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AVIS READ, individually, and behalf of all others
similarly situated,

Complainant,

v.

ARIZONA PUBLIC SERVICE COMPANY,

Respondent.

DOCKET NO. E-01345A-04-0657

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR A
DECLARATORY ORDER REGARDING BILL
ESTIMATION PROCEDURES.

DOCKET NO. E-01345A-03-0775

ARIZONA CORPORATION
COMMISSION STAFF'S DIRECT
TESTIMONY

Staff of the Arizona Corporation Commission hereby files the Direct Testimony of
Perry L. Wheaton, Joyce I. Steingass, Joel F. Jeanson, and Matthew Rowell in the above-referenced
matter.

RESPECTFULLY SUBMITTED this 24th day of January 2005.

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The original and fifteen (15) copies of the foregoing were filed this 24th day of January 2005 with:

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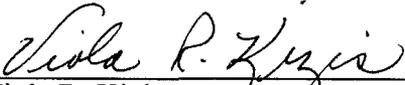
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**DIRECT
TESTIMONY
OF
MATTHEW J. ROWELL**

DOCKET NOS. E-01345A-04-0657 AND E-01345A-03-0775

**AVIS READ; individually, and on Behalf of All
Others Similarly Situated, Complainants,**

v.

**ARIZONA PUBLIC SERVICE COMPANY,
Respondent.**

**IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
A DECLARATORY ORDER REGARDING BILL
ESTIMATION PROCEDURES**

JANUARY 24, 2005

ROWELL

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MARC SPITZER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

AVIS READ; individually, and on Behalf of All)
Others Similarly Situated,)
Complainants,)
v.)
ARIZONA PUBLIC SERVICE COMPANY,)
Respondent.)
_____)

DOCKET NO. E-01345A-04-0657

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
A DECLARATORY ORDER REGARDING BILL)
ESTIMATION PROCEDURES)
_____)

DOCKET NO. E-01345A-03-0775

DIRECT

TESTIMONY

OF

MATTHEW ROWELL

CHIEF ECONOMIST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JANUARY 24, 2005

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1 **EXEXUTIVE SUMMARY**

2
3 This testimony provides a discussion of Staff's chief concerns regarding Avis Read's complaint
4 against APS ("the Read Complaint") filed with the Commission September 9, 2004. This
5 testimony will also address APS' compliance with A.A.C. R14-2-210, which is one of the
6 Commission's regulations; it will also address APS' compliance with two of its Commission-
7 approved tariffs, ECT-1 and ECT-1R. This testimony will also respond to certain portions of
8 APS witness David J. Rumolo's testimony filed on November 23, 2004; specifically, this
9 testimony will address Mr. Rumolo's request for clarification on ten "situations" and Mr.
10 Rumolo's assertion that APS' meter estimation practices were provided to the Commission.
11 Additionally, this testimony will explain Staff's position on applicable fines and penalties
12 regarding APS' actions.

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I INTRODUCTION

Q. Please state your name and business address for the record.

A. My name is Matthew Rowell. My business address is Arizona Corporation Commission, 1200 W. Washington St., Phoenix, Arizona 85007.

Q. What is your position at the commission?

A. I am the Chief of the Telecommunications and Energy section of the Commission's Utilities Division.

Q. Please describe your education and professional background.

A. I received a BS degree in economics from Florida State University in 1992. I spent the following four years doing graduate work in economics at Arizona State University where I received a MS degree and successfully completed all course work and exams necessary for a Ph.D. My specialized fields of study were Industrial Organization and Statistics. Prior to my Commission employment I was employed as a lecturer in economics at Arizona State University, as a statistical analyst for Hughes Technical Services, and as a consulting research analyst at the Arizona Department of Transportation. I was hired by the Commission in October of 1996 as an Economist II. I was promoted to the position of Senior Rate Analyst in November of 1997 and to Chief Economist in July of 2001. In my current position I am responsible for supervising nine professionals who work on a variety of telecommunications and energy matters.

Q. What is the purpose of your testimony?

1 A. My testimony provides a discussion of Staff's chief concerns regarding Avis Read's
2 complaint against APS ("the Read Complaint") filed with the Commission September 9,
3 2004. My testimony will also address APS' compliance with A.A.C. R14-2-210, which is
4 one of the Commission's regulations; I will also address APS' compliance with two of its
5 Commission-approved tariffs, ECT-1 and ECT-1R. My testimony will also respond to
6 certain portions of APS witness David J. Rumolo's testimony filed on November 23,
7 2004; specifically, my testimony will address Mr. Rumolo's request for clarification on
8 ten "situations" and Mr. Rumolo's assertion that APS' meter estimation practices were
9 provided to the Commission. Additionally, my testimony will explain Staff's position on
10 applicable fines and penalties regarding APS' actions.

11

12 **Q. What aspects of the Read Complaint caused the most concern for Staff?**

13 A. While much of the discussion in this case has dealt with meter read estimation procedures
14 and APS' compliance with rules and tariffs dealing with meter read estimation, Staff's
15 chief concern is not how Ms. Read's meter reads were estimated. Staff's chief concern is
16 the fact that Ms. Read received *no* bill (estimated or otherwise) for five months
17 (September 1999 thru January 2000.) Additionally, when Ms. Read's bills were
18 eventually rendered on February 24, 2000 they were unreasonably confusing. The bill that
19 Ms. Read finally did receive was for over \$6,000, an amount that, even for a well off
20 individual, could create a cash flow problem. In spite of all this (APS' failure to send bills
21 for five months, the confusing nature of the bills when they did arrive, and the financial
22 burden of the bill), APS was not willing to work with Ms. Read on an extended payment
23 plan for anything beyond three months (APS' standard for extended payment plans.)

24

25 **Q. Ms. Read's February 24, 2000 bill was for a total of \$6,336.46. What time period did**
26 **that bill cover?**

1 A. That bill included charges for September 1999 thru January of 2000 totaling \$1,709.42. It
2 also included \$4,627.04 from a prior balance.

3
4 **Q. Why does Staff believe that when Ms. Read's bills were finally rendered they were**
5 **unreasonably confusing?**

6 A. Ms. Read received multiple bills at one time. She received bills for each month as well as
7 a total cumulative bill. APS provided these bills to Staff in response to a data request.
8 There was no explanation of the situation included with these bills. Both Staff and Staff's
9 consultants, who have experience with the electric utility industry, were confused by the
10 bills. It took considerable effort on Staff's part to determine what had occurred based on
11 the content of the bills. Thus, it is reasonable to conclude that Ms. Read would have
12 found the bills confusing.

13
14 Additionally, Ms. Read received two sets of bills for the time periods December 17, 1999
15 thru February 17, 2000. Bills for this time period were reissued based on a meter read that
16 Ms. Read had called in. These reissued bills contained a notice that did not explain why
17 the bills were reissued or that they superceded the original bills. (See the December 28,
18 2004 Staff Report page VI-4.)

19
20 **Q. What are Staff's general observations about the above-described events that led to**
21 **the Read complaint?**

22 A. From a customer service perspective, the treatment Ms. Read received from APS was
23 inadequate. At several points during the time period discussed above, APS could have
24 taken steps to lessen the burden on Ms. Read. Specifically, when APS realized it was not
25 fulfilling its obligation to send bills on a monthly basis, it could have at least sent clear
26 notice to the affected customers that there was a problem that was preventing bills from

1 going out. When the bills finally were sent, they could have been accompanied by clear
2 notice explaining the situation. When Ms. Read contacted APS concerning her bill in
3 excess of \$6,000, APS could have clearly explained the situation to Ms. Read and offered
4 her a payment plan other than the standard three month plan. In short, in spite of APS'
5 failure to fulfill its obligation to send timely bills to Ms. Read, APS seems to have taken
6 no action to lessen the impact to Ms. Read.

7
8 **Q. Is it reasonable to expect that APS could have taken the steps listed in your previous**
9 **answer (or other steps aimed at mitigating the impact on its customers associated**
10 **with its billing problems)?**

11 **A.** Yes. At the time in question APS knew it was having trouble with sending timely bills. It
12 is reasonable to expect that this inability to properly bill would result in customer
13 confusion *and* eventual financial burdens on customers. APS could have taken pro-active
14 measures to alleviate the impact on customers. For instance, APS could have instituted a
15 policy that extended the standard three-month period for installment payments. Staff
16 understands that APS did inform its customer service representatives that there was a
17 billing problem that would result in increased calls from customers. However, it does not
18 seem that APS actually changed any of its policies in a way that would allow the customer
19 service representatives to address customers' problems.

20
21 In response to Staff's 15th set of data requests, APS provided a newspaper article dated
22 December 12, 1998 that indicates that APS had sent letters to its customers apologizing
23 for the billing problems associated with implementing a new billing system. Staff
24 believes that such letters are certainly a good idea and that sending them does qualify as a
25 proactive step to alleviate customer confusion. However, these letters were sent a full
26 fourteen months prior to Ms. Read's February 24, 2000 bill. Thus, had Ms. Read received

1 one of these letters, it is not reasonable to believe that she would have had it on hand or
2 remembered its content in February of 2000.

3
4 **II APS' COMPLIANCE WITH A.A.C. R14-2-210 AND ITS FILED TARIFFS**

5
6 **Q. What does A.A.C. R14-2-210 address?**

7 A. This rule, which I will subsequently refer to as "Rule 210," addresses billing and
8 estimation. Before discussing this subject, I want to acknowledge that APS and Ms. Read
9 have disputed the validity of the rule in the Superior Court case that preceded Ms. Read's
10 complaint to the Commission. I am not an attorney, and I cannot address those legal
11 issues. If the Commission were to conclude that Rule 210 is in effect, the following
12 information may be helpful to the Commission when evaluating Ms. Read's complaint.

13
14 **Q. Why does Ms. Read believe that APS has violated Rule 210?**

15 A. She contends that Rule 210 requires APS to obtain Commission approval of its bill
16 estimation procedures. She further contends that APS does not have Commission-
17 approved bill estimation procedures and that APS has therefore violated the rule.

18
19 **Q. At pages 17 thru 20 of his testimony APS witness Rumolo argues "the amendments
20 to Rule 210 that required submittal of bill estimation procedures were never
21 intended to apply to incumbent utilities." What is Staff's position on the
22 applicability of Rule 210 to APS?**

23 A. This is a difficult issue. Several factors imply that Rule 210 in its entirety would apply to
24 APS, yet other factors imply that APS' belief that it did not apply is not wholly
25 unreasonable.

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Q. What are the factors that imply that Rule 210 did apply to APS?

A. The principal factor is the plain language of the rule. R14-2-210(A)(5)(a) is the section of the rule at issue and it reads as follows:

“A utility or billing entity may not render a bill based on estimated usage if:
a. The estimation procedures employed by the utility or billing entity have not been approved by the Commission.”

“Utility” is defined in R14-2-201(45) as:

“The public service corporation providing electric service to the public in compliance with state law...”

Clearly, APS is a utility and thus R14-2-210(A)(5)(a) was applicable to it.

Another factor that implies that R14-2-210(A)(5)(a) applied to APS is the fact that on August 23, 2001 the Process Standardization Working Group (“PSWG”) filed a joint application for a waiver from two subsections of this same rule, R14-2-210(A)(5)(b) and R14-2-210(A)(5)(c). APS was a member of the PSWG at the time. The members of the PSWG, including APS, must have believed that R14-2-210(A)(5)(b) and R14-2-210(A)(5)(c) applied to them or they would not have asked for a waiver. R14-2-210(A)(5)(b) and R14-2-210(A)(5)(c) rely on the same definition of “utility” as R14-2-210(A)(5)(a).

Q. What factors imply that APS’ belief that R14-2-210(A)(5)(a) did not apply to it is not wholly unreasonable?

A. All of the incumbent utilities had meter estimation procedures in place at the time that R14-2-210(A)(5)(a) was established. Yet the rule did not specify how existing meter

1 estimation procedures were to be handled. It is not unreasonable to suggest that had the
2 Commission intended 210(A)(5)(a) to apply to incumbent utilities a provision would have
3 been added to the rules to account for the interregnum between when the rules were
4 enacted and when the incumbent utilities estimation procedures were approved.

5
6 **Q. What is Staff's conclusion regarding the applicability of R14-2-210(A)(5)(a)?**

7 A. Staff believes that the plain language of R14-2-210(A)(5)(a) indicates that the rule was
8 intended to apply to APS. And while APS may have believed that R14-2-210(A)(5)(a)
9 did not apply to it, this does not justify inaction on its part. If, APS believed that the rule
10 did not apply to it (in spite of the plain language of the rule), APS could have and should
11 have sought clarification of the rule from the Commission.

12
13 **Q. Does APS have Commission-approved bill estimation procedures?**

14 A. APS has Commission-approved bill estimation procedures for Rate Schedules ECT-1 and
15 ECT-1R. Apparently, APS has not implemented the methods approved in these tariffs,
16 but has instead used a different method. Staff has not been able to identify any
17 Commission order that explicitly approves APS' existing meter read estimation
18 procedures.

19
20 **Q. Page 5 line 23 of APS' application for a Declaratory Order, indicates that APS had**
21 **submitted its estimation procedures to Staff on October 15, 2002. Please comment on**
22 **this filing.**

23 A. The filing on October 15, 2002 (Attachment 1 to this testimony) was made in compliance
24 with Commission Decision No. 64180. This filing contained a brief description of the
25 estimation procedures utilized when a first or final bill is estimated. Although this filing
26 was consistent with Commission Decision No. 64180, it was not comprehensive and only

1 included procedures for the estimation of kWh. Any procedures related to first or final
2 bill demand estimations were not included in this filing.

3
4 **Q. As previously discussed, in Commission Decision No. 64180, APS and other members**
5 **of the PSWG received a joint waiver from R14-2-210(A)(5)(b) and (c). Please explain**
6 **the provisions of that decision.**

7 A. This decision granted a waiver from the provisions in the rule which would prohibit a
8 utility or billing entity from rendering an estimated bill if the bill would be the customer's
9 first or final bill or the customer is a direct access customer requiring load data. A
10 provision in the decision also required the utilities to file reports indicating the number of
11 estimations, the reasons why a read could not be obtained, and the method used to
12 estimate the read specifically for the two situations for which the waiver applied.

13
14 **Q. When did APS file a more comprehensive list of estimation procedures?**

15 A. On October 10, 2003, APS made a filing in compliance with Decision No. 64180
16 (Attachment 2 to this testimony.) This second filing was a further modification to APS'
17 estimation procedures and included additional information not provided in APS' first
18 filing. It included procedures used for estimations other than first or final bill along with
19 demand estimation methodologies. This filing was made only twelve days before APS
20 filed its application for a Declaratory Order with the Commission, which requested among
21 other things approval of its estimation procedures. More specifically, Staff was not made
22 aware of any changes to APS demand estimation methodologies until twelve days before
23 the filing of APS' application for a Declaratory Order. In addition, the application for a
24 Declaratory Order contained additional information that was not included in the
25 company's October 10, 2003 filing.
26

1 **Q. Does Staff believe that including its estimation procedures in a compliance filing**
2 **constitutes an application for Commission or Staff approval of APS' estimation**
3 **procedures?**

4 A. No. It would be unusual for Staff to evaluate these types of filings in the same manner as
5 an application for Commission approval. Staff's review of compliance filings focuses on
6 whether those filings comply with the provisions of the relevant Commission order. If a
7 company provides additional information in a compliance filing and provides no notice of
8 its intentions regarding that additional information, it is not reasonable to expect Staff or
9 the Commission to understand the company's intention. In other words, "slipping in"
10 information in a compliance filing is not appropriate and does not constitute proper notice.
11 Had APS intended to provide the Commission or Staff with its estimation procedures for
12 review and approval it should have provided the Commission or Staff with appropriate
13 notice. Typically, a utility would make a filing through Docket Control for initial
14 approval of or a change to existing utility processes or procedures for which it required
15 Commission approval. Often this type of filing is filed with the Commission as an
16 application for approval of a tariff or an amendment to an existing tariff.

17
18 **Q. Does the Commission's decision in the Ciccone complaint (Decision No. 59919)**
19 **constitute Commission approval of APS' bill estimation procedures?**

20 A. No. Decision No. 59919 contains no findings regarding bill estimation procedures, and
21 APS' bill estimation procedures were not the subject of the Ciccone complaint. APS' bill
22 estimation procedures are mentioned only in passing in Decision No. 59919.

23
24 **Q. If the Commission were to determine that Rule 210(A)(5)(a) is in effect, has APS**
25 **violated that rule?**

1 A. Yes. The terms of that rule require utilities to obtain Commission approval of bill
2 estimation procedures before issuing estimated bills. Staff has not been able to identify,
3 and APS has not been able to provide, any Commission order that explicitly approves
4 APS' current meter read estimation procedures.

