uses all of these approaches. Most companies have defined tolerances in their billing system that permit the system to estimate usage up to a point, and APS is no exception. When that point is reached, some utilities diligently pursue higher-cost no-access approach, such as making a field appointment or special trip to attempt a read, begin AMR installation, if viable, install company locks, relocate the meter, at customer expense, or terminate service. Most, however, continue to estimate usage for many months, even years, while

customers continue paying the bills. The approaches and timing of actions vary from company to company.

- *Performance metrics encourage diligence in obtaining a reading—hold the Meter Readers accountable for getting a read.* Many utilities participating in this study indicated that they held meter readers accountable for obtaining a read. In fact, most emphasized the importance of their role and how they would be held accountable. Measurements typically are put in place to gauge both individual and group performance. Incentives and awards are designed to compliment the measurement framework and encourage superior performance. The companies reported providing employees with a clear idea of job expectations and performance. Those companies also reported success in improving accuracy and increasing route completion rate. APS has also instituted a comprehensive meter reading evaluation and monitoring process that is relied on in the management of the meter reading process. APS continually evaluates both individual meter reader performance and group performance.

- *customer communications can be effective in resolving no access, alerting customers to estimated usage, as well as improving customer satisfaction.* Several high performing companies provide customer communications to remind them of the scheduled read date, ask them to open gates, tie-up dogs, or what ever is necessary to gain access. One company uses the same personnel to call customers to alert them to an estimated bill, and to request access, stating that the proactive communications is very satisfying to customers. APS uses several of these approaches.

- *AMR is being strategically deployed for high-read-cost, unsafe, inaccessible, and/or high turnover premises.* Half of our panel is using AMR or a similar technology to remotely read meters in difficult access locations. While a few utilities have or are in the process of implementing a company-wide AMR program, most indicated taking a strategic approach at cost reduction through AMR. The most popular plan for the future is AMR. To date, however, AMR has not been available for residential demand meter applications required by APS. And it is still difficult to obtain for 3 phase service.

- *Nearly all participants' demand meters are assigned to commercial establishments, making access a non-issue.* Participants reported that all or nearly all demand rate customers were commercial establishments. Even those with demand meters installed at a residence were not billing the customers on the demand rate.

Since virtually all demand billed and metered customers are larger commercial, utilities usually have little difficulty obtaining a reading and resetting the demand as long as the reading can be done during operating hours of the business. As a result, our participants rarely estimate customers billed on a demand rate, usually only in situations of a meter failure or a weather problem. Only one company in our panel installed recorders on all demand meters, primarily for load profile purposes. In the event a reading is missed, the company can access demand history from the recorder. While this is cost effective for a system with few demand meters, it would not be practical for a company, such as APS, with a large number of demand meters on smaller commercial customers.

- *Companies, including APS, encourage high performance through incentives and rewards* - The "best performers" identified in this study encourage excellence through incentive

programs and/or informal or formal reward programs. Programs varied from bonus pay, special recognition, gift certificates, "bucks" redeemable at the company store, steak dinners, and other non-cash awards.

- *APS has an above average read rate.* APS reads on average 98.99% of its meters. This is above the panel average of 98.2%. Read rates for participants ranged from 86% to 99.9%.

- *APS has an above average accuracy rate.* APS reads on average 99.97% of its meters accurately, without error (about 28 errors per 100,000 meters read). This is above the panel average of 99.8% (about 222 errors per 100,000 meter read). Error rates for participants ranged from 2 to 1,800 errors per 100,000 meters read.

- *APS has fewer inaccessible meters.* APS reported approximately 1% of its meters as inaccessible. This is below the electric industry panel average of 1.1% inaccessible meters.

- *APS meter readers, on average, have more read experience than panel average.* APS reported an average length of service for meter readers of 8 years. This is slightly higher than the panel average of 7.5 years.

- *APS experiences less turnover in meter reader personnel than panel average.* APS reported an average annual turnover of 10 percent, significantly below the panel average of 20 percent.

Billing & Estimation

- *There is no apparent standard industry approach to estimating kWh usage.* There is no apparent standard among our participant group for estimating kWh usage. While more than two-thirds reported the use of customer history, there is a wide variation in the exact factors used for the estimation. Companies based estimates on daily averages of prior customer usage for the: previous month, same season, same month last year, previous month and previous year, last year surrounding 3 months, last three months...The approaches were different from company to company and varied depending upon the availability of customer usage history.

- *Like the majority of participants, APS bases its kWh estimates on the customer's history, when applicable.* APS uses a daily average for the same season to estimate kWh usage. If this is not available, or is inapplicable (e.g., wrong season), prior month, same season or same month, prior year are used to estimate

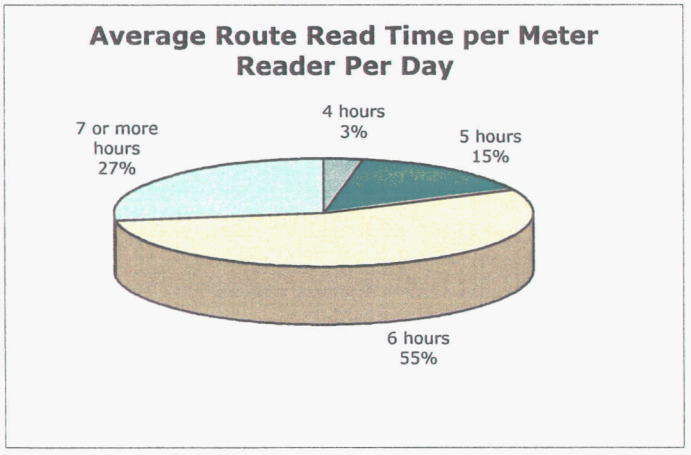
usage, or service address history, if individual customer history is insufficient.

- APS has the largest number of demand-rate residential customers in our panel and of any company that we are aware of in the U.S.
- Among our panel, only a couple of utilities reported having any residential demand customers and those that did had less than a dozen customers, most of which were churches (classified as residential for those utilities), none of which were an access issue. Residential accounts pose the greatest access challenge for any utility because, as we discussed earlier, it's usually much easier to gain access to larger commercial establishment.
- *Since most demand meters are for larger commercial accounts, companies make concerted efforts to obtain actual readings and avoid estimation.* Operating hours make demand meters more accessible to companies. As a result, few demand meters are access issues for utilities and very few demand-rate accounts are estimated. Our panel reported they were able to bill demand-rate customers on actual reads and had very few accessibility issues.

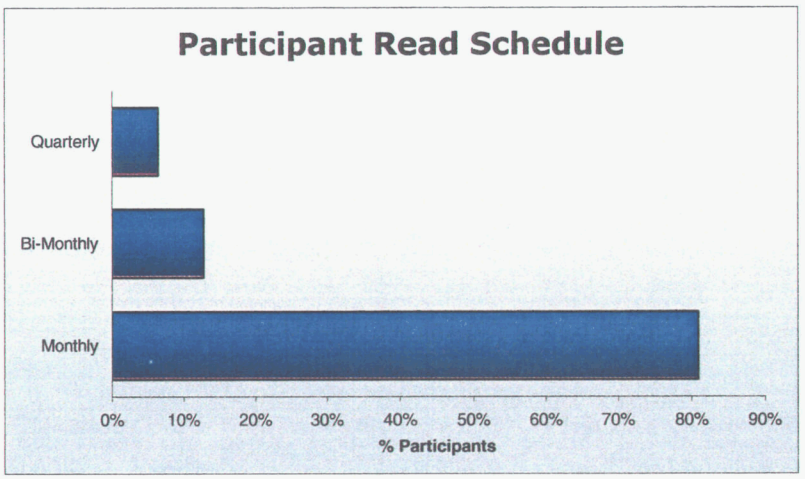
- *There is no apparent standard industry approach to estimating kW demand.* Our panel rarely estimated kW demand, usually in situations of meter failure or malfunction. In those instances, several approaches were used: using last month's kW demand, rate class average kW demand, customer history-based kW demand, or individually calculated kW using load research. The approaches varied from company to company, and in those using customer history, the time-periods selected to average also varied.

Study Observations

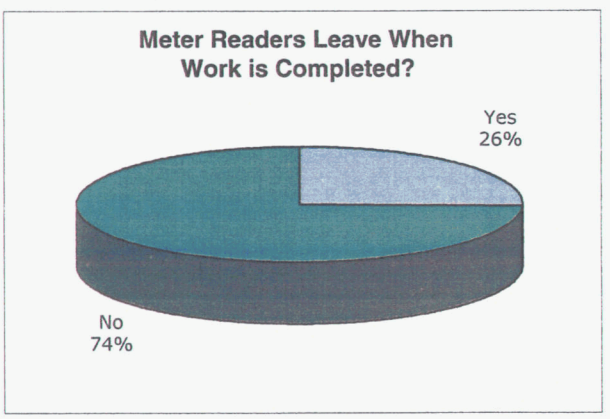
We received 39 valid survey responses from a diverse group of utilities. For the panel, route read time, per meter reader, averaged 5.8 hours (number of hours reading meter route, excluding breaks, lunch, travel to and from route). More than half of participants (55 percent) reported an average route read time of 6 hours per meter reader. Average route read time is heavily influenced by service territory, population density, and route design.