5
6 **Q. Does APS' current bill estimation method comply with R14-2-210A(2)?**

7 A. Yes. R14-2-210A(2) provides that:

8
9 "If the utility or Meter Reading Service Provider is unable to obtain an actual
10 reading, the utility or billing entity may estimate the consumption for the billing
11 period giving consideration to the following factors where applicable:

- 12 a. The customer's usage during the same month of the
13 previous year.
14 b. The amount of usage during the preceding month."
15

16 Staff believes that this rule is addressing the estimation of kWh. The Arizona
17 Administrative Code does not contain a definition of "consumption." However, Staff
18 believes that the term "consumption" generally applies to kWh *not* kW when it is used in
19 the electric utility industry. Staff understands that APS' bill estimation method does
20 consider the customer's kWh consumption (i.e., "energy") from the same month in the
21 prior year and from the preceding month. However, for customers with demand meters
22 APS does not consider the customer's kW (i.e., "demand") from the same month in the
23 prior year or from the preceding month. Another issue concerning the applicability of
24 R14-2-210A(2) is whether the term "usage" means kWh, kW, or both. The Arizona
25 Administrative Code does not contain a definition of "usage." However, Staff believes
26 that the term "usage" generally applies to kWh *not* kW when it is used in the electric
27 utility industry. Also, the Commission's decision in the Ciccone complaint (Decision No.
28 59919) defines the "usage portion" of a customer's consumption as kWh and the "demand

1 portion” as kW.¹ Staff is not aware of any other authoritative definition of the term
2 “usage” as it pertains to the electric utility industry. Because of its general use in the
3 industry and because of the language of the Ciccone Decision, Staff believes that the term
4 “usage” as used in R14-2-210A(2) refers to kWh. Because APS’ bill estimation method
5 considers the customer’s kWh consumption from the same month in the prior year and
6 from the preceding month, it complies with R14-2-210A(2).

7
8 **Q. Does APS’ estimation method comply with its Tariffs?**

9 A. No. The EC-1 and ECT-1R tariffs² provide that if an estimate of kW is necessary it will
10 be set equal to the last month’s kW read. APS has clearly not followed the demand
11 estimation procedures laid out in tariffs EC-1 and ECT-1R. In his testimony, APS witness
12 Rumolo essentially admits that APS was not (and is not) complying with its EC-1 and
13 ECT-1R tariffs.³ In fact, Mr. Rumolo testifies that APS has never complied with these
14 tariffs since they became effective in 1983. Mr. Rumolo implies that the estimation
15 procedure required by the EC-1 and ECT-1R tariffs is inferior to the estimation
16 procedures APS actually has been using. Staff witness Perry L. Wheaton addresses the
17 merits of various meter read estimation techniques in his testimony. However, regardless
18 of the merits of the tariffed procedure, APS has an obligation to comply with the tariff *or*
19 to file a revised tariff.

20
21 **III. APPLICABLE REMEDIES**

22
23 **Q. The Read Complaint appears to recommend that *all* revenue collected by APS from**
24 **estimated bills be returned to customers. Does Staff agree with this proposal?**

¹ See Decision No. 59919 page 1 line 28 thru page 2 line 2.

² Tariff EC-1 has been in effect since 1983. Tariff ECT-1R has been in effect since 1989 and was a replacement for tariff ECT-1 which had been in effect since 1981. The language dealing with meter read estimations is identical in tariffs ECT-1R and ECT-1.

³ Page 24 lines 16 and 17.

1 A. No. Section B. 3. of the Prayer for Relief of the Read Complaint recommends that "...all
2 funds received by reason of estimated billings sent out without following the procedures
3 for sending such bills..." should be returned to "other members of the class." Regardless
4 of whether APS was estimating bills in accordance with Commission rules or tariffs,
5 customers are not entitled to free electricity. In the Staff Report filed on December 28,
6 2004 and in the testimony of Staff witness Perry L. Wheaton, Staff recommends that the
7 amount of any over billings resulting from demand estimation be returned to the
8 applicable customers (with interest.) Customers are entitled to an accurate bill and any
9 over billed amounts should be returned. However, APS' actions do not justify allowing
10 customers to pay nothing for electricity they did in fact use.

11

12 **Q. What specific violations of Commission rules, statutes or tariffs did Staff evaluate**
13 **when determining whether to recommend a monetary fine in connection with the**
14 **Read Complaint?**

15 A. Staff considered APS failure to comply with R14-2-210(A)(5)(a), its failure to send bills
16 on a monthly basis, and its failure to comply with its EC-1 and ECT-1R tariffs.

17

18 **Q. Is Staff recommending a fine regarding rule 210?**

19 A. No. Staff recognizes that there could have been some confusion regarding the
20 applicability of R14-2-210(A)(5)(a) to APS. While the appropriate response to such
21 confusion would have been to request clarification of the rule rather than simply assuming
22 that it was not applicable, Staff believes there is enough uncertainty regarding the
23 applicability of the rule to dissuade us from recommending a fine. Staff notes that no
24 Arizona electric utility has filed their estimation procedures with the Commission. This
25 indicates that APS was not alone in its interpretation of R14-2-210(A)(5)(a).

26

1 **Q. Regarding the tariff violations, is Staff recommending a monetary fine?**

2 A. Yes. APS was clearly in violation of its EC-1 and ECT-1R tariffs. APS appears to have
3 intentionally disregarded this tariff language for a period of years. Staff believes that a
4 monetary fine for these violations is appropriate.

5
6 **Q. Regarding the failure to send bills, is Staff recommending a monetary fine?**

7 A. Yes. APS clearly failed to send bills to Ms. Read for five months. R14-2-210(A)(1)
8 requires utilities to send bills on an (essentially) monthly basis. Staff believes that a
9 monetary fine for these violations is appropriate.

10

11 **Q. With respect to the tariff violations, are there any mitigating or aggravating**
12 **circumstances that affect Staff's recommendation concerning a fine?**

13 A. Staff believes there are mitigating circumstances. On pages 22 thru 28 of his testimony,
14 APS witness Rumolo argues that the billing estimation methodology required by APS'
15 EC-1 and ECT-1R tariffs is inferior to the methodology that APS actually used.⁴ While
16 Staff does not agree with that conclusion, Staff does acknowledge that the methodology
17 APS actually used is not an unreasonable method for estimating meter reads. Staff has
18 found no evidence that APS' actual methodology resulted in consistent over-billings. In
19 fact, we have found the opposite: APS' method is more likely to result in under-billings
20 than over-billings.⁵

21

22 However, regardless of the merits of a particular method, APS has an obligation to comply
23 with its tariffs. If APS discovers that the provisions of a tariff are not optimal, the

⁴ Staff's analysis of these methodologies is discussed in the testimony of Perry L. Wheaton.

⁵ See the testimony of Perry L. Wheaton

1 appropriate course of action is to file revisions of the tariff with the Commission. Simply
2 acting as if the tariffs do not exist is inappropriate.

3
4 **Q. With respect to APS' failure to send Ms. Read bills, are there any mitigating or**
5 **aggravating circumstances that affect Staff's recommendation concerning a fine?**

6 A. There are both mitigating and aggravating factors. The mitigating factor is the fact that
7 APS was implementing a new CIS at the time the bills were being sent. Staff understands
8 that the implementation of a new CIS is a difficult undertaking and that it can result in
9 significant billing problems even if managed appropriately. Also, over \$4,000 of Ms.
10 Read's February 2000 bill was not associated with the five month period where Ms. Read
11 received no bills. Thus, the burden of the \$6,627.04 February bill is not entirely
12 attributable to the five months when no bills were received. However, these mitigating
13 factors are overshadowed by the aggravating factors of the poor customer service Ms.
14 Read received from APS and the length of time over which that the billings problems
15 persisted. As stated in the above introduction, Staff finds the customer service Ms. Read
16 received to be inadequate. Also, as discussed above APS was aware of its billing
17 problems in December of 1998, a full fourteen months prior to Ms. Read's February bill.

18
19 **Q. Why is Staff recommending a fine?**

20 A. Staff's chief concern in this case is compliance with the Commission's rules and tariffs.
21 Staff cannot ignore non-compliance with Commission tariffs. Staff believes it is
22 reasonable to expect that a utility will follow its own tariffs and file for revisions of those
23 tariffs when necessary.⁶

24

⁶ Staff notes that Utilities routinely file tariff revisions with the Commission, in a typical year the Commission receives upwards of 400 requests for tariff revisions.

1 Additionally, Staff feels that the failure to send bills is a serious issue and cannot be
2 ignored. APS' failure to send bills to Ms. Read was not an isolated event. It resulted from
3 problems regarding the implementation of a new billing system that lasted for at least
4 fourteen months (December of 1998 thru February of 2000.)

5
6 Although Staff has identified certain mitigating factors in the preceding paragraphs, we do
7 not believe that these factors are sufficient to mitigate against the imposition of a fine.
8 However, if the company comes forward with credible evidence which would mitigate
9 against the imposition of a fine, Staff stands ready to reconsider its recommendation.

10
11 Staff's recommendations (including those in this testimony and those in the testimony of
12 Perry L. Wheaton and the December 28, 2004 Staff Report) are chiefly concerned with
13 modifications to APS' policies and practices and verification of compliance through audit.
14 In addition to the fine discussed below, Staff recommends that for the next five years a
15 corporate officer of APS be required to submit verification to the Commission that APS is
16 in compliance with its tariffs dealing with billing practices and with Commission rules
17 dealing with billing practices.

18
19 **Q. What fine is Staff recommending?**

20 **A.** APS has been out of compliance with the meter estimation portion of its EC-1 and ECT-
21 1R tariffs over twenty years. Thus, even if the minimum per occurrence fine amount of
22 \$100 was assessed for each occurrence of non-compliance (i.e., each estimated meter read
23 applicable to those two tariffs over the past twenty-one years), the resulting fine would be
24 unreasonably large. Staff believes a more appropriate method for determining a fine
25 regarding non-compliance with EC-1 and ECT-1R would be to select a recent
26 representative year and assess a per occurrence penalty based on the relevant estimated

1 meter reads in that year. Staff believes that basing the fine on the instances of non-
2 compliance for the most recent year for which we have complete information is
3 appropriate. 2003 is the most recent year for which we have complete information. In
4 2003 there were 9,530 meter read estimations for customers on EC-1 and ECT-1R. Given
5 that APS' non-compliance with EC-1 and ECT-1R did not constitute an attempt to
6 consistently over-bill its customers, Staff recommends that the minimum fine amount of
7 \$100 per occurrence be assessed for each of these 9,530 occurrences. This results in a fine
8 of \$953,000.

9
10 With respect to APS' failure to send bills to Ms. Read for five months, Staff believes that
11 a fine of \$4,000 per occurrence is appropriate. APS could have attempted to mitigate the
12 impact on Ms. Read by providing clear notice to her explaining the situation or by offering
13 her an extended payment plan. Since this was not done, Staff is recommending a
14 maximum per occurrence fine of \$4,000; this is four-fifths of the maximum allowable per-
15 occurrence fine. Since Ms. Read did not receive five bills, this results in a fine of
16 \$20,000.

17
18 The two fine amounts listed above total \$973,000. However, Staff recognizes that there
19 are costs associated with complying with the recommendations in the testimony of Perry
20 L. Wheaton and the Staff Report filed on December 28, 2004. In recognition of those
21 costs Staff has adjusted its recommended fine amount down by \$400,000. The total
22 monetary fine that Staff recommends be assessed on APS is \$573,000.

23
24 **Q. Is the monetary fine discussed in the previous question the only action that Staff is**
25 **recommending?**

1 A. No. The monetary fine is in addition to the recommendations discussed in the testimony
2 of Perry L. Wheaton and the Staff Report filed on December 28, 2004. Staff also
3 recommends that APS provide subsequent verification of the costs associated with
4 complying with the recommendations discussed in the testimony of Perry L. Wheaton and
5 the Staff Report filed on December 28, 2004. Additionally, Staff recommends that for the
6 next five years a corporate officer of APS be required to submit verification to the
7 Commission that APS is in compliance with its tariffs dealing with billing practices and
8 with Commission rules dealing with billing practices.

9
10 **Q. Should Staff's recommended monetary fines or the costs of complying with Staff's**
11 **other recommendations be considered for recovery in any subsequent rate case?**

12 A. No.

13
14 **Q. Does this conclude your testimony?**

15 A. Yes.

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APPENDIX: APS' REQUEST FOR CLARIFICATION ON TEN "SITUATIONS"

Q. What are the 10 situations raised in both the declaratory order and Mr. Rumolo's testimony that deal with circumstances that may or may not constitute bill estimation?

A. Mr. Rumolo describes the ten situations as follows:

Situation 1 – Characterization of the first bill after a billing period for which consumption was estimated.

Situation 2 – Characterization of a bill if rates change in the middle of a billing cycle.

Situation 3 – Characterization of a bill issued prior to obtaining a valid meter reading, which bill is later adjusted after a valid read is obtained.

Situation 4 – Total meter failure or malfunction resulting in no available reliable information.

Situation 5 – Meter failure or malfunction but some data is available.

Situation 6 – Meter reading is not available using electronic meter reading information but data is obtained from visual meter reading.

Situation 7 – Meter reading information is not available because the service is provided on an un-metered basis such as street lighting service.

Situation 8 – Unbundled service for direct access customers is provided on the basis of load profiles rather than using interval data metering.

Situation 9 – Meter tampering results in lack of metered consumption information.

Situation 10 – An electronic meter reading is obtained but the data cannot be transferred to a billing computer.

1 **Q. What is the significance of these ten situations?**

2 A. APS has asked for a determination as to whether each of these ten situations constitutes an
3 estimated bill. APS has asked for this determination in both its request for a declaratory
4 order and in Mr. Rumolo's testimony. Mr. Rumolo claims at Page 8 lines 5 thru 8 of his
5 testimony that Situation One has some special relevance to the Read Complaint. Staff
6 does not agree that APS' characterization of Situation One is especially relevant to the
7 Read Complaint. Whether the bill described in Situation One is considered to be
8 estimated or not would have had little bearing on Ms. Read's situation.

9
10 **Q. What are the implications of determining whether a bill is estimated or not?**

11 A. A.A.C. R14-2-210 (Rule 210) describes specific provisions related to estimated bills.
12 Should a bill be determined to be estimated, issuance of the bill would be subject to
13 specific provisions of Rule 210.

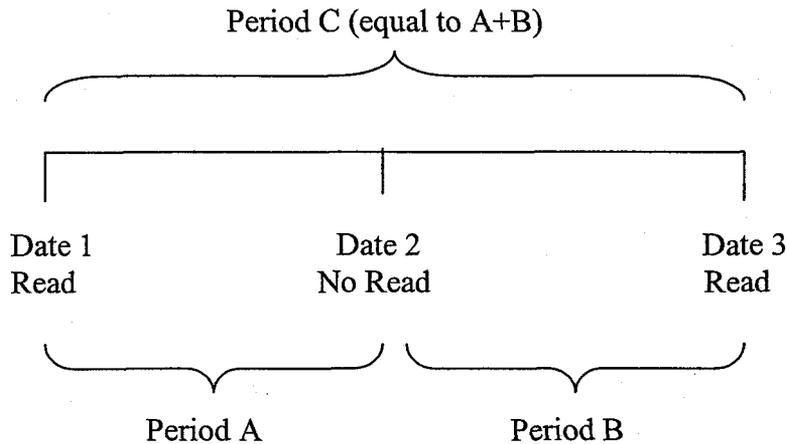
14
15 **Q. Does the Arizona Administrative Code include a definition of an estimated bill?**

16 A. No.

17
18 **Q. Please describe the 10 situations identified by APS and discuss Staff's evaluation of
19 these situations?**

20 A. *Situation 1 – Characterization of the first bill after a billing period for which consumption
21 was estimated.*

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Referring to the graphic above, if a read is obtained at Date 1 and a read is not obtained at Date 2, an estimated bill will be issued for Period A. Later when a Read is obtained at Date 3, total kWh used between Dates 1 and 3 will be known. This total known usage between Dates 1 and 3 is represented by Period C above the timeline. At the time of Date 3, it will be necessary to issue a bill for Period B. As the total usage in Period C will be known at that time and an estimated bill will have been issued for Period A at that time, it will be appropriate to issue a bill for the mathematical difference between Period C and Period A. In fact, it will be necessary to calculate the bill for Period B as the difference between Period C and A because the meter reading at the beginning of Period B was unknown and consequently usage in the month in which Period B falls is unknown.

The question posed in Situation 1 is whether a bill issued based on the Date 3 read should be considered an estimated bill or not. APS suggests that such a bill is not an estimated bill. Staff agrees with this conclusion. Bills based on the Date 3 read reflect actual usage. They include actual usage from Period B and a 'true up' of estimated to actual for Period A. However, the number of billing days that the charge on the bill represents is unknown because an estimated bill was issued for Period A. Bills issued based on the Date 3 read

1 represent known usage over an unknown period of billing days. Because the usage
2 contained in Date 3 bills is not estimated, Staff concludes that the bills are not estimations.

3
4 It remains, however, that there is some uncertainty associated with these bills related to
5 the time period for which they apply. A.A.C. R14-2-210(B)(2) requires that each
6 residential bill contain among other things: the beginning and ending meter readings of
7 the billing period, the dates thereof, and the number of days in the billing period. These
8 requirements create an obligation for APS to inform customers of the nature of these bills.
9 Staff recommends that when issuing bills described in Situation 1, APS include notice on
10 the bills that explains that they are true up bills that reconcile previously estimated bills
11 with subsequent bills and may not reflect the usage for the month for which they are
12 issued. Staff recommends that APS be ordered to work with Staff to develop appropriate
13 language for such an explanation.

14
15 *Situation 2 – Characterization of a bill if rates change in the middle of a billing cycle.* In
16 this situation the portions of the total billing period's usage that are assigned to either the
17 previous rate or the new rate are determined by assuming equal consumption in each of
18 the billing days and assigning consumption to the old and new rates proportionally to the
19 number of days in the billing cycle that fell before or after implementation of the new rate.

20
21 APS suggests that should this methodology be used when rate changes occur, the bill
22 should not be considered an estimated bill. Staff agrees that bills issued using such a
23 methodology should not be considered estimations for purposes of Rule 210. These bills
24 are based on actual meter reads. Also, R14-2-210(A)(1) requires that meter readings shall
25 be scheduled for periods of not less than 25 days or more than 35 days without customer
26 authorization. Should APS endeavor to read each meter within a billing cycle in which a

1 rate change occurs in order to establish the proportion of monthly usage that occurs before
2 and after the rate change, it would be incumbent on APS to first secure customer
3 authorization for such interim reads. An additional barrier would be the need to read
4 every customer's meter on the day of the implementation of the rate change. As a process
5 involving additional interim reads is operationally infeasible, and the Commission has
6 never instructed a utility to do so to the best of Staff's knowledge, Staff suggests that bills
7 issued as described in Situation 2 not be considered estimations for purposes of Rule 210.

8
9 *Situation 3 – Characterization of a bill issued prior to obtaining a valid meter reading,*
10 *which bill is later adjusted after a valid read is obtained.* Bills may be issued in order to
11 meet requirements that bills be issued within a 25 to 35 day billing window as described
12 previously. These bills are issued when no read is available due to various conditions and
13 a bill must be sent to satisfy the prescribed billing window. APS suggests that such bills
14 are estimations and that a subsequent bill based on a known read is considered a corrected
15 bill rather than an estimated bill.

16
17 Staff agrees that the first bill described is an estimated bill, as it is not based on known
18 consumption. Staff agrees that the subsequent bill is a corrected bill or "true up" bill
19 rather than an estimated bill provided that it is based on actual consumption.

20
21 *Situation 4 – Total meter failure or malfunction resulting in no available reliable*
22 *information.* Situation 4 describes bills issued when a meter fails. APS suggests that
23 when meters fail it is necessary to issue an estimated bill. Staff agrees with APS that such
24 a situation requires estimation, as a true read cannot be taken.

1 *Situation 5 – Meter failure or malfunction but some data is available.* Situation 5
2 describes a meter malfunction in which the extent of meter reading error that results from
3 the malfunction can be known precisely. For example, if one leg of a three-phase meter
4 fails, one knows that usage is under-recorded by exactly one third. APS suggests that such
5 a bill is not an estimated bill. Staff agrees that such bills are not estimated, as APS can be
6 certain of the usage in these situations. Staff recommends that bills issued as described in
7 Situation 5 are not estimated bills.

8
9 *Situation 6 – Meter reading is not available using electronic meter reading information*
10 *but data is obtained from visual meter reading.* Situation 6 describes a bill issued based
11 on a visual read of a meter when an electronic probe of such a meter has failed. APS
12 suggests that such a bill is not estimated. Staff agrees that such a bill is not an estimate as
13 the read is determined visually.

14
15 *Situation 7 – Meter reading information is not available because the service is provided*
16 *on an un-metered basis such as street lighting service.* Situation 7 describes bills that are
17 issued based on tariffs that call for unmetered usage. Bills for private lighting or street
18 lighting, for instance, are set tariff rates that prescribe set monthly billing amounts that do
19 not depend on metered usage. APS suggests that such bills are not estimated bills. Staff
20 agrees that such bills are not estimated bills. Staff finds that bills issued under such an
21 arrangement are bills based on a tariffed monthly fee rather than estimated bills. While
22 the tariffs themselves are based on an estimation, or anticipation, of a given appliance's
23 future usage, the bills issued by APS in situation 7 reflect APS' implementation of a tariff
24 that prescribes a set charge. When these bills are issued, APS does not estimate the
25 appliance's consumption.
26

1 *Situation 8 – Unbundled service for direct access customers is provided on the basis of*
2 *load profiles rather than using interval data metering.* Situation 8 describes bills that
3 might be sent by APS to Electric Service Providers for billing of transmission and
4 settlement of generation costs associated with provision of electricity to direct access
5 customers. In this situation class load profiles have been used to allocate generation and
6 transmission costs to specific days as direct access customers under 20 kW are not
7 required to have interval meters capable of providing load profile information. APS
8 concludes that as the transaction between APS and the ESP is FERC regulated, bills issued
9 as described in Situation 8 are not estimated bills. Since such transactions are wholesale
10 transactions between utilities, Staff concludes that bills issued by APS to ESPs are not
11 estimations for purposes of Rule 210.

12
13 *Situation 9 – Meter tampering results in lack of metered consumption information.*

14 Situation 9 describes issuance of a bill when a meter has been tampered with. APS
15 suggests that a bill issued under such circumstances is an estimated bill. Staff agrees that
16 such a bill is estimated as the usage during the billing period is not known and estimation
17 of usage is required.

18
19 *Situation 10 – An electronic meter reading is obtained but the data cannot be transferred*
20 *to a billing computer.* Situation 10 describes an event where the APS billing computer
21 cannot properly download billing data in spite of an accurate electronic read having been
22 taken by a meter reader with a hand held computer. APS suggests that such a situation
23 requires issuance of an estimated bill. Staff agrees that should the APS billing computer
24 not be able to access usage data, it would be necessary to issue an estimated bill.

1 **Q. Please provide a brief summary of Staff's recommendations regarding these 10**
2 **situations.**

3 1. Staff recommends that when issuing bills described in Situation 1, APS identify
4 the bills as true up bills and provide an explanation on such bills that indicates the
5 nature of the bills. Staff recommends that APS be ordered to work with Staff to
6 develop such an explanation. Bills issued as described in Situation 1 are true up
7 bills rather than estimated bills.

8
9 2. Bills issued as described in Situation 2 should not be considered estimations for
10 purposes of Rule 210.

11
12 3. Bills issued as described in Situation 3 are in the first instance an estimated bill and
13 in the second instance a corrected bill rather than an estimated bill.

14
15 4. Bills issued as described in Situation 4 are estimated bills.

16
17 5. Bills issued as described in Situation 5 are not estimated bills.

18
19 6. Bills issued as described in Situation 6 are not estimated bills.

20
21 7. Bills issued as described in Situation 7 are not estimated bills.

22
23 8. Bills issued as described in Situation 8 are not estimated bills for purposes of
24 Rule 210.

25
26 9. Bills issued as described in Situation 9 are estimated bills.

1

2

10. Bills issued as described in Situation 10 are estimated bills.

3

4

Q. Does this conclude the Appendix to your testimony?

5

A. Yes.

6

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11

ATTACHMENT 1



A subsidiary of Pinnacle West Capital Corporation

Name Jana Van Ness
Title Manager, Regulatory Compliance
Department Regulatory Compliance

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Fax 602-250-2873
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Mail Station 9905
PO Box 53933
Phoenix, Arizona 85072-3933

October 15th, 2002

Mr. Ernest Johnson
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

RE: Semi-annual Compliance Filing Pursuant to Decision No. 64180
Docket No. E-00000A-00-0403

Dear Mr. Johnson:

Pursuant to the above referenced decision, attached is Arizona Public Service Company's semi-annual filing regarding estimated initial and final bills.

In preparing this report, APS determined many of the initial and final bills estimated by the company for the period January 1, 2002 – June 30, 2002 were caused by the very reasons Staff mentions in section 7, lines 21 – 24. Additionally, APS experiences estimated initial and final reads caused by the timing of new meters sets as well as servicemen read errors. These are identified on the attached report. As a result of analysis performed for the preparation of this report, APS has implemented some process changes. As you'll see, these changes have resulted in lowering our number of estimated reads. These reductions are reflected in the later months covered by this filing.

Also pursuant to Decision 64180, section 13, line 26-27, APS is including the methodology used to estimate meter reads. Unless this methodology is changed in the future, subsequent filings will only include the report indicating the numbers of customers receiving estimated initial or final bills and the reason why the read was estimated.

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

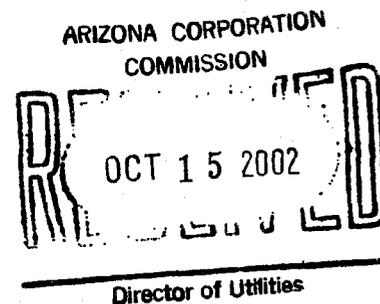
Sincerely,

Jana Van Ness
Manager
Regulatory Compliance

Attachments

JVN/vld

Cc: Patrick Williams
Manager, Compliance and Enforcement



ARIZONA PUBLIC SERVICE COMPANY
Semi-annual Compliance Filing Pursuant to Decision No. 64180
Docket No. E-00000A-00-0403
Estimated Initial and Final Reads for the Period
January 1, 2002 – June 30, 2002

Definition of Categories

Meter Issues – Meters where, at the time APS went to connect or disconnect the service, the serviceman was unable to obtain a read because of a condition on the meter. This includes, a blank display, or the meter already being removed, or a damaged meter.

Access – Meters which were inaccessible to APS personnel at the time of the disconnect or at the time of the first read following the connection of service to the customer.

New Install – New meter sets which were not in the APS meter reading system at the time the route was read.

Read Error – Meter reads obtained by the serviceman at the time of the connect or disconnect which are out of line with previous reads.

ARIZONA PUBLIC SERVICE COMPANY
Semi-annual Compliance Filing Pursuant to Decision No. 64180
Docket No. E-00000A-00-0403
Estimated Initial and Final Reads for the Period
January 1, 2002 – June 30, 2002

JANUARY 2002	Initial Bills	Final Bills
Meter Issues	68	80
Access	142	5
New Install	401	5
Read Error	207	393
JANUARY TOTALS	818	483
FEBRUARY 2002		
Meter Issues	53	95
Access	110	5
New Install	327	1
Read Error	151	443
FEBRUARY TOTALS	641	544
MARCH 2002		
Meter Issues	46	104
Access	248	2
New Install	353	0
Read Error	154	475
MARCH TOTALS	801	581
APRIL 2002		
Meter Issues	55	120
Access	189	1
New Install	274	5
Read Error	140	733
APRIL TOTALS	658	859
MAY 2002		
Meter Issues	62	127
Access	166	6
New Install	244	0
Read Error	122	542
MAY TOTALS	594	675
JUNE 2002		
Meter Issues	14	143
Access	145	4
New Install	122	1
Read Error	146	259
JUNE TOTALS	427	407
PERIOD TOTALS	3939	3549

ARIZONA PUBLIC SERVICE COMPANY
Semi-annual Compliance Filing Pursuant to Decision No. 64180
Docket No. E-00000A-00-0403
Estimating Methodology

APS uses various methods for estimating a read for an initial or final bill. The circumstances that created the need for APS to estimate dictate which of the methods we may use.

Initial Bill Estimate – New Meter Set

These are created when a new meter is set and by the time the meter is assigned to a route, the route is already out in the field to be read for the current month. When this occurs, APS' billing system flags these as an exception and the account is routed to a Billing Associate. If the number of days between the meter set and read date is less than 10 days, the Billing Associate estimates the read at zero. The customer's first bill would only be a prorated basic service charge. If the number of days is more than 10 days, the Billing Associate will estimate a read using 20 kWh per day times the number of days.

Initial Bill Estimate – Existing Meter

The majority of these are created by access problems. Since there is history available for the site, the Billing Associate will consider the previous month and the same month a year ago. From this they will calculate a per day usage. They will multiply the per day usage by the number of days for the new customer's bill to arrive at an estimated read. If the account is time-of-use, the Billing Associate uses a split of 40% on-peak and 60% off-peak.

Final Bill Estimate

Depending on the circumstances creating the need to estimate, Billing Associates could use any of the methods below to estimate a final bill read.

1. Consider the previous month and the same month a year ago. From this they will calculate a per day usage. They will multiply the per day usage by the number of days for the new customer's bill to arrive at an estimated read. If the account is time-of-use, the Billing Associate uses a split of 40% on-peak and 60% off-peak .
2. Utilize a system estimating program that calculates estimated usage using either of the two methods below:
 The Base load methodology estimates kWh as follows:
 1. If a winter month is billing add the kWh for most recent 6 winter months; if summer add the most recent 6 summer months to come up with Total kWh.
 2. Add the number of days in the same six-month period being used for your base load to come up with Total Days.
 3. Multiply the Total kWh for the summer or winter period by 30.
 4. Divide previous calculation by Total Days for summer or winter period.
 5. Multiply the previous calculation by the number of days in the current month billing period
 6. Divide the previous calculation by 30.

For example, if the billing month is May it is a summer month. Add the kWh for the 6 summer months of the previous year since these are the most recent. Assume they are:

May (This period) number of days = 32 days

May (previous year) 995 – 30 days

June 1532 - 29 days

July 1796 - 31 days

August 2098 - 29 days
September 1919 - 31 days
October 1629 - 28 days

Total kWh = 9969
Total days = 178
 $9969 * 30 = 299070$
 $299070 / 178 = 1680$
 $1680 * 32 = 53760$
 $53760 / 30 = 1792$

Estimated consumption for May would be 1792 kWh.

If baseload information is not available, the system could then use the Previous Month's Usage Methodology that calculates estimated usage using the kWh from the previous month. Previous month's usage is calculated as follows:

1. Multiply the usage from the previous month times 30
2. Divide the calculation above by the actual number of days in the previous month
3. Multiply the previous calculation by the number of days in the current month billing period
4. Divide the previous calculation by 30.

For example, if the billing month is January, you are in a winter month.

December usage = 2369
December number of days = 27
January number of days = 32

$2369 * 30 = 71070$
 $71070 / 27 = 2632$
 $2632 * 32 = 84224$
 $84224 / 30 = 2807$

January estimate usage would be 2807 kWh.

3. Obtain a read after the final bill read date. Determine the difference between the last read prior to the estimated final read and the new read and calculate per day usage. Multiply this per day usage by the number of days for the final bill.

ATTACHMENT 2



Jana Van Ness
Manager
Regulatory Compliance

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Phoenix, AZ 85072-3999

October 10, 2003

Mr. Ernest Johnson
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

OCT 10 2003

RE: Semi-Annual Compliance Filing Pursuant to Decision No. 64180
Waiver of PSWG First and Final Bill Estimates
Docket No. E-00000A-00-0403

Dear Mr. Johnson:

Pursuant to the above referenced decision, Arizona Public Service Company ("APS" or "Company") made Semi-Annual filings regarding estimated initial and final bills on October 15, 2002 and April 15, 2003. As part of the Company's ongoing efforts to monitor compliance with Arizona Corporation Commission ("Commission") orders and regulations, we have determined that the October and April filings omitted a description of APS' procedures for estimating customer demand (kW) for those APS customers having demand metering. We have also clarified and expanded upon our description of the Company's kWh estimation process. Attached please find a complete description of the Company's estimation procedures.

Please note that although Decision No. 64180 required APS to submit its estimation procedures for "first and final" billing estimates, these are, in fact, the estimation procedures generally used by the Company since 1998 in all instances in which bill estimation is required or authorized. It is also consistent with the estimation methodology approved by the Utilities Director on July 3, 2001 for interval (direct access) metering pursuant to A.A.C. R14-2-1613 1612(L) (14) and A.A.C. R14-2-210 (A) (5).

If you or your staff have any questions or concerns concerning the Company's prior or current use of these estimation procedures, please feel free to call me.