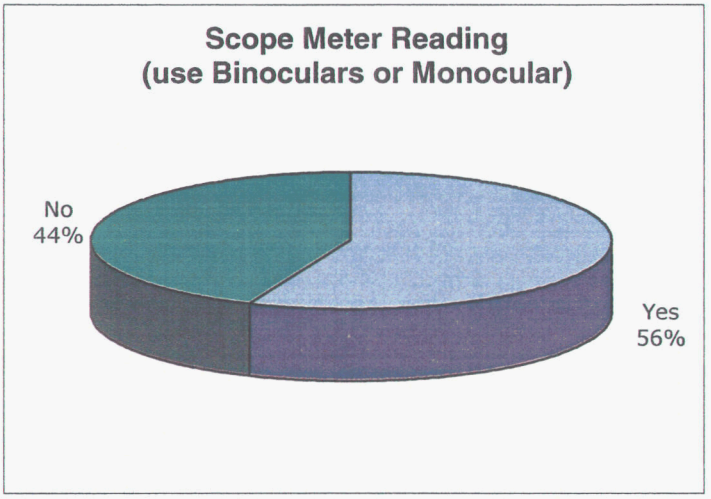
The majority of participating utilities read meters on a monthly basis (81 percent). Six utilities read on a bimonthly basis, and three utilities read quarterly.



The majority of participating utilities do not let meter readers go home after completing the day's assignment (74 percent). APS does not let meter readers go home after completing the day's assignment.



The majority of participating utilities do scope meter readings (56 percent) when necessary, using a monocular or binoculars. APS meter readers do scope readings when able.



As a group, participating utilities average route composition is 42 percent Urban (>450 meters per route), 38 percent Suburban (> 250 < 450 meters per route) and 20 percent Rural (< 250 meters per route). Territories range from primarily Rural to completely Urban.

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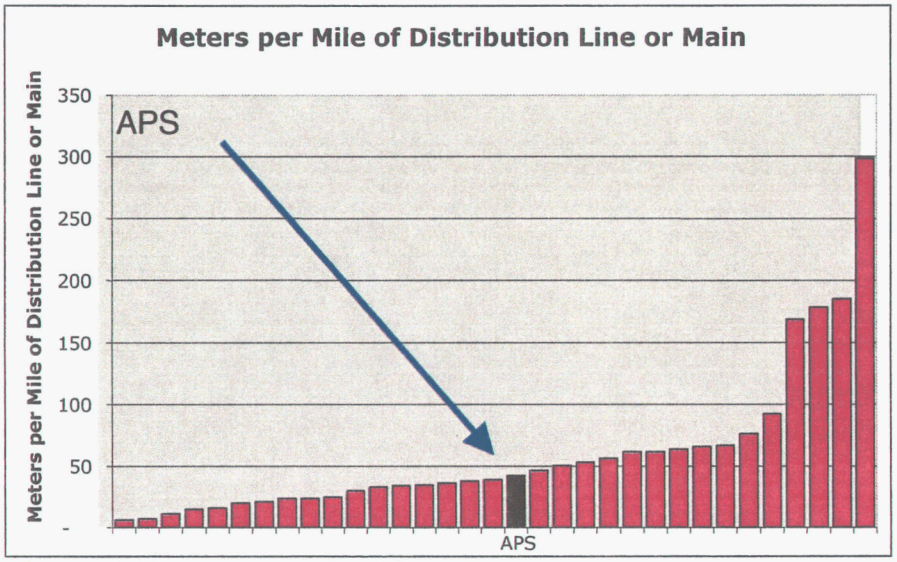
APS territory is primarily suburban (60 percent) and urban (40 percent) with relatively few rural routes. Nevertheless, as noted below, APS meter density is quite low.

Participants range from 35 square miles in service territory to 390,000, with an average of 22,675 square miles. In terms of meter density, the panel ranged from 3 meters per square mile to 6,349, with an average of 454 meters per square mile. The charts below detail meters per square mile and meters per mile of distribution line/main for the participant

	% Inaccessible Meters	% Indoor Meters
Electric	1.1%	0.7%
Natural Gas	4.1%	24.4%
Water	0.0%	2.7%
Combination	1.1%	12.4%
APS	1.0%	0.1%

group. APS has approximately 24 meters per square mile of service territory and 43 meters per distribution line mile, as denoted in the charts below.



Participants range from 7 meters per distribution line or main mile to 299, with an average of 70. Natural gas utilities exhibit the largest percentage of both inaccessible meters and indoor meters, as demonstrated in the table of industry averages below.

Participants range from no indoor meters to a maximum of 87 percent indoor meters. As a group, the panel averages a 5 percent indoor meter population. Averages for each industry segments are

presented below. APS is well within the electric industry norm for percent inaccessible meters and percent indoor meters.

Average years of meter reading experience ranged from 1 to 20 years, with an average for the group of 7.5 years. APS meter readers average 8 years read experience.

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Reported turnover for the panel was indirectly proportional to the years of reading experience. Companies reporting high turnover reported short length of service while companies with minimal turnover reported long length of service. The following chart details turnover percentages for the panel. As a group, annual turnover averaged 20 percent. APS averages 10 percent turnover, well below the average for the panel.

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Participants were asked to identify the measures used to evaluate meter reader performance. Surprisingly, many companies reported no measures of meter reading performance.

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APS measures meter reading performance based on all of the factors noted on the chart above. At APS, meter readers are provided

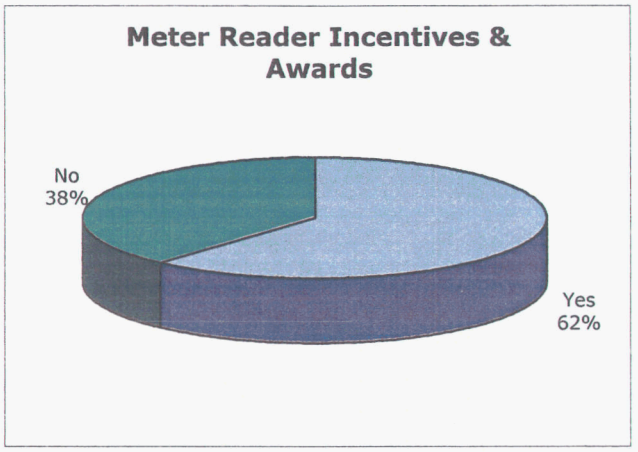
with written expectations for acceptable job performance and receive monthly performance progress reports. Pay reviews are conducted semi-annually. Additionally, individual and "shop" or group statistics are posted each month at APS in a "report card" for each meter reader.

For those reporting meter reading performance measures, the most popular was completion rate—the number of meters read per assigned route. The second most used measure was read accuracy or error rate. The next most popular measure focused on safety—accidents and injury. Read time was the fourth most used measure—actual time to read a route versus standard. Finally, attendance was the fifth most used measure.

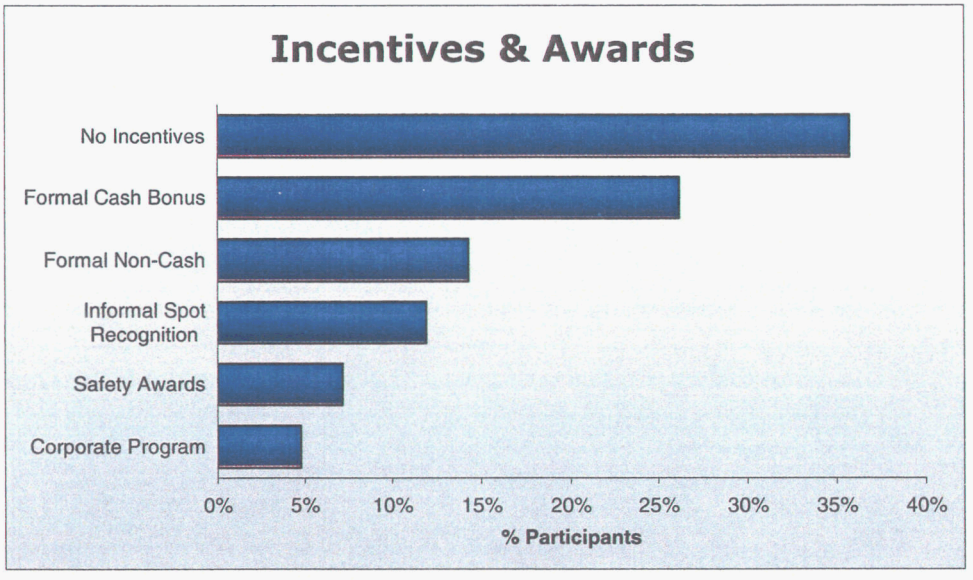
Other measures used included:

- Customer Relations
- Teamwork
- Complaints
- Amount of time worked daily
- Conduct
- Job Knowledge and Resource Management
- Communication
- Relationship with Supervisor

More than 60 percent of participants offer some kind of incentive or award program for meter readers. A formal "cash bonus" incentive is the



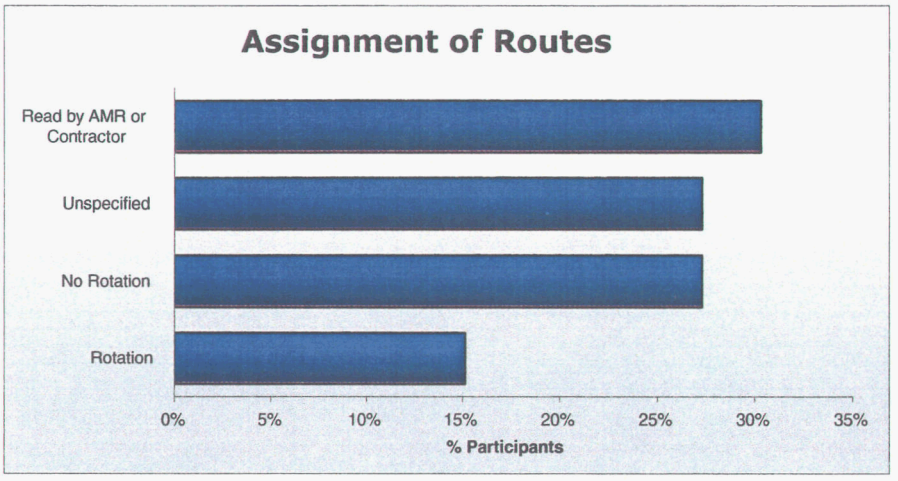
most popular—meter readers have the opportunity to earn bonuses based on superior performance. Non-cash incentives are the next popular—meter readers earn gift certificates, dinners, parking spots, trophies, and other non-cash items for superior performance. Other companies offer informal, on-the-spot recognition, usually through non-cash awards or through group recognition. Several companies use a combination of formal and informal awards to motivate performance.