Sincerely,

Jana Van Ness
Manager
Regulatory Compliance

Attachment

JVN/srm

Cc: Manager, Compliance and Enforcement
Docket Control (Original, plus 13 copies)

ARIZONA PUBLIC SERVICE COMPANY
Semi-annual Compliance Filing Pursuant to Decision No. 64180
Docket No. E-00000A-00-0403
Estimating Methodology

APS uses the below-described methods for estimating a read for an initial, final or any other active monthly bill where APS is not able to obtain a complete and/or valid meter read. In such instances, the Company's Billing Associates use the methods below to estimate a billing read. They can either manually calculate the estimate or utilize a computerized system estimating program, both of which are based on similar sets of assumptions.

ESTIMATING kWh:

Initial and/or Active Monthly Bill Estimate – New Meter Set, No History

These are created when a new meter is set but when the meter is assigned to a route, the route has already gone to the field to be read for the current month. When this occurs, APS' billing system flags these as exceptions and the accounts are routed to a Billing Associate. If the number of days between the meter set and read date is less than 10, the Billing Associate estimates the read at zero. The customer's first bill is only a prorated basic service charge. If the number of days is greater than 10, the Billing Associate will estimate a read using 20 kWh per day times the number of days.

Initial, Final and/or Active Monthly Bill Estimate – Existing Meter, History

The majority of these are created by access problems. Since there may be history available for the site, the Billing Associate will estimate the read by considering and using the following methodologies for estimating base load (if sufficient history exists). The Billing Associate will also review actual data from the customer's previous billing month, and also the same month a year ago if either insufficient history exists to determine base usage or the estimation of base usage appears unusually high compared to either the last month or same month, last year consumption.

A. Base Load Methodology:

1. If a winter month is being estimated, add the kWh for most recent 6 winter months; if summer, add the most recent 6 summer months to come up with Total kWh.

<u>Months:</u>	<u>Residential</u>	<u>Commercial</u>
Winter	November-April	November-May
Summer	May-October	June-October

2. Add the number of days in the same six-month period being used for your base load to come up with Total Days.
3. Multiply the Total kWh for the summer or winter period by 30.
4. Divide previous calculation by Total Days for summer or winter period.
5. Multiply the previous calculation by the number of days in the current month billing period
6. Divide the previous calculation by 30.

For example, if the billing month is May, it is a summer month. Add the kWh for the 6 summer months of the previous year since these are the most recent. Assume they are:

May (This period) number of days = 32 days

May (previous year) 995 – 30 days

June 1532 - 29 days
July 1796 - 31 days
August 2098 - 29 days
September 1919 - 31 days
October 1629 - 28 days

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 $299070 / 178 = 1680$
 $1680 * 32 = 53760$
 $53760 / 30 = 1792$

Estimated consumption for May would be 1792 kWh.

B. Previous Month's Usage Methodology:

Calculates estimated per day usage using the kWh from the previous month.

1. Multiply the usage from the previous month times 30.
2. Divide the calculation above by the actual number of days in the previous month
3. Multiply the previous calculation by the number of days in the current month billing period
4. Divide the previous calculation by 30

For example, January is a winter month and would be estimated as follows:

December usage = 2369
December number of days = 27
January number of days = 32

$2369 * 30 = 71070$
 $71070 / 27 = 2632$
 $2632 * 32 = 84224$
 $84224 / 30 = 2807$

January estimate usage would be 2807 kWh.

C. Same Month a Year Ago Methodology:

This is calculated similar to the Previous Month's Usage Methodology, however, usage from the Same Month a Year Ago is used. If the account was not on a Time-Of-Use service plan a year ago, but is currently, the Billing Associate uses a split of 40% on-peak and 60% off-peak in the summer and 30% on-peak and 70% off-peak during the winter months.

D. Estimating Based on Actual Reads

The Associates are also able to estimate a read for Final and Active Monthly Bills by using actual reads and determining the difference. The difference between the last actual read, prior to the estimated read, and the new actual read are used to calculate the per day usage. Multiply the per day usage by the number of days for the bill.

For example:

May 15 is actual read of 19886
June 16 is an estimated read for 32 days (May 15 to June 16)
July 14 is an actual read of 23201 for 28 days (June 16 to July 14)

Total number of days: $28 + 32 = 60$
Total Usage: $23201 - 19886 = 3315$
Per day usage: $3315 \div 60 = 55.25$
Prorated June usage: $32 \times 55.25 = 1768$
Prorated June read: $19886 + 1768 = 21654$

ESTIMATING kW:

Initial, Final and/or Active Monthly Bill - Estimating Demand (kW):

The APS Billing System will estimate demand reads. The calculation for estimating the demand is as follows:

A. Residential Time-Of-Use Demand Service Plan with a Time-Of-Use Meter:

1. Calculate the estimated on-peak kWh using the appropriate kWh estimating methodology
2. Multiply 13 by the number of days in the billing period (13 represents the on-peak hours)
3. Divide the estimated on-peak kWh by the previous calculation
4. Divide the previous calculation by 35%¹ (this represents the average residential load factor)
5. Add 0.05 to the previous calculation (this is for rounding purposes)

¹ This was changed from 50% for residential time-of-use and from 45% for residential non-time-of-use on August 24, 2002.

Assuming on-peak estimated kWh of 842, if the system were estimating a demand kW read for this service the calculation would be:

1. $13 * 32 = 416$
2. $842 / 416 = 2.02$
3. $2.02 / 35\% = 5.77$
4. $5.77 + .05 = 5.82$

The estimated demand for the service would be 5.82.

B. Residential Non-Time-Of-Use Service Plan:

1. Calculate the estimated kWh using the appropriate kWh estimating methodology
2. Multiply 24 hours by the number of days in the billing period
3. Divide the estimated kWh by the previous calculation
4. Divide the previous calculation by 35%¹ (this represents the average residential load factor)
5. Add 0.05 to the previous calculation (this is for rounding purposes)

¹This was changed from 50% for residential time-of-use and from 45% for residential non-time-of-use on August 24, 2002.

C. Non-Residential:

All non-residential services that can be estimated are calculated the same as above, except the load factor percentage is 50%².

² This was changed from 60% on August 24, 2002

Correcting an Estimated Demand (kW):

The APS Billing Program will produce an exception bill when, after having an estimated demand read, we obtain an actual demand read which is lower than the estimated demand read.

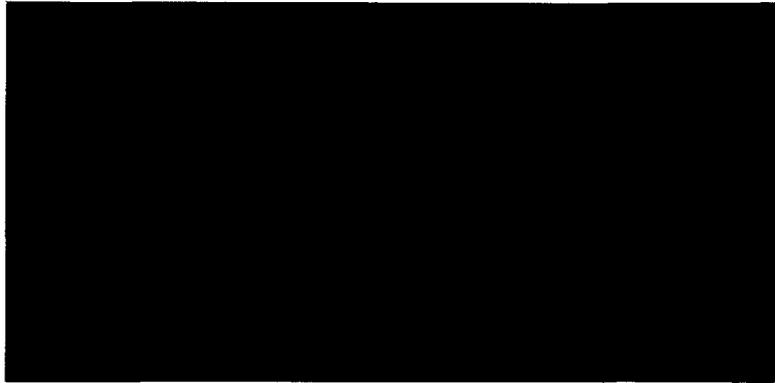
For example:

May is actual read and reset of demand - actual demand is 6.4

June is estimated - estimated demand is 7.3

July is actual read and reset of demand - actual demand is 6.9

The July bill will produce a billing exception because the actual demand is less than the estimated demand. The Billing Associate will work the exception, and using their billing expertise, lower the June demand to something equal to, or less than 6.9.



**ARIZONA CORPORATION COMMISSION
UTILITIES DIVISION**

**DIRECT
TESTIMONY
OF
PERRY L. WHEATON
JOEL F. JEANSON
JOYCE I. STEINGASS**

DOCKET NOS. E-01345A-04-0657 AND E-01345A-03-0775

**AVIS READ; individually, and on Behalf of All
Others Similarly Situated, Complainants,**

v.

**ARIZONA PUBLIC SERVICE COMPANY,
Respondent.**

**IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
A DECLARATORY ORDER REGARDING BILL
ESTIMATION PROCEDURES**

JANUARY 24, 2005

WHEATON

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MARC SPITZER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

AVIS READ; individually, and on Behalf of All)
Others Similarly Situated,)
Complainants,)
v.)
ARIZONA PUBLIC SERVICE COMPANY,)
Respondent.)
_____)

DOCKET NO. E-01345A-04-0657

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
A DECLARATORY ORDER REGARDING BILL)
ESTIMATION PROCEDURES)
_____)

DOCKET NO. E-01345A-03-0775

DIRECT
TESTIMONY
OF
PERRY L. WHEATON
CO-PRESIDENT
BARRINGTON-WELLESLEY GROUP, INC.

JANUARY 24, 2005

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EXECUTIVE SUMMARY
ARIZONA PUBLIC SERVICE COMPANY
DOCKET NOS. E-01345A-04-0657 & E-01345A-03-0775

The Utilities Division Staff (Staff) of the Arizona Corporation Commission (ACC or Commission) retained the Barrington-Wellesley Group, Inc. (BWG) to perform an inquiry into the usage estimation, meter reading, and billing practices of Arizona Public Service Company (APS or Company). On December 28, 2004, the initial report related to this inquiry was filed with the Commission.

The purpose of this testimony is to provide the results of work completed since the issuance of the December 28, 2004 report. The results of our additional work have not changed the conclusions and recommendations included in our initial report. In this testimony, we present additional findings and recommendations. The key additional recommendations are as follows.

- The Commission should require APS to refund overestimated demand charges totaling at least \$171,686 plus interest.
- The Commission should require APS to change its current methodology for estimating demand to one using customer-specific, prior month kW to estimate demand.
- The Commission should require APS to commence an internal audit of its compliance with Commission rules and Commission-approved tariffs within three months of the close of this proceeding and complete the audit, with a copy of the audit report to be filed with the Commission, within twelve months of the close of this proceeding.

This testimony also provides additional support for some of the recommendations set forth in the December 28, 2004 report. A complete summary of Staff recommendations related to the inquiry into the usage estimation, meter reading, and billing practices of APS, including the recommendations contained in Staff's report dated December 28, 2004, is provided in Section Nine of this testimony.

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INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Perry L. Wheaton. I am the Co-President and Co-Founder of the Barrington-Wellesley Group, Inc. BWG is a general management consulting firm which performs a significant portion of its work in the electricity, gas, and telephone industries. My business address is P.O. Box 2390, New London, New Hampshire 03257.

Q. Please describe your educational background and professional experience.

A. I have over thirty years of diversified management consulting and auditing experience and have performed financial, operations, and/or affiliate interest reviews for over twenty-five utilities. I have directed twenty-five management reviews of public utilities for state regulatory commissions. In my twelve years as an auditor and consultant with Coopers and Lybrand, I had extensive experience in the financial and systems operations of utilities, financial services companies, energy services companies, and manufacturers. I have an AB from Hamilton College and an MBA in public accounting from Rutgers University. My complete resume is included as Schedule PLW-1.

Q. What is the scope of your testimony in this case?

A. I am the BWG engagement director for the inquiry into the usage estimation, meter reading, and billing practices of APS on behalf of the Staff. Our initial report was filed on December 28, 2004. This testimony presents findings, conclusions, and recommendations based on work completed since the initial report was prepared. This testimony also provides additional explanations and support for some of the recommendations set forth in the December 28, 2004 Report.

1 **Q. Has BWG proposed any additional recommendations contained in this testimony**
2 **that resulted from work completed after the issuance of Staff's December 28, 2004**
3 **Report?**

4 **A.** Yes, BWG has five additional recommendations.

5 1. APS should be required to change the methodology that it uses to estimate
6 demand from one using class average load factors to one using customer-
7 specific, prior month kW. The use of customer specific demand history results
8 in more accurate demand estimates.

9 2. APS should be required to refund to customers the overbilled demand charges
10 plus interest that occurred from September 1998 with the implementation of the
11 new CIS through September 2003 when changes were made to the Company's
12 CIS to correct this problem. There were 9,056 residential customers who were
13 overbilled based upon inaccurate demand estimation, and the overbilling was not
14 subsequently credited to the customer's account. The amount of the overbilling
15 which should be credited to the appropriate residential customers' accounts totals
16 \$171,686. APS is still compiling similar data for general service customers.
17 Staff will update this testimony once it receives that information. APS'
18 calculation of these refunds will be subject to verification as part of the
19 independent audit recommended by Staff. In general, based on our analyses, we
20 recognize that APS' demand estimating methodology more often resulted in
21 underbilled demand than overbilled demand during this period.

22 3. BWG has four recommendations related to meter reading.

23 a. APS should be required to develop and install performance measures to
24 document the efforts that it has taken to comply with the Commission
25 requirement that "(a)fter the second consecutive month of estimating the

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customer's bill for reasons other than severe weather, the utility will attempt to secure an accurate reading of the meter." (R14-2-210. A. 3.).

- b. APS should specifically include the use of EZ-Read as one of the steps taken to resolve a "no access" situation.
 - c. APS should utilize available DB Microware reports to review lock-outs by route to monitor trends in lock-outs and reduce the number of "no access" meters.
 - d. APS should establish an internal process whereby after three consecutive estimates, continued instances of consecutive estimates due to "no access" situations are reported and made visible to increasing levels of APS management.
4. APS should perform an analysis to determine whether the inclusion of May as a summer season month for purposes of estimating kWh is appropriate. This analysis should be filed with the Commission within 90 days of the conclusion of this matter. In reviewing the detailed analyses supporting Mr. Rumolo's November 23, 2004 Testimony, we noticed that estimated kWh consumption is generally higher than the actual kWh consumption in the month of May. May is the first month of the summer season; therefore, CIS estimates consumption billed in May using the summer seasonal average. Due to cycle billing, approximately one-half of consumption billed in May will represent energy used in April. This trend is reversed to some degree in the early winter season months.
5. APS should enhance its "no access" resolution process to include the sending of certified letters at the time it notifies customers that continued "no access" will result in the possible discontinuance of service.

1 **Q. Did the visit to Avis Read's Paradise Valley premises, the interview of the meter**
2 **reader assigned to Avis Read's property, and the interview with the meter reading**
3 **supervisor change Staff's findings related to Company actions to obtain access to Ms.**
4 **Read's meter?**

5 A. No. If anything, it is now clearer that APS had reasonable remedies that it failed to
6 implement to resolve the "no access" situation at Ms. Read's premises in Paradise Valley.
7 For example, APS failed to contact Ms. Read to arrange for the replacement of the lock
8 key that she had made available to the meter reader and failed to respond to Ms. Read's
9 offer to allow APS to replace her lock with an APS lock. This is discussed in more detail
10 in Section Seven of my testimony.

11
12 **Q. Do you have any additional recommendations?**

13 A. Yes, we have two additional recommendations. First, APS should be required to
14 commence an internal audit of its compliance with Commission rules and Commission-
15 approved tariffs within three months of the close of this proceeding and complete the
16 audit, with a copy of the audit report to be filed with the Commission, within twelve
17 months of the close of this proceeding. APS completed a "CIS Compliance to ACC Rules
18 and Regulations Audit" in August 2002; however, this audit failed to identify that APS
19 was not estimating usage for residential demand in conformance with the tariff provisions
20 for Rate Schedules EC-1 and ECT-1R.

21 Second, APS should be required to provide documentation that lists the customers who
22 were not issued three or more bills as a result of APS' CIS problems during late 1999 and
23 early 2000. This documentation should also describe all the circumstances surrounding
24 these customers' accounts so that the Commission may evaluate whether they were
25 impacted in a manner similar to Avis Read. For example, this report should indicate
26 whether APS offered customers extended payment terms once the backbill was issued,

1 describe what terms were offered, and discuss whether APS communicated with these
2 customers to make them aware of the billing problems.

3
4 **Q. What was the overall affect of APS' class average load factor estimating**
5 **methodology?**

6 A. In general, our analysis shows that customers receiving bills that contain estimated
7 demand charges have more often been underbilled demand than overbilled demand since
8 March 1999. The results of our analyses are discussed in more detail in the following
9 section of my testimony. APS' use of a class average load factor to estimate demand more
10 frequently underestimates demand than overestimates demand, and during the period from
11 March 1999 to August 2002, when APS added a "generosity factor" to the class average
12 load factor, this tendency towards underestimation was exacerbated.

13
14 **SECTION ONE: DEMAND ESTIMATION METHODOLOGIES**

15
16 **Q. Which alternative demand estimation methodologies were evaluated in forming your**
17 **recommendation related to demand estimation?**

18 A. We evaluated the following five demand estimating methodologies in forming our
19 recommendation related to demand estimation:

- 20 o Class average load factors
- 21 o Seasonal class average load factors
- 22 o Customer specific load factors
- 23 o Customer specific historical kW – prior month
- 24 o Customer specific historical kW – same month prior year

25
26 **Q. Please describe the class average load factor demand estimating methodology.**

1 A. In March 1999, APS began using class average load factors to estimate demand for
2 residential customers (rate schedules EC-1 and ECT-1R) and certain general service
3 customers (rate schedule E-32). Class average load factors are used in conjunction with
4 customer-specific kWh consumption to estimate demand using calculations described in
5 detail in Chapter IV of the December 28, 2004 Report. "Load factor" represents the ratio
6 of a customer's average hourly usage to the customer's peak hourly usage. APS
7 calculated load factors for each of these three customer classes (EC-1 - residential, ECT-
8 1R - residential time-of-use, and E-32 - general service under 3 MW). APS used metering
9 information from Interval Data Recording (IDR) devices installed at 99 residential (EC-1)
10 customer premises, 56 residential time-of-use (ECT-1R) customer premises, and 949
11 general service (E-32) customer premises to calculate the class average load factors.

12
13 **Q. Please describe the seasonal class average load factor demand estimating**
14 **methodology.**

15 A. The seasonal class average load factor methodology is a variation of the class average load
16 factor demand estimating methodology described above. Using information provided by
17 APS, we determined the extent to which class average load factors for the winter and
18 summer seasons varied from the annual class average load factor calculated by APS and
19 applied the seasonal differences to the annual class average load factors currently being
20 used. As expected, the summer class average load factors for residential customers were
21 higher than the winter class average load factors. However, for general service customers,
22 we calculated no variance in winter and summer seasonal class average load factors. As a
23 result, we did not estimate demand using a seasonal class average load factor for general
24 service customers billed under rate schedule E-32.

25
26 **Q. Please describe the customer specific load factor demand estimating methodology.**

1 A. The customer specific load factor demand estimating methodology was used by APS
2 when demand was estimated by the "old CIS" prior to September 1998. This
3 methodology uses customer specific information to calculate load factor when this
4 information is available. The "old CIS" calculated customer-specific load factors by
5 averaging the load factors from the two previous months and the same month of the prior
6 year. BWG used this same calculation to evaluate the customer specific load factor
7 demand estimation methodology.

8
9 **Q. Please describe the customer specific historical kW (prior month) demand estimating**
10 **methodology.**

11 A. The Commission-approved tariffs for rate schedules EC-1 and ECT-1R contain language
12 describing the "determination of kW capacity." The tariff language states that "in the
13 event the meter is inaccessible to the meter reader due to locked gates or because of safety
14 limitations, the kW shall be that measured since the last resetting of the kW dial." While
15 the use of the word "since" in this sentence is somewhat confusing, the language suggests
16 that APS should estimate demand using the last actual demand reading. We included this
17 methodology in our analysis to evaluate the accuracy of usage estimations performed
18 under the aforementioned Commission-approved tariff language.

19
20 **Q. Please describe the customer specific historical kW (same month, prior year)**
21 **demand estimating methodology.**

22 A. Rule R14-2-210 Billing and collection, Section A 2 states that "if the utility is unable to
23 read the meter on the scheduled meter read date, the utility will estimate the consumption
24 for the billing period giving consideration to the following factors where applicable:

- 25 a. The customer's usage during the same month of the previous year.
26 b. The amount of usage during the preceding month."

1 We included this methodology in our analysis to determine the effect of applying the
2 provisions of this rule to kW as well as kWh.

3
4 **Q. Please describe in more detail the process used to analyze the five alternative demand
5 estimation methodologies.**

6 A. To evaluate these alternative demand estimation methodologies, we selected a sample of
7 demand-billed customers from a listing prepared by APS in response to Staff DR 7-6.
8 From the population of all demand billed customers, we selected approximately every
9 400th customer to ensure a sample size of at least 300 accounts. The actual number of
10 customers included in the sample that we tested is as follows.

11

Rate Schedule	Number of Customers in Sample	Number of Individual Bills Tested – Class Average Load Factor	Required Sample Size to Achieve a 99 Percent Confidence Level – Assumed Mean of 2 kW	Required Sample Size to Achieve a 99 Percent Confidence Level – Using Calculated Mean of Sample
EC-1	54	1255	11	32
ECT-1R	140	2747	18	1226
E-32	193	3630	2453	3466

12 The increased sample size for rate schedule E-32 reflects the greater variability in usage
13 among customers in this rate class.

14 APS then provided twenty-four months' meter reading and billing history for the
15 customer, if available.

16 We developed calculations using an Excel spreadsheet to estimate demand using each of
17 the five methodologies described above. These estimates of demand were then compared
18 to the actual demand to determine the degree of accuracy of the demand estimation
19 methodology.

20

1 **Q. Under which of these five methodologies are customers likely to receive the least**
2 **accurate estimate of demand?**

3 A. As can be seen in the following tables, the use of class average load factors is the least
4 accurate method of estimating demand. However, the results of our analysis appear to
5 support APS' assertion that the use of a class average load factor will result in the
6 underestimation of demand more often than the overestimation of demand.

7
8 **Q. Under which of these five methodologies are customers likely to receive the most**
9 **accurate estimate of demand?**

10 A. As can be seen in the following tables, the use of customer specific kW from the prior
11 month is the most accurate method of estimating demand. In addition, the use of the
12 customer specific kW from the previous month effectively addresses the issue of the
13 naturally occurring phenomenon of rising demand that occurs in the months approaching
14 summer as discussed in finding IV-8 in Staff's December 28, 2004 Report. The use of
15 other demand estimating techniques makes it less likely that overestimated demand will be
16 properly credited as a result of the next month's demand comparison. The use of
17 customer-specific kW from the previous month to estimate demand also enhances the
18 likelihood that customer-specific demand history will be available on which to base the
19 demand estimate.

20
21 **Q. How should demand be estimated if customer-specific history is not available?**

22 A. If customer-specific kW from the previous month is used to estimate demand, the only
23 instances in which customer-specific history will not be available are when the bill is the
24 customer's initial bill or when the prior month's bill was estimated. For initial bills
25 covering a period of less than fifteen days, we believe that APS should not bill demand
26 until the actual demand reading is obtained in the following month. In this case, the

1 customer should be billed a pro rata amount for the initial billing period. For initial bills
2 covering a period of fifteen or more days, demand should be billed using actual premises
3 history from the prior month unless the Company knows that the general characteristics of
4 the previous customer's operations vary significantly from those of the current customer.
5 If the prior month's bill was estimated, APS should use the same month from the prior
6 year as the basis for the estimated demand reading. In the event this historical information
7 is not available, APS should consider its experience with other customers of the same
8 class in that area with the general characteristics of the customer's operations.

9
10 **Q. Please summarize the results of these analyses.**

11 **A.** The following tables present by rate schedule the differences between kW estimated using
12 each of the five methodologies described above and the actual kW demand readings.
13 These results are presented in more detail in Schedule PLW-2.

14 **Rate EC-1 – kW Differences**

Methodology	Class Average Load Factors	Seasonal Class Average Load Factors	Customer Specific Load Factors	Customer Specific kW – Prior Month	Customer Specific kW – Same Month Prior Year
Percent Within +/- 2 kW	55.7%	59.4%	75.4%	81.3%	77.2%
Percent Within +/- 4 kW	88.6%	92.0%	96.5%	95.9%	93.5%
Percent Within +/- 8 kW	99.3%	99.4%	99.8%	99.8%	99.5%
Percent Within +/- 16 kW	100.0%	100.0%	100.0%	100.0%	100.0%
Percent Within +/- 32 kW	100.0%	100.0%	100.0%	100.0%	100.0%
Percent Underestimated	66.7%	65.9%	51.5%	46.3%	53.8%
Percent – No Difference	1.6%	2.1%	0.2%	6.4%	3.8%
Percent Overestimated	31.7%	32.0%	48.3%	47.3%	42.4%

1

Rate ECT-1R – kW Differences

Methodology	Class Average Load Factors	Seasonal Class Average Load Factors	Customer Specific Load Factors	Customer Specific kW – Prior Month	Customer Specific kW – Same Month Prior Year
Percent Within +/- 2 kW	53.3%	63.1%	71.0%	73.7%	74.2%
Percent Within +/- 4 kW	84.6%	89.3%	92.1%	92.5%	93.4%
Percent Within +/- 8 kW	97.2%	98.3%	99.4%	99.0%	99.1%
Percent Within +/- 16 kW	99.7%	99.9%	99.8%	99.9%	99.9%
Percent Within +/- 32 kW	100.0%	100.0%	100.0%	100.0%	100.0%
Percent Underestimated	60.6%	60.7%	48.3%	48.2%	51.0%
Percent – No Difference	1.3%	2.0%	0.0%	3.8%	3.4%
Percent Overestimated	38.2%	37.3%	51.7%	48.0%	45.6%

2

3

Rate E-32 – kW Differences

Methodology	Class Average Load Factors	Customer Specific Load Factors	Customer Specific kW – Prior Month	Customer Specific kW – Same Month Prior Year
Percent Within +/- 2 kW	33.0%	57.7%	73.4%	68.6%
Percent Within +/- 4 kW	51.2%	73.7%	82.7%	80.2%
Percent Within +/- 8 kW	73.5%	86.5%	90.3%	89.6%
Percent Within +/- 16 kW	88.0%	92.8%	95.1%	93.9%
Percent Within +/- 32 kW	93.3%	96.6%	97.9%	96.9%
Percent Underestimated	73.2%	51.8%	31.5%	40.5%
Percent – No Difference	6.8%	0.2%	37.6%	28.6%
Percent Overestimated	20.0%	48.0%	30.8%	30.9%

The following tables summarize by rate schedule the result of these analyses for estimated dollar differences from the actual demand charges billed. These results are presented in more detail in Schedule PLW-2.

Rate EC-1 – Dollar Differences

Methodology	Class Average Load Factors	Seasonal Class Average Load Factors	Customer Specific Load Factors	Customer Specific kW – Prior Month	Customer Specific kW – Same Month Prior Year
Percent Within +/- \$10	35.1%	29.9%	51.8%	65.6%	60.3%
Percent Within +/- \$20	64.7%	53.0%	83.4%	85.1%	81.6%
Percent Within +/- \$40	93.8%	80.6%	97.4%	97.5%	95.3%
Percent Within +/- \$80	99.4%	94.0%	99.8%	99.8%	99.5%
Percent Within +/- \$160	100.0%	99.7%	100.0%	100.0%	100.0%
Percent Underestimated	66.7%	47.8%	51.5%	46.3%	53.6%
Percent – No Difference	1.6%	1.6%	0.2%	6.4%	3.8%
Percent Overestimated	31.7%	50.6%	48.3%	47.3%	42.4%

Rate ECT-1R – Dollar Differences

Methodology	Class Average Load Factors	Seasonal Class Average Load Factors	Customer Specific Load Factors	Customer Specific kW – Prior Month	Customer Specific kW – Same Month Prior Year
Percent Within +/- \$10	28.9%	36.8%	46.8%	49.1%	48.5%
Percent Within +/- \$20	54.9%	63.1%	71.8%	73.4%	75.3%
Percent Within +/- \$40	84.6%	88.2%	92.0%	92.9%	92.2%
Percent Within +/- \$80	97.0%	98.2%	99.5%	99.0%	99.0%
Percent Within +/- \$160	99.6%	99.9%	99.9%	99.8%	100.0%
Percent Underestimated	60.6%	60.7%	48.3%	48.2%	51.0%
Percent – No Difference	1.3%	2.0%	0.0%	3.8%	3.4%
Percent Overestimated	38.2%	37.3%	51.7%	48.0%	45.6%

1 **Rate E-32 – Dollar Differences**

Methodology	Class Average Load Factors	Customer Specific Load Factors	Customer Specific kW – Prior Month	Customer Specific kW – Same Month Prior Year
Percent Within +/- \$10	66.8%	83.1%	87.5%	85.8%
Percent Within +/- \$20	84.1%	90.9%	93.1%	92.5%
Percent Within +/- \$40	91.6%	95.4%	96.9%	96.0%
Percent Within +/- \$80	95.8%	97.8%	98.7%	97.7%
Percent Within +/- \$160	98.2%	99.1%	99.5%	99.1%
Percent Underestimated	56.4%	39.4%	27.4%	34.3%
Percent – No Difference	27.6%	21.6%	45.7%	39.5%
Percent Overestimated	16.0%	38.9%	26.9%	26.2%

2
3 **Q. Please explain why the Rate ECT-1R “kW Differences” table appears to indicate that**
4 **Customer-Specific kW – Same Month Prior Year is more accurate than Customer**
5 **Specific kW – Prior Month, while the Rate ECT-1R “Dollar Differences” table**
6 **appears to indicate that Customer Specific kW – Prior Month is more accurate than**
7 **Customer-Specific kW – Same Month Prior Year.**

8 **A.** I would first like to point out that the differences in the degree of accuracy between both
9 customer-specific kW demand estimating methodologies are not significant for this rate
10 schedule. In addition, the stratification of data selected to present the results of these
11 analyses can result in minor differences. While a recommendation regarding which
12 customer-specific kW demand estimating methodology may be “too close to call” for Rate
13 ECT-1R, we believe the other advantages (see the answer to the second question on page
14 11 of this testimony) associated with the use of the customer-specific kW demand
15 estimating methodology are sufficient to ‘break the tie’ and that there are advantages to
16 having a consistent demand estimating methodology across rate schedules, such as
17 employee training and customer communications.

1 **Q. Did APS consider the use of customer specific historical kW to estimate demand**
2 **when selecting the use of class average load factors to estimate demand?**

3 A. No. Based on interviews with APS Pricing and Regulation department personnel, no
4 detailed analyses of alternative demand estimation methodologies were completed prior to
5 the implementation of the methodology using class average load factors in March 1999.
6 The Company considered the use of class average load factors to be unbiased and
7 implemented a generosity factor to ensure this methodology would tend to result in
8 underestimated demand.

9 In addition, no subsequent analyses of alternative demand estimation methodologies were
10 completed by the Company to confirm the appropriateness of its use of class average load
11 factors until the completion of the studies summarized in David Rumolo's Testimony on
12 behalf of APS' application for a declaratory order on November 23, 2004.

13

14 **Q. Will the use of customer-specific previous month kW eliminate the possibility that**
15 **demand may be significantly over or under-estimated?**

16 A. No demand estimating methodology can accurately predict customer behavior and the
17 resulting energy use all of the time. As shown in the above tables, however, the use of
18 customer-specific previous month kW to estimate demand reduces the number of
19 instances in which demand is significantly over or under-estimated compared to the use of
20 class average load factors.

21

22 **Q. What is the most effective means of determining accurate usage?**

23 A. The most effective means to improve the accuracy of demand billing is to increase the
24 percentage of times that demand billing is based on an actual demand meter reading.
25 Staff's December 28, 2004 report contains a number of recommendations targeted at

1 reducing the number of instances in which usage is estimated due to “no access”
2 situations.

3
4 **Q. Is Mr. Rumolo’s description of APS’ demand estimating methodology as being based**
5 **on a load factor “calculated using an average figure based on all customers in that**
6 **particular rate class” accurate?**

7 A. No, APS calculated class average load factors based on a sample, not based on all
8 customers.

9
10 **Q. Do you agree with Mr. Rumolo’s representation that the procedures used to estimate**
11 **reads under the “old CIS” and “new CIS” are essentially the same?**

12 A. No, we believe that the change from the use of customer specific load factors to class
13 average load factors represents a significant change in estimating procedures. As can be
14 observed by reviewing the information in the above tables, the accuracy of the two
15 methodologies is not similar. One of the problems associated with APS’ implementation
16 of class average load factors in March 1999 was that the Company did not perform any
17 analyses at that time to confirm that the use of class average load factors is as accurate as
18 the use of customer-specific load factors or other possible demand estimation
19 methodologies. In fact, APS initially implemented the use of class average load factors
20 with a “generosity factor” to provide assurance that demand would not be overestimated.

21
22 **Q. Do you agree with Mr. Rumolo’s statement that “the use of a class average load**
23 **factor does not bias the estimated demands and appropriately scales the demand to**
24 **the estimated energy by avoiding customer-specific anomalies that may produce**
25 **significant distortions in the estimated demand”?**

1 A. In part. We agree that the use of class average load factors does not appear to bias the
2 estimation of demand. We also agree that the use of class average load factors avoids
3 customer-specific anomalies, although we question the implication that these anomalies
4 occur frequently enough to be a significant factor in the selection of a demand estimation
5 methodology. However, we dispute the importance placed on these two issues compared
6 to the importance of using a demand estimating methodology that most accurately
7 estimates demand. In our opinion, it is inappropriate to select a demand estimating
8 methodology on the basis of its ability to be unbiased and avoid customer-specific
9 anomalies without determining whether this same approach most accurately estimates
10 customer demand.