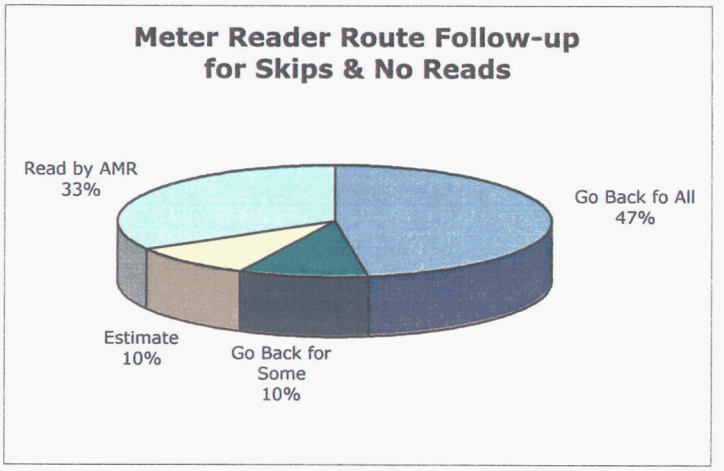
APS has an incentive system in place to encourage meter reader safety and performance. Using a "special pay" rate classification, meter

readers earn incentive pay on a rolling 6 months of performance, based on safety-zero accidents, equipment-$500 damage or greater=loss, error factor of .01, and 100% route completion. Awards and incentives include: special/senior pay based on performance, safety celebrations for shop safety records, "Living the Vision" awards, public acknowledgement of customer compliments, and individual recognition with movie passes, dinners, gift certificates.

Many utilities are using Automated Meter Reading (AMR) technology and/or contractors to read meters on a month-to-month basis. Those reading with company meter readers specifying route assignment, 27 percent do not rotate the assignment of routes among meter readers while 15 percent do rotate assignment of route. Those not rotating routes usually rely on a seniority-based bidding process for route assignment. Companies rotating routes reported rotating monthly, every 3rd month, every 4th month, and "round robin". APS meter readers exchange routes every 4th month with a "route swap partner."

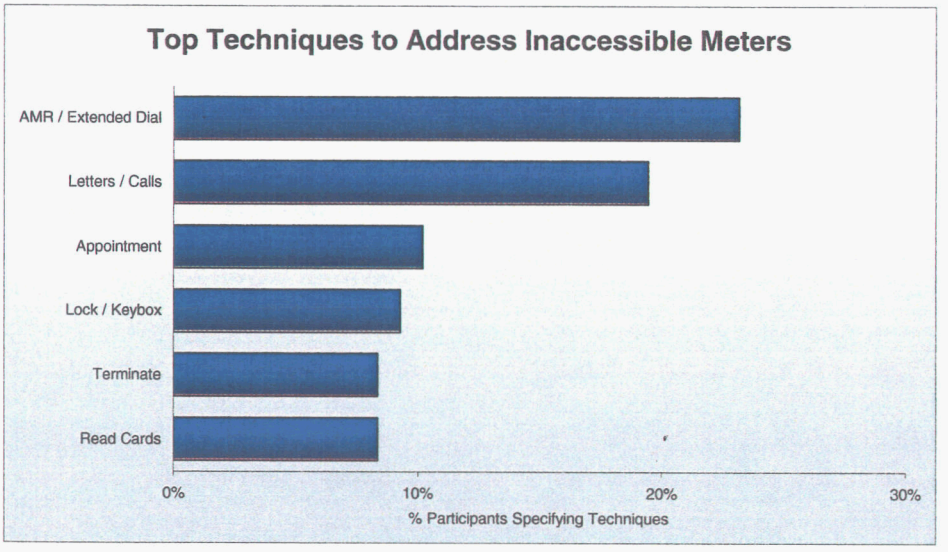


Companies have varying approaches to route completion. The majority of participants ask meter readers to go back and re-attempt readings for CGIs (can't get ins) at the end of the route or at the beginning of the next day's work. Others have supervisors, team leads, or foremen go back for skips sometime during the read-window. The approach can also vary within a company based on the season, weather, manpower availability, terrain, meter density, workload, and management style. The length of the read-window and schedule often determine how many days are available to pick-up any skips prior to cycle closing. A small percentage of companies only attempt to pick-up skips for commercial customers, usually a demand meter. Several companies make the determination based on the number of skips in a route, if they fall below a certain level, there is no attempt to pick-up the read, rather the account is estimated.



APS asks its meter readers to pick up any skips at the end of the route or the beginning of the next day. Thus, many "skips" do not actually result in issuance of estimated bill.

Addressing Inaccessible Meters



Our participants were asked to identify the steps that they take to address inaccessible meters. AMR is the most popular technique now

being employed to address small groups of chronically inaccessible meters.

The second most popular technique is to notify the customer by letter or phone and to continue to estimate the usage on the account. A number of companies report they will disconnect service after several months of continued "no access".

The least popular technique is to arrange a special time or appointment with the customer to obtain a reading. These appointments are usually a last resort before termination for "chronic" no access meters, after repeated efforts to read the meter with no success. Very few participants set appointments with customers for month-to-month cycle reads, and some charge customers to do so.

Companies also request customer keys and access codes to gain entry. Some will install a key box or company lock as a more long-term solution. One utility insists that the customer's doorknob be keyed to a company master key. Lastly, companies supply read cards to customers to self-read. However, for some participants, self-reads are considered estimates, not actual reads.

Most utilities use a number of these techniques to address "no access" and chronic "no access" meters, especially if no AMR has been implemented.

Other techniques sited in the survey:

- Leaving door hangers requesting access, sometimes serving as a read card too
- Printing messages on estimated bills requesting access
- Relocation of the meter at customer expense
- Reversing the routes every other month
- Calling customers before the scheduled read
- Saturday reads and special skip routes

Obviously, inside meters and inaccessible meters continue to challenge the effectiveness of utility meter reading departments in our panel. Inaccessible meters ranged from 1 percent to as high as 18 percent of total meters to be read each month. AMR has proven to be an effective technique, although costly, to eliminating many access problems and repeat trips to the meter. Several panel companies did, however, note that it is only a solution if you can gain access to the meter to install AMR. Other techniques, such as keys, letters, calls, and appointments are labor intensive, expensive and hit-or-miss. And none of these address other legitimate reasons why unfettered utility access is required.

APS has a clearly defined "no access" policy to address inaccessible meters. APS relies on many of the techniques described above to address access issues, including: door hangers, self-read cards, letters, calls, bill messages, and finally, termination. APS' "no access" policy dictates predefined steps to resolve "no reads" depending upon how long the meter has been inaccessible. The policy is described in the following paragraphs.

APS Meter Readers leave a door hanger, indicating the reason the meter could not be read, for all inaccessible meters. The door hanger provides the phone number for the call center and asks that the customer call APS. Each month APS is unable to access a meter, Meter Reading Administration confirms that the Meter Reader left a no-access door hanger; if no door hanger was left, Meter Reading Administration creates a Meter Access Request letter to be sent to the customer.

In the third consecutive month of no access, the APS customer's account is downloaded into an automated dialer, which leaves an automated voice message at the customer's home number that informs the customer of the access problem. If the customer contacts APS, an effort is made to resolve the access issue and the customer may provide

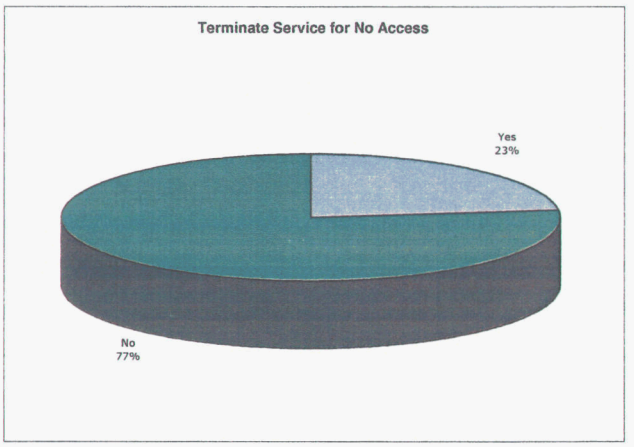
a read that will be used to determine the accuracy of the estimated read utilized in the billing.

APS Meter Reading Administration creates and mails the customer a postcard on the fourth consecutive month of no access. The postcard instructs the customer to contact the call center for access solutions.

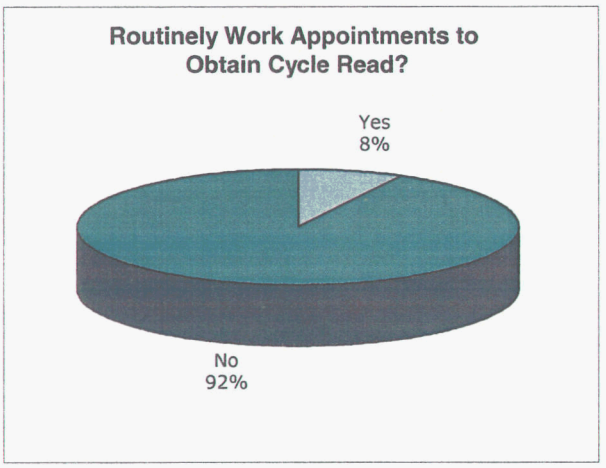
By the fifth consecutive month of no access, the APS customer has received four door hangers or meter access letters, a dialer call, and a post card. In the fifth month, Meter Reading Administration sends an Active Accounts No Access letter that instructs the customer to contact the Call Center to obtain access solutions to avoid interruption of service. The letter informs the customer that APS will disconnect the customer's service, following the next month's read, if the meter is still inaccessible.

In the sixth consecutive month of no access, Meter Reading Administration reviews an account for any indication that the customer has called to resolve access. If none is found, Meter Reading Administration will attempt to call any listed daytime phone numbers. If the customer is unreachable by phone, a disconnect order is generated to Field Services personnel. The serviceman makes one more attempt to access the meter; if there is still no access to disconnect at the meter, the order is reassigned to OH or UG (Metro) or Field Service Supervisor (State).

Most utilities will not terminate service in a no access situation, preferring rather to continue billing estimated usage and continuing to attempt to gain an actual reading. Termination of service can be very disruptive and costly to customers, especially customers who are content to continuing paying an estimated bill. APS' No Access policy, as described on the prior page, does stipulate termination after 6 months of no access; however, *very few accounts have been terminated for no access.*



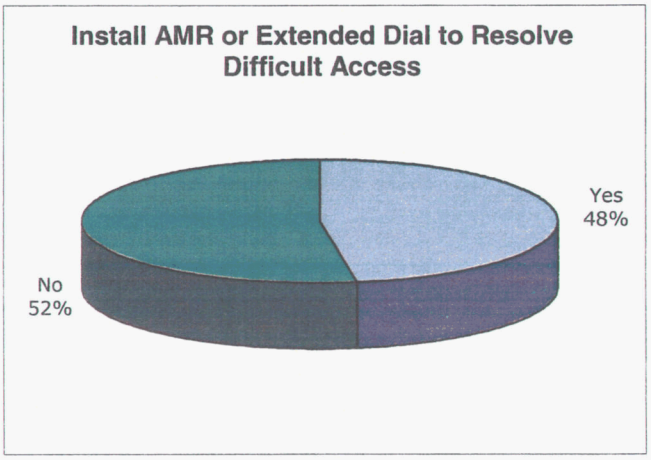
Very few utilities set routine appointments to obtain a routine cycle reading (only 8 percent of participants). Twenty-eight percent of participants reported having occasionally used appointments to resolve unusually difficult "no-access" situations, the majority are worked as field orders rather than by meter readers in-route, and usually only if there is no other way to resolve access. APS uses this approach for unique situations, such as at prisons and military bases.



APS does not use field appointments to gather readings for inaccessible meters, nor does it routinely work meter-reading appointments into its routes. APS, like most other utilities, has determined that the complexity and difficulty of managing scheduled appointments, and the increased costs APS would incur, would not warrant initiating a practice of scheduling appointments in light of APS' lower than industry average number of inaccessible meters and the probability that such a practice would not significantly or consistently reduce the number of meters it would have to estimate.

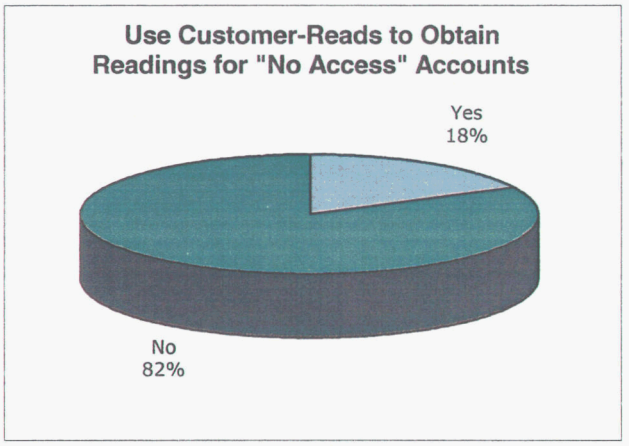
AMR is the most popular long-term solution to difficult access and unsafe access meters. Almost half of participants report using AMR or extended dial technology to remotely read inaccessible meters. This figure is growing as the deployment of AMR increases across the industry and as AMR technology becomes more viable for all meter types. While

AMR has in recent years become widely available for single-phase kWh and residential gas meters, the technology has been unavailable for the more complicated meters, such as demand, time-of-use, and multi-phase meters. The adoption of AMR will become more widespread for all meter types as the technology becomes available and is proven through field tests and pilot implementation.



APS is currently piloting AMR technology for single-phase kWh meters and will evaluate advanced technologies as they are developed.

A few companies provide self-read cards to customers. However, several companies reported that the "self-read" was still considered an estimate and did not count as an "actual read". In addition, others reported they found self-read cards to be unreliable, especially those left at the gate or property line.

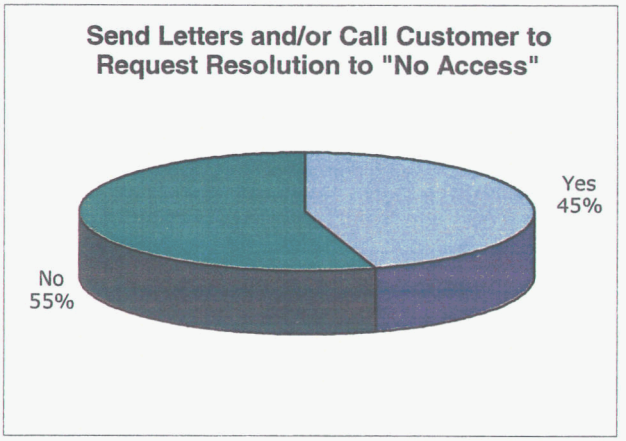


APS' Billing Department sends self-read cards to customers after 2 months of no access. Customers are instructed to provide access to the meter or send back a meter reading.

Many utilities will send a series of special letters and/or call the customer to request access to the meter and to arrange for a long-term solution. In many cases, the letters are automatically generated by the billing system after 1, 2, 3, or more consecutive estimates. This is consistent with APS practices.

A few companies print messages on estimated bills as well, alerting the customer to the estimated bill and asking for access to obtain a reading. APS routinely does this.

Bill messages are a low cost approach; letters and calls are more costly. None guarantee resolution. However all of these are less costly than the special field visit that may or may not gain access.



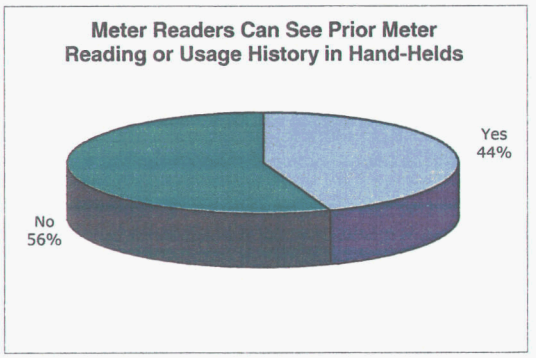
A small number of companies are proactively calling customers prior to the scheduled readings, to remind them to tie up dogs, unlock gates, or provide access to the meter. In a few instances, some I companies issue cell phones to meter readers and code contact phone numbers with the meter information in the handhelds so meter readers can call customers during the route to arrange access. APS does provide to its customers general information regarding meter-reading dates through periodic mailings and information available on APS' web site.

Consistency in the read schedule and time of arrival at the meter also make it easier for customers to provide access—they know when the meter reader arrives each month and can get into a routine.

APS' policy clearly defines the steps taken to resolve no access, including sending a series of letters and post cards as well as calling the

customer to request access. APS also prints a message on the estimated bills asking customers to contact the company to resolve the billing issue.