11

12 **Q. Finally, do you agree with Mr. Rumolo's contention that "the tariff language**
13 **provides perverse incentives to customers to deny APS access"?**

14 A. Mr. Rumolo contends that "a customer could deny access to APS during the hottest
15 months of the summer and would be billed on the last demand reading that may have
16 occurred before the high use periods." We agree that in some circumstances the use of the
17 last actual demand reading may provide a customer with an incentive to deny access to
18 APS. APS is currently allowed to convert a customer to a non-demand billed rate
19 schedule in the event that a customer denies access to the meter. If the Company suspects
20 that the customer is gaming the system, it should be able to use this existing remedy to
21 address the "no access" problem.

22

23 **Q. Should APS be required to adjust past usage estimations to reflect the customer-**
24 **specific kW method?**

25 A. Although we conclude that usage estimation methodologies based upon customer-specific
26 kW produce more accurate results than APS' class average load factor method, we do not

1 find that the use of class average load factors to estimate demand is completely
2 unreasonable. Usage estimations calculated with the class average load factor method will
3 not be as accurate as those calculated with customer-specific kW methods. The
4 improvement in accuracy is significant enough to lead us to recommend that the
5 Commission require APS to adopt the customer-specific kW method for future use.
6 However, the class average load factor method used by the Company is not so problematic
7 as to lead us to recommend that past usage estimations be adjusted. We think that such a
8 process would not produce meaningful benefits to customers because it would require
9 significant resources to accomplish and result in little difference on a net basis in the
10 amounts that customers pay.

11
12 **Q. Was APS unjustly enriched at the expense of Avis Read and other customers as a**
13 **result of its usage estimation practices?**

14 **A.** No, we found no evidence of the purposeful overbilling of customers, and we found that
15 APS' usage estimation methodology tends to result in underbills. However, we disagree
16 with APS' decision to not retroactively identify and credit those customers whose
17 accounts were not corrected for the overestimation of demand when the actual demand
18 reading was less than estimated demand billed. This issue is discussed in more detail in
19 Section Three of this testimony.

20 As discussed in detail in the December 28, 2004 Report, Chapter IV, Finding 8, the
21 naturally occurring phenomenon of rising demand that occurs in months approaching
22 summers may reduce the possibility that overestimated demand will be discovered.
23 However, we reviewed the numbers of estimated bills by month for the residential demand
24 (EC-1 and ECT-1R) and general service demand (E-32) rate schedules for the period 1995
25 through 2004 and found no evidence of trends to support the allegation that APS
26 manipulates the demand estimating process to its own advantage.

1 November 23, 2004 Testimony, we noticed that estimated kWh consumption is generally
2 higher than the actual kWh consumption in the month of May. May is the first month of
3 the summer season; therefore, CIS estimates consumption billed in May using the summer
4 seasonal average. Due to cycle billing, approximately one-half of consumption billed in
5 May will represent energy used in April. We recommend that APS should perform an
6 analysis to determine whether the inclusion of May as a summer season month for
7 purposes of estimating kWh is appropriate. This analysis should be filed with the
8 Commission within 90 days of the conclusion of this matter. This trend is reversed to
9 some degree in the early winter season months. When viewing consumption for a
10 complete twelve month period, we did not find that estimated consumption for the twelve
11 month period was consistently overstated.

12 Commission rules specify that electric utilities shall estimate usage by considering, where
13 applicable, the customer's usage during the same month of the previous year and the
14 customer's usage during the preceding month. While the seasonal average will not
15 include the amount of usage during the preceding month if the previous month is in a
16 different season, it always considers the consumption from the same month in the previous
17 year if the customer had service at the same premises during that period.

18 We reviewed all billing-related complaints sent to either the Commission or the APS
19 Consumer Advocate's Office during the period 1995 through 2004. There were no
20 observable trends related to the over or under-estimation of kWh consumption. In fact, it
21 appeared that there were as many or more complaints related to underestimated
22 consumption as overestimated consumption. As noted in the December 28, 2004 Report,
23 the problem with the Avis Read account was that consumption was underestimated rather
24 than overestimated.

25 We also reviewed selected customer information to determine if kWh consumption was
26 estimated more accurately using one of these three kWh estimating methodologies –

1 seasonal averages, same month prior year, and previous month. Based on the analyses
2 completed, it appears that the use of prior month consumption per day provides the most
3 accurate kWh estimate, however, the use of seasonal customer-specific consumption per
4 day results in the net underestimation of kWh on average of only 1.9 percent for those
5 customers reviewed.

6
7 **SECTION THREE: UNADJUSTED OVERBILLING OF DEMAND**

8
9 **Q. Please explain why you believe that refunds are due to customers as the result of**
10 **APS' over-billing of demand.**

11 A. In September 2003, APS programmed its customer information system (CIS) to
12 automatically identify and report as a billing exception those instances in which the actual
13 demand reading was less than the previously estimated demand. This programming
14 change allowed the Company to routinely identify those instances in which estimated
15 demand exceeded actual demand so the customer's account could be credited for the
16 difference. Before this programming change, these instances could not be routinely
17 identified. APS decided not to apply this change retroactively. As a result, there were
18 customers whose demand was over-estimated prior to September 2003 and whose
19 accounts were not credited for the overbilling.

20
21 **Q. What is the dollar amount due customers as a result of the overbilling of demand?**

22 A. Based on information provided by the Company in response to Staff DR 11-2, there are
23 9,056 residential customers affected by the uncorrected overbilling of demand. The
24 amount to be adjusted totals \$171,686. APS is still in the process of determining the
25 required adjustment for general service customers. APS' calculation of these refunds will
26 be subject to verification as part of the independent audit recommended by Staff.

1 **Q. Should APS be required to credit customers' accounts for interest accrued on the**
2 **over-billed demand?**

3 A. Yes. In this instance, APS knew that some of its customers may have been over-billed.
4 APS knowingly decided not to retroactively refund customers' overpayments of estimated
5 demand and has had the interest-free use of customers' funds for several years.

6
7 **Q. What interest rate should be used to calculate interest on overbilling?**

8 A. APS should calculate interest on overbilling using the same rate it currently uses to
9 calculate interest on customers' deposits.

10

11 **Q. What should APS be required to do if the customers who were over-billed demand**
12 **are no longer active customers?**

13 A. APS should take reasonable steps to locate those customers who are no longer active
14 customers. For those customers located, APS should issue refund checks for the amount
15 of the unadjusted overbilling and related interest. We recognize, however, that it is not
16 reasonable for APS to incur costs to locate customers when the amount of the potential
17 refund is insignificant. Therefore, we recommend that APS be required to make refunds
18 to inactive customers only in those instances in which the potential refund is greater than
19 \$5.00. APS should be required to maintain documentation of steps taken to locate
20 individual inactive customers.

21

22 **Q. How does this relate to the unadjusted overbilling of demand recommendation**
23 **included in Staff's December 28, 2004 Report?**

24 A. The December 28, 2004 Report contained the following recommendation.

25 "APS should evaluate the extent to which customers were over-
26 billed or under-billed during the period 1998-2003. APS should

1 identify those customers who are due credits because their
2 estimated demand was not adjusted downward when the actual
3 demand read came in less than the estimate. APS should also be
4 required to provide a credit to customers who were over billed.
5 Within ninety days of a decision in this matter APS should file a
6 report that details the results of its analysis and identifies
7 mechanisms by which it could provide refunds to customers who
8 were overbilled.”

9 Since the report was issued, APS has identified the number of residential
10 customers and the amounts overbilled related to this recommendation. These are
11 the amounts discussed above as having been provided in response to Staff DR 11-
12 2.

13
14 **SECTION FOUR: COMPARATIVE PRACTICES – OTHER**
15 **ARIZONA ELECTRIC UTILITIES**
16

17 **Q. Did Staff request additional comparative information from other Arizona electric**
18 **utilities subsequent to the issuance of the December 28, 2004 Staff report?**

19 **A.** Yes. Staff has asked other Arizona electric utilities to provide the total number of
20 customer bills estimated by month by rate schedule as well as the reasons for the estimates
21 for the period 1995 to the present. Staff also asked each utility to describe its practice for
22 securing an actual meter reading and its business rules used for exception reporting of
23 high and low consumption.

24
25 **Q. How does APS' percent of estimated bills compare with other Arizona electric**
26 **utilities?**

1 A. APS' estimated bills as a percent of total bills declined slightly from approximately 1.4
2 percent in 1995 to under 1.2 percent in 2004, while peaking in 1998 and 1999 at
3 approximately 2.0 percent. Please refer to Chapter III of the December 28, 2004 Report
4 for a more detailed discussion of APS' percent of estimated bills.

5 The following table summarizes the responses received from the other Arizona electric
6 utilities.

Utility	Average Percent of Estimated Bills - Range per Year
Duncan Valley Electric Cooperative, Inc.	0.00% - 0.15%
Garkane Energy Cooperative, Inc.	No estimates
Graham County Electric Cooperative, Inc.	0.21% - 0.52%
Mohave Electric Cooperative, Inc.	3.9% (data available for 2004 only)
Navopache Electric Cooperative, Inc.	0.06% - 1.28%
Trico Electric Cooperative, Inc.	0.33% - 0.60%
Tucson Electric Power Company	0.12% - 1.22%
UNS Electric, Inc.	0.35% - 0.39%

7 APS' percent of bills estimated is generally higher than that of the other Arizona electric
8 utilities. Mohave Electric, the only Arizona electric utility with a higher percentage of
9 estimated meter reads, had a high percentage of estimated meter reads in 2004 due to the
10 termination of its contract with a contract meter reading company in December without a
11 sufficient number of replacement meter readers available to avoid rendering customers'
12 bills based on estimated usage. APS has significantly more demand-billed customers,
13 both in numbers and as a percent of total, than the other Arizona utilities. These demand
14 meters must be physically probed in order to reset demand, thereby requiring access to the
15 meter. As a result, APS presumably has fewer opportunities to "scope" the meter reading

1 compared to the other utilities in the event access to the meter is restricted. This would
2 contribute to the observed differences in the percents of bills estimated.

3
4 **Q. How do APS' practices to secure an actual meter reading compare with the practices**
5 **of other Arizona electric utilities?**

6 A. APS's practices to secure an actual meter reading are also described in detail in Chapter
7 III of the December 28, 2004 Report. The practices of the other Arizona electric utilities,
8 as described by each individual utility, are shown in the following table.

9

Utility	"No Access" Practices
Duncan Valley Electric Cooperative, Inc.	Meter readers will visit customer premises as many times as practical during the meter reading cycle to obtain an actual meter reading. We may also call the customer and ask to have them read the meter. Obtaining a reading from every meter can at times be difficult where we have a number of meters located at remote mountain tops and ranches. We have installed power line carrier AMR meters at most of these locations, but there are still times when the AMR meters fail to read. Since we are small and have only one billing cycle per month, when we connect a customer at these remote locations we explain that it may become necessary to estimate a reading so as to not delay a billing cycle. The operations manager tries to contact customer by phone to describe the nature of the problem. If necessary, the operations manager will visit the customer premises to more clearly explain the issue. If phone or visits cannot be made a certified mailing is sent notifying the customer of the nature of the problem and to make contact with the Cooperative to discuss options.
Garkane Energy Cooperative, Inc.	NA – no meters are estimated. In remote areas of the system, Garkane has installed Turtle Meters which send an electronic meter reading.
Graham County Electric Cooperative, Inc.	If access to a meter is hindered the meter reader contacts the office and asks them to attempt to reach the owner. If the owner is unavailable then additional attempts during the cycle are made to gain access and to contact the owner. If all attempts are unsuccessful then an estimate is made.
Mohave Electric Cooperative, Inc.	During the past year, there have been no situations where an actual meter reading was not obtained when there was an access issue. No readings were estimated during 2004 due to a lack of access to the meter. Documentation for situations prior to 2004 is not available. Historically, access issues have been rare, but when such issues have occurred, standard procedure initially requires an attempt to contact the customer by telephone. If unsuccessful, the telephone call is followed by a certified letter to the customer.

Utility	"No Access" Practices
Navopache Electric Cooperative, Inc.	When a meter reader cannot access a meter it is flagged and reported to Safety and Loss Control. This department contacts the customer. No further attempt is made by the meter reader to get a reading. If the meter is a 3-phase or demand meter, several attempts are made, if the reading is still unavailable the customer is contacted immediately and we work with the customer until a reading is secured.
Trico Electric Cooperative, Inc.	After the second consecutive month of estimating the consumer's bill for reasons other than severe weather, the Cooperative will make every attempt to secure an accurate meter reading. The first billing cycle (month) will show as an estimate on the bill with the reason. If this is an access issue, i.e. blocked meter, vicious animal, locked gate, etc., we will then send a letter restating the reason and asking the customer to change the condition. If no change by the third month, another letter is sent, and if by the fourth month there has been no resolution we notify the customer of our right to disconnect service to their location.
Tucson Electric Power Company	<ol style="list-style-type: none"> 1. Field personnel fill-out door tag in detail and leave at customer's residence. Turn-in form with specific access information to group leader. 2. Group leader / supervisor refers information to Customer Service No Access Desk. 3. Customer Service Representative places telephone call to customer within 4 days of receiving written information. Two telephone attempts must be made. Attempts must take place on two different days at different times of the day. Document dates and times phone calls are made / messages left. 4. Customer Service sends Letter A to customer within 2 days of phone call being completed. 5. Customer Service sends Letter B to customer within 2 days of receiving notice of 2nd accessibility failure. 6. Customer Service sends Letter C, by certified mail, within 2 days of receiving notice of 3rd accessibility failure. 7. Disconnect, if necessary, on or after date specified in Letter C. <p>Note: Letters B and C notify customer of possible discontinuance of service and that reconnection will not occur until the accessibility issue has been resolved to the satisfaction of TEP and customer pays reconnect charge of \$150.</p>
UNS Electric, Inc.	<p>This process is followed for residential rate customers and small general rate customers. If a large general rate customer read is involved, a read is pursued until successful. No large general rate customer/demand metered customers are estimated.</p> <p>As provided in the tariffs, we will estimate no more than two consecutive bills.</p> <p>First time:</p> <ol style="list-style-type: none"> 1. The account of a no-access read is noted on the customer's account. 2. A postcard is mailed to the customer explaining that UNS Electric did not have access for a meter read and that their bill will be estimated. <p>Second time:</p> <ol style="list-style-type: none"> 1. due to a no-access read again, the customer's account is noted again.

Utility	"No Access" Practices
	<p>2. A second postcard is mailed to the customer indicating this is the second notice and they are to please contact the office for resolution.</p> <p>Third time:</p> <ol style="list-style-type: none">1. The account of a no-access read is noted on the customer's account.2. A service order is generated for a customer service person to be sent out to the address, obtain a read and make contact with the customer. <p>Issues are usually resolved at this point. However, if they are not resolved, listed below are the different steps that can be taken:</p> <ol style="list-style-type: none">1. If the customer service person comes back and has the read and had no trouble getting the read, the meter reader is informed that a read is expected in the future.2. If the customer service person discovers it is indeed an access issue, he/she negotiates a resolution with the customer and returns with a read and a plan which is conveyed to the Bill technician and the Meter Reader for future reads.3. If the customer service person is unable to negotiate a resolution, that information is reported back to the Bill Technician. The Bill Technician will make an attempt via telephone to contact the customer, explain the situation and obtain satisfaction for future access.4. If the customer is uncooperative (none in the last year or so), as a last resort, a standard letter is sent to the customer, along with the tariff that indicates that UNS Electric has a right to safe access to its meter for meter read and maintenance purposes. The tariff and letter indicate clearly the consequences and includes that they can be cut at the pole if an access problem is not resolved or continues.

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APS' practices to secure an actual meter reading do not appear significantly different than those practices in place at other Arizona utilities. However, TEP will ultimately send the customer a certified letter indicating that access must be provided or that service will be disconnected. APS does not send certified letters as part of its access resolution process.

Q. Based on this information, are there practices that you believe should be adopted by APS?

A. Yes, we believe that APS should enhance its "no access" resolution process to include the sending of certified letters at the time it notifies customers that continued "no access" will result in the possible discontinuance of service.

1 **Q. How do APS' business rules used for exception reporting of high and low**
2 **consumption compare with the practices of other Arizona electric utilities?**

3 A. APS' business rules used for exception reporting of high and low consumption have
4 changed over time. The "old CIS" reported exceptions if kWh usage was nine (9) times
5 higher or less than one-ninth the kWh of the comparable period. Under the "new CIS,"
6 the business rules changed to ten (10) times higher or less than one-seventh (0.14) the
7 comparable kWh using six-month seasonal information. In September 2003, the business
8 rule was changed to seven (7) times higher for residential customers using seasonal
9 information.