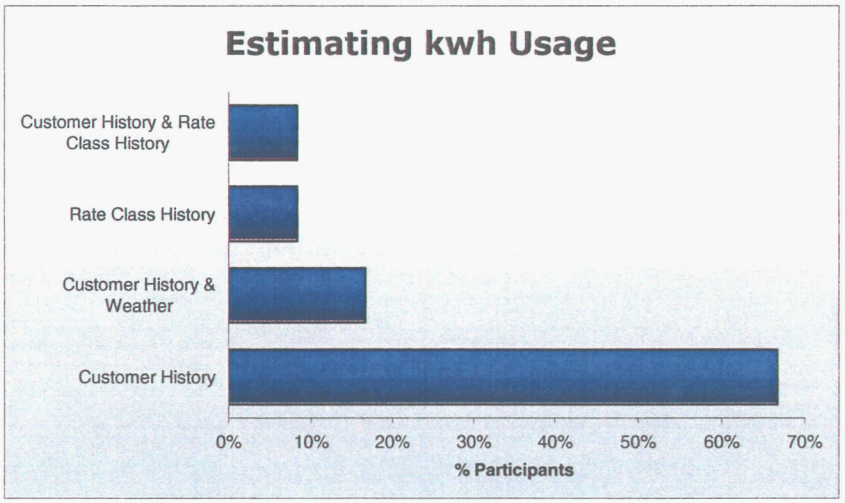
Handhelds can be programmed to check for high and low readings and alert meter readers of possible errors or malfunctions in the meter. Some companies use the prior usage reading and/or same-time last year's reading as the parameters for a "high-low" error check. This information can also be displayed for the meter reader or not, depending upon how the system has been programmed. Some companies allow meter readers to see the prior reading only after a reading has been entered, some before, some not at all. Some companies have removed prior readings from handhelds to discourage "curbing" of meters. However, others state that the information is valuable to meter readers and helps them do a better job; they keep it available as another accuracy check.



Estimating kWh Usage

Most participants estimate kWh usage based on customer history, although the time-period(s) used or averaged varied dramatically. Several companies have incorporated weather into their estimation algorithm, primarily by incorporating a "degree day" calculation. One

participant has incorporated weather through the averaging of customer history and rate class history. A small percentage relies only on rate class history, with no customer history.



There is no apparent standard among our participant group for estimating kWh usage. Even among those companies that prefer to base estimates on customer history, a wide variation of techniques are used, including:

- Previous month
- Same season
- Same month, last year
- Previous month and previous year
- Last month; previous 12 months; same month, last year

- Last month; last year, same month; last year, prior month before and after
- Last year, same 3 months; last 3 months, last month
- Last 3 months, same time last year
- Last month
- Last year, same month, prior month

Like the majority of participants, APS bases its kWh estimates on the customer's history, a daily average for the same season to estimate kWh usage. If this is not available, or applicable, prior month, same season or same month, prior year are used or service address history.

Estimating Demand

Participants reported that all or nearly all demand rate customers were commercial establishments. Even those with demand meters installed at a residence were not billing the customers on the demand rate.

Since virtually all demand billed and metered customers are larger commercial, utilities usually have little difficulty obtaining a reading and resetting the demand as long as the reading can be done during operating hours of the business. As a result, our participants rarely estimate

customers billed on a demand rate, usually only in situations of a meter failure or a weather problem.

When participants do estimate demand-rate customers, the kWh usage could be based on an actual read or an estimate, as described in the prior page. The following approaches are used by participants to estimate the kW demand:

- Use last month's kW demand
- Rate Class Table of kW demand
- Average customer kW demand history, similar to average used for kWh history
- Calculated as needed by load research

Again, since participants rarely estimate demand-rate customers, approaches are non-standard. All are manually estimated, and because the need is usually a meter failure or malfunction, the estimate is often calculated by load research employees instead of billing representatives.

APS has the largest number of demand-rate residential customers in our panel and of any company that we are aware of in the U.S. Among our panel, only a couple of utilities reported having any residential demand customers and those that did had less than a dozen customers, most of which were churches, none of which were an access issue.

Residential accounts pose the greatest access challenge for any utility, as we discussed earlier, it's much easier to gain access to a commercial establishment.

METER READING AND BILL ESTIMATION REGULATION

Accion Group conducted a survey of state regulatory authorities to compare their rules and regulations dealing with meter reading and bill estimation with the practices used in Arizona by APS. The survey targeted twelve states that had experience with deregulation. Our findings demonstrate that there are no standard practices or regulations used by regulators and that the procedures used by APS are generally consistent with the requirements used by other state regulatory agencies.

The survey was conducted in two phases. First, the web sites of each targeted regulatory authority were reviewed. This review was conducted to identify, where possible, the policy and practices the regulatory authority had enacted concerning meter reading and bill estimation. The web site review also identified what information was available to consumers about meter reading and bill estimation. The second phase of the survey was conducted by telephone, with regulatory personnel about the experience of the regulatory authority with meter reading and bill estimation. The telephone survey also explored the

frequency and nature of customer complaints regarding metering and billing issues.

As stated above, a total of twelve regulatory authorities were surveyed. Our sample was designed to include different regions of the country, with different demographic characteristics. We also surveyed a mixture of large and small states to include information on urban and rural customer territories. From experience we knew that the states with the greatest interest in meter reading are those that have experimented with deregulation. Accordingly, we targeted those states for review. From discussion with regulatory staffs, we confirmed that interest in meter reading increased during deregulation, and waned at other times.

From the information we were able to gather, we were unable to find any standard approach among the states for when meters must be read or for the use of estimated bills. While there is a preference for monthly meter reading, even this goal is not employed by all regulators.

As a general matter, meter reading and bill estimation are not issues given much consideration by regulatory authorities. Indeed, when telephoning regulatory authorities it was common for us to have difficulty finding a staff person with any knowledge, much less familiarity, with meter reading or bill estimation regulations. In some states, there are no formal regulations addressing bill estimation and meter reading

regulations. In an effort to identify the incidence of customer complaints, we began our inquiry at each regulatory authority with the staff person responsible for receiving customer complaints. Of the states we surveyed, none of the customer complaint caseworkers had any experience with bill estimation regulations or complaints. This required us to address all questions to staff members responsible for electric utility issues.

All of the regulatory authorities surveyed recognize that circumstances will prevent the reading of every meter every billing cycle. The most common reasons for permitting estimates are denied access and inclement weather, although there are obviously other reasons that can justify estimated reads.

The obligation to read meters ranges from "whenever possible"[1] and the necessity to "strive" to obtain regular monthly readings[2], to a requirement that meters be read at least once every twelve months.[3] One state permits estimated bills for up to sixteen billing cycles or four years, whichever is shorter for seasonal, remote meters.[4]

There was no consistency on the number of months permitted between actual meter reads when access was denied, either through action of the customer or other circumstances. Similarly, there was not a

[1] Connecticut
[2] Maryland
[3] Pennsylvania, Ohio
[4] Maine

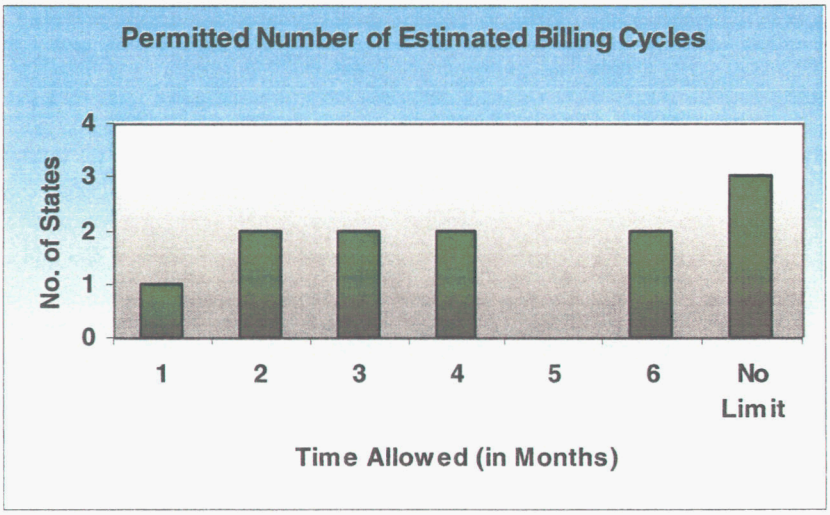
standard for the number of months without access before termination of service is allowed and most state regulations are silent on the point at which termination is permitted. The expectation of termination for non-access to meter ranges from four months[5] to eight months[6], with most state regulations on meter reading silent on the right to terminate.

As with meter related issues, the regulation of estimated bills is varied. At one end of the spectrum, one state has no limit on the number of months of estimated bills[7]. Another state limits estimated bills to one month, except where meter access is denied by the customer.[8] The procedures for estimating bills vary among the states. Most state regulations are silent on how bills are to be estimated[9]. One state requires each electric utility to have an estimating procedure on file with the regulator, though the regulator does not approve a procedure.[10] Our survey identified two states requiring estimated bills to be based on past usage in same month, prior year, with both recognizing the need to have an adjustment for differing weather conditions in the two periods.[11] Another recognized same month, prior year data as one factor to be considered in estimating a bill, along with temperature changes from prior

[5] Illinois
[6] New Jersey
[7] North Carolina
[8] Massachusetts,
[9] Such as Massachusetts, Maine, North Carolina, Ohio, Texas
[10] Connecticut
[11] Maryland

month, usage in prior month, and seasonal load factors.[12] One state requires estimated bills to be based on historic usage and permits a weather adjustment.[13]

Although many different procedures are authorized in various jurisdictions, we know of no instances in which customers were allowed free electricity even when the authorized procedures were not followed.



Our survey specifically addressed the treatment of estimating residential demand meters. This is the one area of our survey where consistency ruled with the surveyed state regulators: none made provisions for estimating demand meters. Where time of use (or time of day, as they are known in some states) meters are in use, no special

[12] Nevada
[13] Pennsylvania

provisions were identified in any state for estimating bills when the meters could not be read.