10 The following business rules are used by other Arizona electric utilities for consumption
11 exception reporting:

Utility	Consumption Exception Reporting Business Rules
Duncan Valley Electric Cooperative, Inc.	A reading that results in a usage change of +/- 50% will generate an exception report.
Garkane Energy Cooperative, Inc.	If the monthly kWh consumption exceeds 1.99 times the average monthly usage or 1/2 the average low consumption.
Graham County Electric Cooperative, Inc.	The Company writes an exception report on each read cycle that shows high and low consumption. The customer is reported high if the billing amount exceeds the high billing amount specified in a rate file. The customer is reported low if the billing amount is below the minimum specified in the rate file.
Mohave Electric Cooperative, Inc.	The billing software used by Mohave develops a "normal" or average usage for each customer each month. Mohave has then selected high and low variance limits based on the season of the year. These high and low variance limits are used by the software to generate variance reports that identify all accounts which fail the high-low variance test. During summer months, a usage that is over 200% higher than normal or over 35% lower than normal will be placed on a variance report for review. During the winter months, the variance percentages are set at 175% and 35%. These variance percentages are based on a determination of what are reasonable variances considering the temperature extremes experienced in the area.
Navopache Electric Cooperative, Inc.	Navopache's computer generates high and low consumption exception reports. This report is reviewed by revenue class and exceptions investigated. Navopache has a large base of seasonal members, variations in this revenue class are not

Utility	Consumption Exception Reporting Business Rules
	unusual.
Trico Electric Cooperative, Inc.	Trico's exception reporting is called a Prebill report, which is run daily. Accounts are flagged when they fall into the high/low percentage determined by our rate schedules. Flagging also occurs if consecutive months have the same kWh usage or if the maximum kWh usage by rate for that account is exceeded.
Tucson Electric Power Company	There are parameters defined in the CIS which produce a billing error if outside parameters. If a current bill is 2.5 times higher than the previous month's bill or 0.75 times less than the previous month it comes out on the Billing Errors for an Account (BERA) List. An exception billing administration specialist then determines if an investigation order should be issued or if the bill is acceptable.
UNS Electric, Inc.	UNS Electric's method of HILO value creation is to compare current month's premises usage to last year same month premises usage. If last year's data is missing, the current month is compared to last month's premises usage. Lacking both, current month consumption is compared to a peer estimate value created in the UGEN batch, using the same last year/last month values as stated above.

1 These responses suggest that APS' parameters for high-low consumption exception
2 reporting are less restrictive than those practices in place at the other Arizona electric
3 utilities. Therefore, it is possible that APS will have a higher percentage of bills based on
4 inaccurate meter readings mailed directly to customers without billing department review
5 than other Arizona electric utilities.

6
7 **Q. Why are these business rules important?**

8 A. These rules are important because they determine which bills are exception-reported.
9 When exception-reported, billing services representatives will manually review the
10 reported consumption and may issue a request for a field-verified read if the reported
11 consumption is considered to be out-of-line. In other instances, the representative may
12 determine that the index was misread and may correct a meter reading without having the
13 meter reading field-verified. These activities ensure that customers receive bills based on
14 accurate meter readings.

1 **SECTION FIVE: COMPARATIVE PRACTICES – OTHER JURISDICTIONS**

2
3 **Q. Has Staff received additional information from other state utility regulatory**
4 **agencies?**

5 A. Yes, Staff received responses from the State of Michigan Public Service Commission and
6 the Missouri Public Service Commission.

7
8 **Q. Is the information received from these Commissions pertinent to this inquiry?**

9 A. Yes, the information received from these commissions is consistent with some of the
10 findings in the December 28, 2004 Report. However, neither state provides information
11 related to demand estimation since neither state has electric tariffs that include a
12 residential demand charge.

13
14 **Q. Please summarize the Michigan and Missouri rules related to estimated billing.**

15 A. The Michigan rules allow a utility to estimate the bill of a residential customer every other
16 month, and may allow a utility to estimate the bills more or less often depending upon a
17 finding by the Commission that those procedures assure reasonable billing accuracy.
18 However, estimating procedures employed by a utility and any substantive changes to
19 those procedures must be approved by the Commission. A utility may also estimate bills
20 if extreme weather conditions, work stoppages, or other circumstances beyond the control
21 of the utility prevent an actual meter reading. If the utility is unable to gain access to read
22 a meter, then the utility shall use reasonable alternative measures to obtain an actual
23 reading, including mailing or leaving postage-paid, pre-addressed postcards. If a utility
24 cannot obtain an actual reading, then the utility shall maintain records of the reasons and
25 its efforts to secure an accurate reading.

1 The Missouri rules allow a utility to render a bill based on estimated usage when extreme
2 weather conditions, emergencies, labor agreements, or work stoppages prevent actual
3 meter readings and when a utility is unable to obtain access to the customer's premises. If
4 a utility is unable to obtain an actual meter reading, it shall undertake reasonable
5 alternatives if practicable to obtain a customer reading of the meter, such as mailing or
6 leaving postpaid, preaddressed postcards upon which the customer may note the reading
7 unless the customer requests otherwise. A utility shall not render a bill based on estimated
8 usage for more than three (3) consecutive billing periods. Under no circumstances shall a
9 utility render a bill based on estimated usage unless the estimating procedures employed
10 and any substantive changes to those procedures have been approved by the Commission.
11 A utility shall maintain accurate records of the reasons for the estimate and the effort made
12 to secure an actual reading. Based on discussions with Missouri Staff, utilities generally
13 estimate usage using historical customer specific information (prior month or same month
14 prior year), but may also trend or weather-normalize usage. There are no demand-billed
15 residential customers in Missouri.

16
17 **SECTION SIX: METER READING PRACTICES**
18

19 **Q. Please describe the results of your interview of the meter reader and meter reading**
20 **supervisor responsible for the Avis Read account in Paradise Valley in 1999 and**
21 **2000.**

22 **A.** We interviewed the primary meter reader assigned to read the meter at Avis Read's
23 Paradise Valley premises in 1999 and 2000. The meter reader described the reasons he
24 was unable to access the meter at Avis Read's residence. While Ms. Read had provided
25 APS with a key to her gate, eventually the gate key provided by Avis Read went missing.
26 The meter reader stated that it is APS' policy that meter readers make "reasonable"

1 attempts to gain access to the meter, although "reasonable" practices do not include
2 knocking on the customer's door. The meter reader stated that "no access" practices
3 include leaving a door hanger and coding the meter as locked.

4 The meter reading supervisor was not made aware of the "no access" situation at the Avis
5 Read property until January 2005 when we requested this interview. He did not think that
6 he had ever been to the Avis Read residence, and he did not make contact with Avis Read
7 during the period of 1999-2000 to discuss alternatives to resolve the "no access" problem.

8 Neither the meter reader nor meter reading supervisor could recall whether APS
9 telephoned Avis Read to arrange for the replacement of the missing key or to replace the
10 gate lock with an APS lock. According to notes recorded in CIS, Ms. Read had offered to
11 allow her lock to be replaced with an APS lock.

12 The meter reader indicated that many additional "no access" situations could be remedied
13 if APS installed more of the EZRead 90-degree elbows. These elbows change the angle of
14 the meter and facilitate reading meters. In response to this suggestion, the meter reading
15 supervisor indicated that meter reading shop personnel make site visits to each customer's
16 premises reported by meter readers as locations where "no access" problems could be
17 solved through the installation of an EZRead 90-degree elbow to determine the feasibility
18 of installing these devices.

19
20 **Q. Please describe the work completed to determine if APS meter readers are curbing**
21 **meter reads.**

22 **A.** We interviewed the route coordinators and meter reading supervisor (or head meter
23 reader) at the Flagstaff and Surprise meter reading shops to identify practices in place to
24 detect the curbing of meter reads, evaluate individual meter reader performance, and
25 monitor lock-outs. We also reviewed selected Itron reports provided by APS and did not
26 detect instances of curbing. While APS reviews individual meter reader performance

1 reports for evidence of excessive lock-outs by meter reader, they do not consistently
2 review reports to track lock-outs by meter reading route. Using available DB Microware
3 reports to review lock-outs by route provides management with another valuable tool to
4 monitor trends in lock-outs and reduce the number of "no access" meters. DB Microware
5 is the software used by APS to manage meter reading routes.

6 In addition, we reviewed descriptions of the disciplinary actions taken against meter
7 readers during the period 1994 through 2004. During that time period, there were three
8 instances in which meter readers were terminated for "curbing" meter reads, one in late
9 2004, the other two in 1994 and 1995. Chapter III, Finding 10 of the December 28, 2004
10 Report (pages III-10 to12) provides additional discussion of controls in place related to the
11 "curbing" of meter reads.

12
13 **Q. Do meter readers have access to prior month usage on the Itron hand-held meter**
14 **reading units that could facilitate the curbing of meter reading?**

15 A. In our December 28, 2004 Report, we mention that in areas outside of Metro Phoenix the
16 prior month's meter reading and customer usage are displayed on one of the Itron screens
17 that meter readers can access. Having access to this information provides meter readers
18 with information that could facilitate the curbing of meter reading. We recommended in
19 the December report that this feature be disabled. Recent discussions with Flagstaff meter
20 reading personnel have confirmed that APS has recently issued instructions to disable this
21 feature.

22
23 **Q. Do you have any additional recommendations related to meter reading based on the**
24 **additional work completed?**

25 A. Yes, we have four additional recommendations related to meter reading. First, APS
26 should be required to develop and install performance measures to document the efforts

1 taken by APS to comply with the Commission requirement that "(a)fter the second
2 consecutive month of estimating the customer's bill for reasons other than severe weather,
3 the utility will attempt to secure an accurate reading of the meter. (R14-2-210. A. 3.).
4 Second, APS should specifically include the use of EZ-Read as one of the steps taken to
5 resolve a "no access" situation. Third, APS should utilize available DB Microware reports
6 to review lock-outs by route to monitor trends in lock-outs and to reduce the number of
7 "no access" meters. Fourth, APS should establish an internal process whereby after three
8 consecutive estimates, continued instances of consecutive estimates due to "no access"
9 situations are reported and made visible to increasing levels of APS management.

10
11 **SECTION SEVEN: REVENUE REQUIREMENT IMPACT**

12
13 **Q. What is the revenue requirement impact of the Company's demand estimating**
14 **methodologies?**

15 **A.** During 2002, the Company estimated 25,510 E-32 (general service) customer bills, 4,201
16 EC-1 (residential) customer bills, and 5,589 ECT-1R (residential TOU) customer bills.
17 Using 2002 data for our test period and using information provided by APS that supported
18 the analyses included in David Rumolo's November 23, 2004 testimony, related to the
19 over and under billing of demand using the class average load factors in place during
20 2002, BWG estimates that APS underbilled its E-32 customers by approximately
21 \$245,000, underbilled its EC-1 customers by approximately \$45,000, and underbilled its
22 ECT-1R customers by approximately \$165,000, for a total underbilling of approximately
23 \$455,000. If Staff's recommended estimation methodology had been in use in 2002,
24 revenues would have been \$455,000 higher.

25

1 **Q. Please describe in more detail BWG's calculation of the impact of APS' demand**
2 **estimating methodology on APS' revenues.**

3 **A.** The following table presents the detail supporting BWG's calculation of the impact of
4 APS' demand estimating methodology on test year revenues.

5

Rate Schedule	Customer Class	APS Estimate of Net Under Billing for 12 Months ended August 2004	Number of Estimated Bills – 12 Months ended August 2004	Number of Estimated Bills – Calendar 2002	Dollar Impact – Calendar 2002
EC-1	Residential	\$22,271	2,052	4,201	\$45,539
ECT-1R	Residential TOU	\$143,117	4,797	5,589	\$166,746
E-32	General Service	\$205,283	21,452	25,510	\$244,116
Total		\$370,671	28,302	35,300	\$456,401

6 In August 2002, the Company adjusted the class average load factors to remove the
7 "generosity factor." As a result, BWG's calculation of the net underestimation for 2002
8 prorated the results of the APS analyses using the demand estimating methodology
9 implemented in March 1999 and the methodology implemented in August 2002. The
10 class average load factor used to estimate demand for rate ECT-1R was also adjusted in
11 April 2004 to correct an error in the calculation of the on-peak load factor.

12

13 **SECTION EIGHT: SUMMARY OF STAFF RECOMMENDATIONS**

14

15 **Q. Please summarize all the recommendations related to the Staff inquiry into the usage**
16 **estimation, meter reading, and billing practices of Arizona Public Service Company.**

17 **A.** A complete list of all recommendations related the Staff inquiry into the usage estimation,
18 meter reading, and billing practices of Arizona Public Service Company follows.

19

1 **Monitoring and Compliance with Commission Recommendations**

- 2 • APS should be required to participate in a third party audit by an independent auditor
3 selected by Staff and funded by APS. This audit would be focused on evaluating
4 whether the Company's meter reading, billing, and estimation practices and
5 management processes have been improved. The audit would also evaluate whether
6 the Company has complied with the decision in this matter. The audit would take
7 place within twelve months of a decision in this matter.
- 8 • APS should be required to file an implementation plan with the Commission within
9 sixty days of a decision in this matter that identifies how it will comply with the
10 decision in this matter. This implementation plan should be submitted for
11 Commission approval.
- 12 • APS should be required to commence an internal audit of its compliance with
13 Commission rules and Commission-approved tariffs within three months of the close
14 of this proceeding and complete the audit, with a copy of the audit report to be filed
15 with the Commission, within twelve months of the close of this proceeding. APS
16 completed a "CIS Compliance to ACC Rules and Regulations Audit" in August 2002;
17 however, this audit failed to identify that APS was not estimating usage for residential
18 demand in conformance with the tariff provisions for Rate Schedules EC-1 and ECT-
19 1R.
- 20 • APS should be required to provide documentation that lists the customers who were
21 not issued three or more bills as a result of APS' CIS problems during late 1999 and
22 early 2000. Staff believes that three or more missed bills might indicate a systemic
23 problem that may warrant further investigation. This documentation should also
24 describe all the circumstances surrounding these customers' accounts so that the
25 Commission may evaluate whether they were impacted in a manner similar to Avis
26 Read. For example, this report should indicate whether APS offered customers

1 extended payment terms once the backbill was issued, describe what terms were
2 offered, and discuss whether APS communicated with these customers to make them
3 aware of the billing problems.

4 **Meter Reading**

- 5 • APS should be required to provide evidence to the Commission that new procedures
6 have been put in place to ensure that staffing resources are sufficient to address
7 emergency short-term needs for meter reading shops that are either smaller or remote.
8 A report that describes the new procedures and explains how they reduce the potential
9 for "skipped" meter readings due to staffing resource issues should be provided to the
10 Commission within six months of a decision in this matter.
- 11 • APS should be required to revise the "No Access Meters" report, KM06R20, to
12 provide the following additional features:
- 13 - Report the present number of consecutive months that the meter reading
14 department could not access the meter so that the Administrative Coordinator can
15 track the steps required for each month of access problems and prioritize the APS
16 response.
 - 17 - Report the other instances that the meter reading department was unable to read the
18 meter during the previous twenty-four months to simplify identification of
19 recurring "no access" problems at the same premises.
 - 20 - Prioritize accounts to focus first on demand-billed customers when working the
21 "no access" report. APS should compile and maintain these reports for purposes
22 of the independent audit.
- 23 • APS should be required to develop and install performance measures to document the
24 efforts it has taken to comply with the Commission requirement that "(a)fter the
25 second consecutive month of estimating the customer's bill for reasons other than

- 1 severe weather, the utility will attempt to secure an accurate reading of the meter.
2 (R14-2-210. A. 3.).
- 3 • APS should specifically include the use of EZ-Read as one of the steps taken to
4 resolve a “no access” situation.
 - 5 • APS should utilize available DB Microware reports to review lock-outs by route to
6 monitor trends in lock-outs and reduce the number of “no access” meters.
 - 7 • APS should establish an internal process whereby after three consecutive estimates,
8 continued instances of consecutive estimates due to “no access” situations are reported
9 and made visible to increasing levels of APS management.
 - 10 • APS should enhance its “no access” resolution process to include the sending of
11 certified letters at the time it notifies customers that continued “no access” will result
12 in the possible discontinuance of service.
 - 13 • APS should develop and install a performance measure to monitor the extent to which
14 APS is complying with the Commission requirement to read meters each month (no
15 less than twenty-five days after the last meter read and no more than thirty-five days
16 after the last meter reading). APS should provide to the Commission a description of
17 its performance measure and the results of its analysis within six months of a decision
18 in this matter.
 - 19 • APS should change the options settings in the Itron software in all locations so that the
20 Itron HHC used by meter readers in each of the APS meter read shops no longer
21 includes the last month’s usage and last month’s meter reading. This feature should be
22 disabled throughout APS' service territory within 30 days of a decision in this matter.
 - 23 • APS should provide the Commission with quarterly reports related to the status of the
24 remote meter reading pilot and implementation plans. The reports should provide a
25 description of the meter reading technology being implemented, APS' plan for
26 implementation, the number and type of customers involved in the pilot program, the

1 costs associated with its implementation, and the operational efficiencies associated
2 with its implementation.