From our survey, it is apparent that there is little consistency among states when dealing with meter reading and bill estimation. While regulators expect meters to be read and bills rendered on a regular basis, all states recognize that circumstances will prevent some meters from being read. The methodology for bill estimation is, likewise, varied across the country. A majority of the states surveyed did not prescribe a detailed estimation methodology, and those that did address the issue provided for various adjustments including adjustments for weather variations and seasonal adjustments.

Regarding residential demand meters, none of the states regulated the methodology employed for estimating residential demand meters, for virtually none have them in use. From our discussions with regulatory staffs, it is clear that other state regulators do not face the dramatic challenges created by the climate variations of Arizona, or seek to use demand meters as a form of demand side management. Accordingly, the issue of estimating demand billings when meter readings are unavailable is unique to Arizona.

IMPACT OF BILL ESTIMATION PROCEDURES

Part of Accion Group's assignment was to evaluate the impact of APS' bill estimation procedures on its customers. To accomplish this, Accion Group personnel reviewed each of the various procedures APS applied to billings during the last six years. We also interviewed personnel in the billing department to confirm our interpretation of the documentation we reviewed.

The procedures we reviewed included the algorithms used in APS' CIS system and the factors applied to calculate estimated bills. During the years since APS initiated use of its current CIS system, the base computational methodologies used to produce estimated bills has not changed. Certain adjustments to factors used in those algorithms have, however, been adjusted to reflect identified changes in customer load factors and to correct the hours and days used to compute Time of Use estimates. A complete description of the methodology can be found in the Testimony of David Rumolo, filed in this case on November 23, 2004.

Accion Group also reviewed the study of the impacts of estimation methodologies conducted by APS, which was presented in the previously cited testimony of David Rumolo. We observed that the current method provided the most neutral customer impact, an annual underestimation on estimated bills of approximately $432,000, resulting in a net under-

billing to customers as a group whose meters are inaccessible, fail, or are otherwise not read.

To confirm the APS study, Accion Group designed a second study that utilized a universe of actual meter reads covering the period September 1999 through August 2004. Statistically significant samples of actual bills for each rate code were randomly selected and estimates for each of those actual reads were prepared using the estimation procedure being utilized by APS at the time the actual bill was rendered. Under this second study, the only constraint on selection of a bill was that an actual read had been recorded. A total of 956 bills were selected to be estimated. Both kWh and kW estimates were computed using the formula in use at the time the original bill was prepared and each account was then "rebilled" based on rates then in effect.

We anticipated that the accuracy of the estimates (the percent deviation from the actual meter reads) would be normally distributed if the APS methodology was appropriate. A normal distribution would tend to show that most estimates approximated the actual reads with about 50% of all estimates that were not equal to the actual being higher than the actual and 50% being lower.

As Chart 1 demonstrates, we observed that estimated kWh as a percent of actual followed a statistically normal distribution with

approximately 48% of all estimates being less than actual and approximately 65% of all estimates equal to or less than 110% of actual. In fact, 45.8% of all estimates were within 10% of actual meter reads. Chart 2 shows that APS' methods for estimating KW however, demonstrates a marked tendency to underestimate demand. Nearly 80% of all samples calculated were equal to or less than 100% of actual demand. In reality, this estimation of demand and resultant under-collection of demand charges was further exacerbated when APS began to correct individual over-estimates of demand (as determined by a subsequent actual read) in 2003. Moreover, unlike variances between actual and estimated kWh, the net systematic underestimate of demand is not "self-correcting."

As noted above, we then had APS bill each estimate to determine the impact these estimates would have had. By rate code , we found the following average over and under billing impacts were computed.

Results of Accion Analysis

Rate Code	Average Actual Bill [1] $	Average Estimated Bill [2] $	% Over [3]	% Under [3]
E-12	73.57	68.63	46	54
E-10	72.84	74.10	53	44
EC-1*	144.84	134.20	33	67
ET-1	131.11	126.43	51	48
ECT-1R*	153.90	128.23	19	81
E-32*	571.16	545.00	40	59

*Demand Rates

We found that over 58% of the estimates computed resulted in a hypothetical under billing. By Rate Code we found that APS' approaches resulted in average estimates ranging from a 1.7% over estimate for Rate Code E-10 (which would self-correct in succeeding months) to a 16.7% average under billing for Rate Code ECT-1R. In total, our sample of 956 bills underestimated bills by $12,417.49, or an average of $12.99 per bill. We next compared our results to the results of the study conducted by APS and found them to be generally consistent.

Based on our findings, we have concluded that APS' estimation methodology is conservative and serves the best interests of those of the Company's customers whose bills are based on estimated reads. As a group, those customers are not harmed. Furthermore, APS' periodic

[1] A total of 956 bills were sampled.
[2] Bills were estimated using APS methodology in effect at the time actual bill was prepared.
[3] Percentages may not total to 100%, reflecting estimates equal to actuals.

refinements of the factors used to calculate the estimates have, over time, reduced but not eliminated underbilling. We believe APS' use of historic seasonal average usage and class load factors has enabled APS to develop estimates that are fair and reflect the volatility of usage and demand that APS experiences as a result of Arizona weather patterns and customer requirements.

Chart 1: Total kWh Estimation as a Percent of Actual

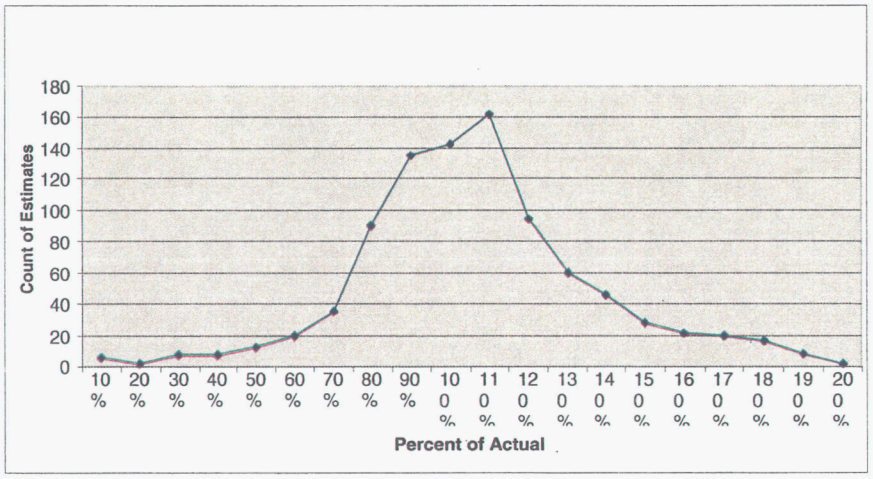
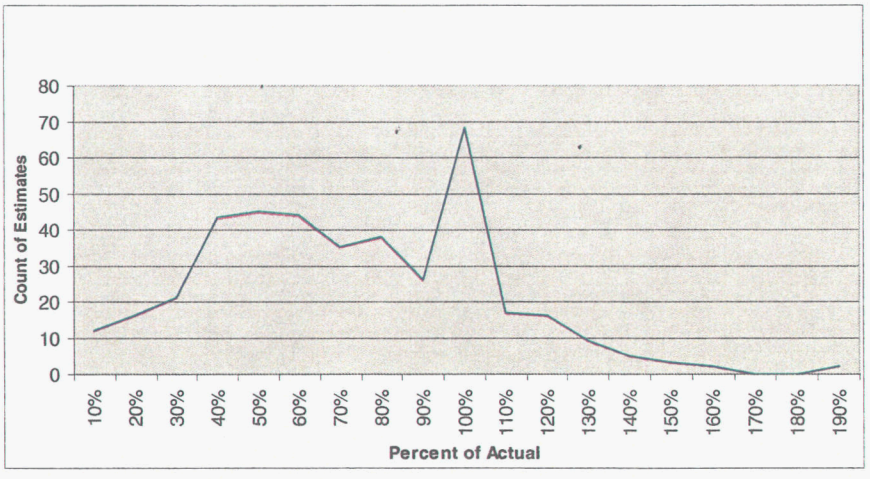


Chart 2: kW Estimation as a Percent of Actual



REVIEW OF STAFF CONSULTANT'S REPORT

On December 28, 2004, the "*Staff Inquiry into the Usage Estimation, Meter Reading, and Billing Practices of Arizona Public Service*" (BWG Report) was provided to the parties to this docket. The BWG Report makes 15 recommendations and discusses the claims of the Avis Read Complaint filed on September 9, 2004. Some of the recommendations address problems that do not exist at this time and many of the findings in the Report significantly distort the facts relied on to support them. In total, the BWG Report suggests that APS' practices may "harm" customers and that the potential "harm" may be of a significant magnitude. Contrary to that assertion, we found that APS' practices have, over time, benefited its customers.

The BWG Report tends to distort the significance of past anomalies and creates a false impression of APS practices. In other cases, the BWG Report appears to be based on misinterpreted or incomplete information.

The 15 recommendations are based on findings in the BWG Report. When the findings are read, it is clear that in many instances the Staff Consultants found no fault with APS' practices. While the BWG Report findings identify APS employees taking prompt, corrective action when problems became apparent, the findings rarely identify an endemic problem that even potentially could cause harm to APS' customers.

Only about 1.2 percent of the APS bills rendered in 2004 and only 0.9% of bills in the Phoenix Metro region were estimated, of which few were on residential demand metered rates. Therefore, contrary to the implication in the BWG Report that APS practices "harm" customers, the overwhelming likelihood is that APS customers are unaffected by the meter estimation processes, because they make their meters available to the meter readers and receive regular bills. Similarly, the tiny minority that did receive an estimated bill suffered no harm in the aggregate and may have in fact benefited. Even BWG recognized that customers on a standard rate, without demand charges, are not harmed by an estimated bill because their actual usage will be known once an actual meter read is obtained and any estimation "error" (whether an over- or under-estimation) will be corrected automatically. Accordingly, the number of customers who could potentially be affected by an inaccurate estimate is limited to demand rate customers. Even the few customers who received estimated bills for demand charges are more likely to be under-billed rather than overcharged. Based on the analyses we performed and on our review of the study conducted by APS as presented by David Rumolo in his testimony filed November 23, 2004, we are confident that APS' estimation procedures result in a net under-billing to customers whose bills are estimated. In the aggregate, customers as a group are

not being charged any more than is permitted pursuant to APS' filed tariffs.

When the findings supporting the 15 recommendations are reviewed, many are already consistent with current APS practices. Others address problems resolved long ago. Some of the recommendations regard more recent APS improvements, and a few propose projects or practices already begun or under consideration by APS. In particular, the Staff Consultants recommend actions they apparently claim will benefit ratepayers, yet their findings regarding APS practices did not identify any value the proposed actions may create. Indeed, if required, the recommended studies and reports would prolong indefinitely this Docket, without identifying any benefit to customers or the public interest of such continued intense scrutiny of APS' metering and billing practices.

On the following pages we discuss several of the specific recommendations made by the Staff's Consultants and address the findings and facts purportedly supporting those recommendations.

Recommendation III-2 suggests that APS improve its internal reporting without identifying an internal APS need for the data to be reported. Indeed, we found that much of the data is already available and is used to manage the meter reading function. This recommendation fails to identify any reason why the information that is currently available

to APS Managers is inadequate or any harm the present APS reporting practices on this subject could cause customers. The collection of data and the filing of reports without an established need or benefit are unnecessary and costly.

Recommendation III-3 (compliance performance measures for reading within billing cycles) relies on the same findings in the BWG Report as Recommendation III-2. As with the prior Recommendation, the Staff Consultants fail to identify how the form of records maintained by APS up to 9 years ago have any bearing on what current practices are, or the accuracy of customer bills today and into the future. After a review of APS records, the BWG Report could not identify a problem with meter reading within a billing cycle, other than failure to read for no access or meter failure. It is apparent that APS performance in this area is appropriate and that those responsible for completing meter readings in a timely fashion are doing so. There is nothing in the BWG Report that supports creating a new reporting requirement for a phantom problem.

Recommendation III-4 (removing prior month readings from the Itron Hand Held Computer (HHC) relies on Finding III-10, which states "(we) did not find evidence that meter reading schedules are assigned in a manner that may compel meter readers to take short cuts ..." Report at III-10. The findings also acknowledged a "zero tolerance" policy should

any meter reader attempt to fake a meter reading. Significantly, the finding identifies only one instance of a meter reader being terminated for falsifying a read in 1995 and another in 2004 who confessed to "falsifying reads," although only after this transgression had been discovered by the supervisors. Also, the finding fails to note, as confirmed by our discussions with APS Witness McLeod, that the majority of the Itron HHCs have now been set to block access to this data, and the company intends to make this change to all HHCs used by its meter readers. Accordingly, if there ever was a problem, APS has already taken steps to avoid or eliminate it.

According to the BWG Report, Recommendation IV-3 which addresses the role of APS' internal auditors is supported by Finding IV-11 (Report at IV-13) which asserts "it has taken APS significant time and effort to align" the new CIS with business practices. The statement, while true, is incomplete and misleading. It fails to acknowledge that APS fully completed the implementation of its new CIS by 2000, and it further fails to acknowledge that virtually every utility that has installed a new CIS in the last decade has experienced unexpected difficulties. More significantly, the most recent date regarding <u>any</u> vestigial transitional difficulties is from December 2000 – over four years ago. (Report Finding IV-7 at IV-14). This Recommendation seems to be overreaching and may reflect the lack of understanding of the purpose of internal audits. The Recommendation

would have the Commission require APS devote internal audit resources to reviewing this area even if no ongoing material risk was identified. Moreover, to adopt every recommendation proffered in an internal practices audit whether or not deemed necessary by management would be imprudent. In effect, the Staff Consultants would have APS management cede their judgment and responsibilities to an auditor. While an auditor may offer worthwhile suggestions and valid observations, it is management's responsibility to make decisions and ensure that the company runs well. It would be wholly inappropriate for an audit report to be elevated to the level of controlling the Company.

Recommendation VI-1, supported by Finding VI-1, advocates sensitivity training for billing services representatives. As part of our review of APS practices, we sat with billing representatives while they reviewed estimated bills and determined how the bills were to be issued. We also reviewed training manuals and met with supervisors to review performance records, complaints and disciplinary records. We found no evidence of a lack of training or a lack of understanding of the significance of bills to customers. The Finding referenced as a reason for this sensitivity training recounts the steps taken to generate an estimated bill when there is partial or no meter read for the billing cycle. Finding VI-1 does not identify any shortcoming in the performance of billing

representatives, or suggest there has been any confusion on the part of customers.

Recommendation IV-2 addresses a billing practice APS changed in 2003. If adopted, it would require APS to review each estimated bill and subsequent actual bill rendered to every demand metered residential account it served during the period 1998 through 2003 to determine if the actual metered demand was less than estimated demand in each previously estimated month, to compute a credit for each such occurrence, to locate the customer affected, and to refund that credit. This would be a time-consuming, complex and costly exercise to benefit customers who failed to comply with APS' approved tariff terms and conditions regarding meter access and would simply add to an already net underbilling situation.

On that last point, it should be re-emphasized that we have tested APS' estimation methodology and found that it tended to underestimate customers' electric usage and that approximately 58% of all estimated bills were for less than actual usage. Also, about 80% of all demand estimates were for less than what was used. We also found that over roughly the same period, the average estimate was about $13.00 ***less*** than the actual bills tested in our sample.

As noted above, it appears that Staff's Consultants may have made recommendations based on incomplete information about industry practices or a misinterpretation of the APS data available to them. Several recommendations propose requiring APS to prepare and submit periodic reports or to participate in ongoing research and to provide that information to the Commission - Recommendations III-1, III-6, III-7, and V-2. Among this group, it appears that Staff's Consultants have proposed that procedures be put in place to address a sporadic resource problem that occasionally existed at APS' smaller offices that APS has already addressed (Recommendation III-1), that APS pilot-test scheduling appointments with chronic no-access customers, a recommendation unsupported by any findings and a practice rarely used in the industry (Recommendation III-7), that APS test using an auto-dialer to communicate meter reading schedules with chronic no access customers in spite of the facts as found by Staff's Consultants that APS has comprehensive policies in place that provide that information to its customers (Recommendation III-6), and that APS continue to participate in benchmarking studies and report on those studies quarterly (Recommendation V-2) without any evidence to suggest that APS had any intention to stop benchmarking its performance against its peers or that such data would be available quarterly.

Recommendation III-8 which would have APS adopt a policy to ensure that meter-reading supervisors inspect no-access locations, while unsupported by any findings, would, if adopted, have no meaningful effect on APS' operating practices. According to our review, interviews with company personnel, and our accompanying meter readers in the field, APS already has practices in place to accomplish this goal. Recommendation V-1 implies that APS does not make adequate efforts to obtain meter readings at persistent no-access locations, an implication that is refuted by the Consultant's findings in Chapter III of its Report. Further, as noted earlier in our report, APS' estimated bills as a percent of total bills is less than the industry average even in spite of its heavy concentration of demand meters and the fact that it is only now beginning to implement recently available AMR technology.

Finally, the BWG Report recommends requiring APS to create a report every three months about the on-going AMR pilot project underway at APS (Recommendation III-5). This Recommendation, while understandable, should not be adopted as proposed. Quarterly reports would provide no meaningful or useful data from which conclusions should be drawn. AMR technology is currently being tested in the Metro region, which in 2004 had a 0.9% "no access" meter reading rate. The on-going performance of AMR in the Metro region, evolving technology and

associated cost, will in time produce a basis for the business decision of whether to install AMR meters throughout APS' service territory. Undoubtedly, APS will advise the ACC when sufficient data upon which to determine which, if any, AMR technology will add value to the system. Until then, quarterly reports would provide no valuable information.

In conclusion, our review of the Interim Report finds that the majority of the recommendations would address circumstances and concerns that have been previously corrected by APS. The remaining recommendations are either actions that could be taken, but would not provide customer value or improve APS practices, or are already under review and testing by APS. Accordingly, we believe the recommendations in the Interim Report should not be adopted and the Commission should find that APS meter reading and bill estimation practices are appropriate and not in need of additional scrutiny.

EXHIBIT TM-2

Thank You for Your Patience and Understanding While We Convert to a New Customer Information System

We've had several challenges during our recent conversion to a new state-of-the-art computer system.

We spent many months training our employees and getting our company ready for the conversion. However, as with the implementation of any large system, we have had a couple of obstacles to work through as we made this conversion.

We're putting the finishing touches on the system and there still may be a few more bugs to work out. However, once the new system is running smoothly, we'll be able to provide you with more individualized service than ever before.

We value your business and appreciate your understanding during these challenging times.

APS

THE POWER TO MAKE IT HAPPEN™

10/98

BILL INSERT

Dear Customer:

Due to a problem with our new computer billing system, the enclosed bill is for more than one month's energy usage. We are very sorry that this has occurred. Please be assured that you will in no way be penalized for our delay. You have our commitment that your credit will not be adversely affected by this delay and no late fees will be assessed.

If you would like additional time to pay this bill, please give us a call at 371-7171 in the Phoenix metro area and 1-800-253-9405 outside Phoenix.

You are a valued customer and we appreciate your business. We sincerely apologize for the frustration and inconvenience this has caused you.

Jan Bennett
Vice President
Customer Service

Tel. 602-371-7171
1-800-253-9405
www.apsc.com

Mail Station 8766
PO Box 53999
Phoenix, Arizona 85072-3999

Dear Customer:

I am writing to apologize for a recent occurrence that created a delay in the production and mailing of your electric bill.

APS recently installed a new customer information computer system. Our new system is designed to better serve you by giving us more flexibility and the ability to provide you with more individualized service more quickly.

However, as with the implementation of any large system, we have had a couple of challenges to work through as we made this conversion. One of these issues has caused us to mail your statement late.

I assure you we are aware of this matter and are working diligently to resolve this issue as quickly as possible. Please know that you will, in no way, be penalized by this occurrence.

I sincerely apologize for any frustration and/or inconvenience this delay may have caused you. Your patience and understanding is greatly appreciated.

Sincerely,

Jan H. Bennett
Vice President
Customer Service

LATE 1998
and
EARLY 1999

Jan Bennett
Vice President
Customer Service

Tel. 602-371-7171
1-800-253-9405
JHBennet@apsc.com

Mail Station 8766
PO Box 53999
Phoenix, Arizona 85072-3999

Dear SurePay Customer,

Due to a problem with our computer billing system, the enclosed statement is for more than one month's energy use. I am very sorry that this has occurred and hope you are not seriously impacted by this delay in billing.

Since SurePay automatically debits your bank account for the entire amount due, to avoid negatively impacting your bank account, we suspended your participation in the SurePay program for the current statement.

Therefore, this month we request that you send us a check or money order for payment on your account. Or, if you prefer, you can stop by one of our customer offices to pay your bill.

If you want or need additional time to pay the amount due, you can ask us to temporarily cancel your SurePay participation and make payment arrangements with you. Then, when you are ready to be reinstated in the SurePay program, you can sign the enclosed form and return it in the postage-paid envelope. Your account will be activated on SurePay within fifteen (15) days of when we receive the form.

To be removed from SurePay and to request payment arrangements, please call 371-7171 (metro Phoenix area) or 1-800-253-9405 (other areas of Arizona).

If you do not request payment arrangements or removal from SurePay, no action is required by you except payment of this bill. Then, your future APS bills will be handled as usual -- through automatic SurePay transfer from your bank and your *entire* balance due on your account will be deducted from your bank account each month.

We appreciate your business and I sincerely apologize for any frustration and inconvenience this delay may have caused you.

Sincerely,

Jan H. Bennett
Vice President
Customer Service

LATE 1998
and
EARLY 1999

answers

Ideas and Information for APS Business Customers
November/December 1998

APS

Thank You for Your Patience!

Recently, APS began installing a new Customer Information System. We have encountered several challenges during the conversion of our 700,000+ customer records. As a result, many of our customers have been inconvenienced. Certainly, no customer will be charged a late fee as a result of our errors or late delivery of bills. We regret that you may have experienced our growing pains with us. Again, we apologize to any of you who may have been caught in the middle of our conversion process.

On the positive side, our new CIS system promises to give us greater flexibility and information than ever before, which means we'll be better able to serve you.

We value you as a customer and sincerely hope we haven't inconvenienced you during this process. Thank you again for your patience.

Money Saving Energy Tip

Plant small shrubbery near the foundation of your building to shade the lower half of outer walls. (Plant three feet from the wall to prevent water damage.)

Save Time When Making Routine Calls to the APS Business Center

In a hurry when when calling our Business Center (371-6767/ 800-253-9407)? You can receive fast, efficient information about your APS account and electric service 24 hours a day, seven days a week by using the Interactive Voice Response System shortcuts listed below.

Reason for Your Call	Press
To report a power outage	1 + 1
To report an electrical emergency	1 + 2
For billing information or payment arrangements	1 + 3
To connect or disconnect service	1 + 4
For office locations or APS mailing address	1 + 5
To sign up for Business Equalizer	1 + 6
To speak to a Business Center Representative	1 + 0

If you call for account information, please be ready to enter your account number. You'll find this number printed on the top of your APS statement.

Dear Customer,

We haven't sent you a statement in several months due to a problem with our new computer billing system. I am extremely sorry for this delay and any inconvenience it may have caused you.

We are working diligently to resolve any remaining problems that have resulted from the conversion to a new customer information system, and hope to send you a statement soon.

When you receive your bill, you can choose to either pay it in full or pay over several months, interest free, of course. You have my promise that late fees will not be assessed on your account due to this bill.

I am confident that once our new system is running smoothly, we'll be able to provide you with better and more individualized service than ever before.

If you have any questions, please give us a call at 371-7171 (metro Phoenix area) or 1-800-253-9405 (other areas). You are a valued customer and we appreciate your business.

Sincerely,

Jan H. Bennett
Vice President
Customer Service

SPRING/SUMMER - 1999

Dear Customer,

The enclosed statement is for more than one month's energy usage. Our delay in sending you monthly bills is due to a problem with our new computer billing system. I am extremely sorry that this has occurred and sincerely apologize for any frustration and inconvenience this delay may have caused you.

I assure you that the "Total Amount Due" shown at the bottom of the last page of this statement is no more than if you had received separate bills for each month's energy usage. You also have my commitment that late fees will not be assessed on your account due to this bill.

To make payment as easy as possible you may either pay this bill in full or take as many months to pay as we took to get this bill to you. For example, if you choose the extended payment option and this is a three-month bill, you can pay one-third each month for three months. When you receive your next monthly statements, any unpaid amount from the extended payment option will be displayed as a previous billing balance. You may enclose payment for both your current billing and extended option payment in the enclosed postage-paid envelopes. While you may take the allotted time to pay past bills, we ask that you remain up to date with your current bill.

If you have already sent payment(s) on your account, I thank you!

We are working diligently to resolve any remaining problems that have resulted from the conversion to a new customer information system. I am confident we will soon have the system running smoothly and we'll be able to provide you with better and more individualized service than ever before.

Once again, I apologize for any inconvenience our billing delay may have caused you. You are a valued customer and we appreciate your business.

Sincerely,

SPRING/SUMMER - 1999

Jan H. Bennett
Vice President
Customer Service

EXHIBIT TM-3

News For

APS

Corporate Media Relations (602) 250-227;

Date: Wednesday, December 2, 1998

City: Sun City, Arizona

Media: THE SUN CITIES INDEPENDENT

Page: 3

APS experiences billing problems

Timing poor for utility with deregulation looming

By MIKE RUSSO
Independent Newspapers

With the dawning of the electric deregulation era in Arizona on the horizon and electric providers scrambling to retain their existing customer base, Arizona Public Service has experienced a glitch that has antagonized customers statewide at the most inopportune time.

A new computerized billing system installed in September, ironically to make the transition to the deregulation age go smoother, has not worked as expected and has caused major problems, according to Maria Arrellano, APS spokeswoman.

"This new system will be able to provide us greater flexibility in dealing with our customers," Ms. Arrellano said. "We had some unanticipated problems, incorrect bills, so they were pulled aside and manually checked, and some were late bills.

"We rededicated resources to fix the problem both on the computer side and the customer service side," she continued.

Customer service representatives are aware of the situation and should be explaining it to irate customers, according to Ms. Arrellano.

"When we realized we had a problem with the new billing system, we started sending letters to our customers apologizing for the problems," she said.

"We should have the system fixed in the next several weeks," Ms. Arrellano said. "Unfortunately, it will take us some time to catch up. We are making progress every day.

"We apologize to our customers for the inconvenience and frustration this system has caused them," Ms. Arrellano added. "We pride ourselves in customer service.

"We are aware of all these related issues," Ms. Arrellano said. "We have been trying to deal with these customers as diligently as possible."

APS will not penalize anyone with billing problems resulting from the company's errors, whether it be a late bill or incorrect bill, according to Ms. Arrellano.

Ms. Arrellano said she did not know how many customers statewide had been affected by the billing snafus, but she acknowledged that customer complaints have risen since the implementation of the new system.

Complaints directed to the Arizona Corporation Commission have also risen during the last two months, according to Perry Baker, Corporation Commission public information officer.

"For the year, we have received a total of 72 complaints regarding APS," Mr. Baker said. "In last two months, we have received 25 of them, a little more than a third of the complaints"

Most of the complaints have dealt with customers not receiving credit for payments or customers not receiving bills for several months, according to Mr. Baker.

"On the consumer side (the Consumer Affairs Division of the ACC), they think APS has been pretty responsive," Mr. Baker said. "They have tried to explain what is going on through inserts in their billings. So, we have not come down on them too hard. We think they have been doing a good job in trying to take care of customers and rectify the problems.

"As far as we can tell, no customers are being adversely affected," Mr. Baker concluded.

Neither the Sun City Homeowners Association nor the Sun City Taxpayers Association have received any complaints from members regarding APS billing, according to officials of the two organizations.

1/1