- 3 • APS should implement a pilot program to evaluate whether using an auto-dialer to
4 communicate with “no access” account customers prior to the scheduled read date, in
5 addition to the other methods presently used, will facilitate resolution of additional “no
6 access” accounts. The Company should maintain records on the number of instances
7 that the auto-dialer is used to call customers in these circumstances so that one may
8 determine whether use of the auto-dialer improves APS’ access to “no access” meters.
9 The results of the pilot program should be reported to the Commission in quarterly
10 reports.
- 11 • APS should implement a pilot program to evaluate whether scheduling appointments
12 with “no access” account customers results in a reduction of estimated reads due to
13 “no access” problems. The results of the pilot program should be reported to the
14 Commission in quarterly reports.
- 15 • APS should be required to implement a policy to ensure that meter reading supervisors
16 periodically inspect meter locations reported as “no access” to verify that appropriate
17 corrective measures are taken. APS should be required to file a copy of this policy
18 with the Commission within ninety days of a decision in this matter.

19 **Usage Estimation and Billing**

- 20 • APS should be required to change the methodology used to estimate demand from one
21 using class average load factors to one using customer specific historical demand. The
22 use of customer specific demand history results in more accurate demand estimates.
- 23 • APS should perform an analysis to determine whether the inclusion of May as a
24 summer season month for purposes of estimating kWh is appropriate. This analysis
25 should be filed with the Commission within 90 days of the conclusion of this matter.
26 In reviewing the detailed analyses supporting Mr. Rumolo’s November 23, 2004

1 Testimony, we noticed that in the month of May that estimated kWh consumption was
2 generally higher than the actual kWh consumption. May is the first month of the
3 summer season, therefore, CIS estimates consumption billed in May using the summer
4 seasonal average. Due to cycle billing, approximately one-half of consumption billed
5 in May will represent energy used in April. This trend is reversed to some degree in
6 the early winter season months.

- 7 • APS should be required to refund to customers the overbilled demand charges plus
8 interest that occurred during the period starting in September 1998 with the
9 implementation of the new CIS through September 2003 when changes were made to
10 the Company's CIS to correct this problem. There were 9,056 residential customers
11 overbilled based upon inaccurate demand estimation and the overbilling was not
12 subsequently credited to the customer's account during this period. The amount of the
13 overbilling which should be credited to the appropriate residential customers' accounts
14 totals \$171,686. APS is still compiling data for general service customers. APS'
15 calculation of these refunds will be subject to verification as part of the independent
16 audit recommended by Staff.
- 17 • APS should be required to obtain Commission approval of its estimation procedures as
18 a tariff filing.
- 19 • APS' Audit Services Department should include on-going testing of usage estimation,
20 meter reading and billing practices in its annual audit plan. APS should also ensure
21 that it has completely implemented any findings reported in previous audit reports.
22 APS should file the results of its internal audits with the Commission.

23 **Comparative Practices**

- 24 • APS should take steps to obtain actual meter readings at customer premises that have
25 persistent "no access" problems. The Company's established practice does not include

1 scheduling a meter reading at other than normal business hours or making an
2 appointment for a meter reading.

- 3 • APS should continue to participate in benchmarking studies that compare its practices
4 to other utilities in the industry. APS should provide such benchmarking analysis to
5 Staff on a quarterly basis.

6 **Avis Read Complaint**

- 7 • APS should be required to train Billing Services Representatives (BSRs) and others
8 involved in the usage estimation, meter reading and billing process to understand that
9 customers value an accurate bill more than an underestimated bill. APS should also
10 train them to recognize situations in which the underestimation of usage may result in
11 problems for their customers. APS should provide Staff with a description of the
12 changes to its training process within six months of a decision in this matter.
- 13 • APS should be required to provide a clearer notice on a re-billed account. Such notice
14 should clearly state that the new bill replaces the previously issued bill and that the
15 customer should only pay the reissued bill amount. APS should consult with Staff in
16 determining the appropriate language and placement on the bill within 30 days of a
17 decision in this matter. In addition, APS should be required to make the appropriate
18 modifications to its billing system to implement this change within sixty days of a
19 decision in this matter.

20
21 **SECTION NINE: MISCELLANEOUS**

22
23 **Q. Please explain why it is important that APS be required to participate in a third**
24 **party audit by an independent auditor.**

25 **A. We have completed numerous independent audits of utilities for utility regulatory**
26 **commissions. Based on our experience, the benefits of requiring APS to participate in a**

1 third party audit by an independent auditor are two-fold. First, the audit will provide
2 additional incentive to APS to implement the recommendations listed above on a timely
3 basis. Second, the audit will provide the Commission with an independent assessment of
4 and assurance that the actions taken by APS were responsive to the recommendations
5 ordered by the Commission.

6
7 **Q. Please explain why it is important that APS' estimating procedures be dealt with as a**
8 **tariff item.**

9 A. It is important that APS' estimating procedures be dealt with as a tariff item for two
10 reasons. First, providing additional language in the Company's tariff will clearly specify
11 Commission requirements related to the methodology used to render customers' bills.
12 Second, the inclusion of specific tariff language will hold APS to a greater degree of
13 accountability for compliance with the Commission's intentions related to the desired
14 usage estimating procedures.

15
16 **Q. Are you familiar with Resolution G-3372 approved by the California Public Utilities**
17 **Commission (CPUC) on January 13, 2005?**

18 A. Yes. This Resolution, which was approved by the CPUC on January 13, 2005, requires
19 changes to Pacific Gas and Electric Company's (PG&E) tariff. These tariff changes limit
20 a residential customer's exposure to three months for under-billings resulting from a
21 failure to issue a bill or from underestimating consumption. The failure to issue a bill and
22 the issuance of bills based on estimated usage for situations within the control of PG&E
23 are now defined as "billing errors." The Resolution excludes estimated bills resulting
24 from "inaccessible roads, the customer, the customer's agent, other occupant, animal or
25 physical condition of the property preventing access to PG&E's facilities on the

1 customer's premise, other causes within control of the customer, or a natural or man-made
2 disaster such as a fire, earthquake, flood or severe storms."

3 As background, the CPUC received numerous complaints from PG&E customers in 2003
4 and 2004 claiming that PG&E failed to bill them for actual gas or electric use on a regular
5 monthly basis or that PG&E allegedly estimated a customer's bills for several months and
6 later rendered a back bill for undercharges. In 2003, PG&E issued a relatively large
7 number of delayed bills (i.e., bills issued more than sixty (60) days after gas or electric
8 usage occurred) due to problems associated with the implementation of PG&E's new
9 Customer Information System.

10 The CPUC ordered PG&E to file a report explaining the reasons for the large number of
11 delayed and estimated bills over the past five years and a plan for reducing the number of
12 these bills. While the CPUC has not yet ordered a review of PG&E's past billing
13 practices, the CPUC has stated that "if this review is undertaken it may include
14 consideration of whether PG&E should be ordered to make refunds on, or adjustments to,
15 previously rendered bills."

16 In addition, this Resolution requires PG&E to include a message on the estimated bill that
17 identifies the reason for requiring that the bill be estimated.

18
19 **Q. Did you participate in the preparation of the Staff's December 28, 2004 Report.**

20 A. Yes.

21
22 **Q. Are you sponsoring the Staff's December 28, 2004 Report?**

23 A. Yes.

24
25 **Q. Does this conclude your direct testimony?**

26 A. Yes, it does.

EXHIBIT 1

PERRY L. WHEATON, CMC, CPA

Co-Founder and Co-President

BARRINGTON-WELLESLEY GROUP

SUMMARY OF QUALIFICATIONS

Mr. Wheaton, a CMC, has over thirty years of diversified management consulting and auditing experience and has performed financial operations and/or affiliate interest reviews for over twenty-five utilities. He has directed twenty-four management reviews of public utilities for regulatory commissions. A Certified Management Consultant, he has served as chairman of the General Committee of Management Services for the New York State Society of CPAs and as regional vice president and director of the Institute of Management Consultants.

Mr. Wheaton was a senior vice president of the Putnam Financial Services Company where he was responsible for the information systems operations of this major mutual fund investment management company. In his twelve years as an auditor and consultant with an international accounting firm, he had extensive experience in reviewing the financial and systems operations of utilities, financial services companies, energy companies, and manufacturers. Mr. Wheaton has an AB from Hamilton College and an MBA in public accounting from Rutgers University.

Utility Consulting Experience

- Directed the deferred balance account prudence audit of three NJ electric utilities—PSE&G, JCP&L and Atlantic City Electric—for the NJ BPU for the period from August 1, 1999 to July 31, 2003. (2002- 2004)
- Directed a diagnostic management audit of United Illuminating for the Connecticut DPUC. (2003)
- Directed the review of Pacific Gas & Electric's financial condition for the California PUC in the midst of the California energy crisis. The audit addressed holding company, power purchases, and non-regulated subsidiary activities in the California energy markets. (2001)
- Directed a project for Public Service Electric & Gas to prepare its affiliate interests compliance plan which was filed with the New Jersey BPU during the second quarter of 2000. (2000)
- Directed a management audit of the affiliate relations of Southern Connecticut Gas Company for the Connecticut DPUC. A major focus of this audit was to assess questionable activities performed by the utility's non-regulated affiliates. (2000)
- Directed the review of Connecticut Light & Power Company's (CL&P) financial condition for the Connecticut DPUC in the midst of Northeast Utilities' (CL&P's parent) financial crisis, which was precipitated by the Millstone nuclear crisis. Also assisted the DPUC in developing a strategy for dealing with the crisis and to prepare for industry deregulation. (1998)

- Directed the review of the financial impact of the Three Mile Island accident on its owners, Metropolitan Edison and Penelec, for the Pennsylvania PUC. Served as a lead witness before the PUC and a special US congressional committee investigating the accident. (1980)
- Directed a prudence review of the Maine Yankee Atomic Power Company for the Maine PUC. Subsequently reviewed the prudence of the decision to shut down the plant prematurely. (1997)
- Project director for the financial/management audit of Pacific Gas & Electric's \$600 million of expenditures, from 1990 to 1992, for demand-side management for the California Public Utilities Commission (CPUC). (1994)
- Project director for the financial/management audit of Southern California Edison's Research, Demonstration and Development Department's \$300 million of expenditures from 1988 to 1992 for the CPUC. (1993)
- Lead consultant for determining net merger-related savings in the management audit of the merger of SBC and Ameritech for the Illinois Commerce Commission. (2000)
- Reviewed the affiliate relationships of Peoples Natural Gas with its parent, Consolidated Natural Gas, as part of the audit of Peoples for the Pa PUC. (1994)
- Reviewed the affiliate relationships of New Jersey Natural Gas with its parent New Jersey Resources Corporation and its seven affiliated companies as part of the management audit for the New Jersey BRC. (1993)
- Developed a plan to integrate the accounting and financial operations of Northeast Utilities (NU) and Public Service Company of New Hampshire (PSNH). (1991)
- Technical advisor for the review of financial management and involvement of United Illuminating and Northeast Utilities in the Seabrook Nuclear project in the retrospective audit of the project for the Connecticut DPUC. (1987)
- Directed a review of the financial functions of General Public Utilities (GPU) and its five subsidiaries as part of a system-wide "Expenditure Analysis Program." Reviewed cost allocation methods used by GPU to account for transactions among its five subsidiaries. Study resulted in the reorganizing and downsizing of the financial functions and a streamlining of management reports. (1989)
- Co-director of a study mission of utility executives that visited the United Kingdom to assess the privatization and deregulation of the electric utility industry in Great Britain. (1991)

Regulatory Audit Experience

Project Director for the following commission-mandated management reviews:

- United Illuminating – Comprehensive (2002)
- Pacific Gas & Electric - Financial Condition -- California PUC (2001)
- California Electric Utilities - PX Prices -- California PUC (2000)
- Philadelphia Gas Works -- PA PUC (2001)

- Southern Connecticut Gas - Affiliate Relations -- CT DPUC (2000)
- Connecticut Light & Power - Financial Condition -- CT DPUC (1998)
- Maine Yankee Atomic Power -- Maine PUC (1997)
- Northeast Utilities - Nuclear Operations -- CT DPUC (1997)
- Connecticut Light & Power - Diagnostic Audit -- CT DPUC (1996)
- Pacific Gas & Electric - DSM -- California PUC (1994)
- Los Angeles Department of Water and Power -- LA City Council (1994)
- Southern California Edison - RD&D -- California PUC (1993)
- Maryland Natural Gas -- Maryland PSC (1990)
- Consolidated Edison Company -- New York PSC (1988)
- Apollo/Carnegie Gas Companies -- Pennsylvania PUC (1988)
- General Public Utilities -- Pennsylvania PUC (1980)
- Northeast Utilities - Gas Properties -- CT DPUC (1981)
- Central Hudson Gas & Electric -- New York PSC (1980)
- New York State Electric & Gas -- New York PSC (1979)
- Pennsylvania Gas & Water -- Pennsylvania PUC (1978)
- United Illuminating --CT DPUC (1977)
- Salem Nuclear Project -- Public Advocate of New Jersey (1977)
- Nine Mile Two Prospective -- New York PSC (1981)
- Seabrook Phase I -- CT DPUC (1987)
- New York Tel/Construction Program Planning -- New York PSC (1986)

Expert Witness Experience

Mr. Wheaton has appeared as an expert witness with respect to the following audits:

- Southern Connecticut Gas -- CT DPUC (2001)
- Pacific Gas & Electric -- California PUC (2001)
- Maine Yankee Atomic Power - Maine PUC (1997)
- General Public Utilities - PA PUC and US Congressional Subcommittee (1980)
- New York State Electric & Gas - New York PSC (1979)
- United Illuminating - CT DPUC (1977)
- Salem Nuclear Project - NJ BPU and PA PUC (1977)
- Nine Mile Two Prospective - New York PSC (1981)

Work Experience

- Managing Director and Founder, Barrington-Wellesley Group, Inc. (1990 - present)
- Vice President and Board Member, Theodore Barry & Associates. (1976 - 1981, 1985 - 1990)
- Senior Vice President, Putnam Investor Services, Inc. Responsible for information resource management activities. (1982 - 1985)
- Manager, Management Consulting. Coopers & Lybrand. (1964 - 1976)

EXHIBIT 2

Rate Schedule 300 (E-32)
 Scope: 193 Customers

PLW-2

Class Averages				Customer Specific Load Factor				KW History - Previous Month			
KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	No. of Entries	% of Entries	Cumulative	KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	
>100%	0	0.0%	73.3%	0	0.0%	52.0%	>100%	0	0.0%	31.7%	
80 to 100%	455	12.5%	73.3%	12	0.8%	52.0%	80 to 100%	24	0.7%	31.7%	
60 to 80%	601	16.6%	60.7%	14	0.9%	51.2%	60 to 80%	28	0.8%	31.0%	
40 to 60%	696	19.2%	44.2%	57	3.6%	50.3%	40 to 60%	90	2.6%	30.2%	
20 to 40%	523	14.4%	25.0%	193	12.1%	46.8%	20 to 40%	221	6.4%	27.6%	
0 to 20%	383	10.6%	10.8%	555	34.7%	34.7%	0 to 20%	738	21.2%	21.2%	
=0%	246	6.8%		3	0.2%		=0%	1312	37.8%		
0 to -20%	261	7.2%	7.2%	481	30.1%	30.1%	0 to -20%	681	19.6%	19.6%	
-20 to -40%	200	5.5%	12.7%	157	9.8%	39.9%	-20 to -40%	185	5.3%	24.9%	
-40 to -60%	152	4.2%	16.9%	53	3.3%	43.2%	-40 to -60%	71	2.0%	27.0%	
-60 to -80%	44	1.2%	18.1%	21	1.3%	44.5%	-60 to -80%	34	1.0%	28.0%	
-80 to -100%	43	1.2%	19.3%	15	0.9%	45.5%	-80 to -100%	45	1.3%	29.3%	
<-100%	24	0.7%	20.0%	38	2.4%	47.8%	<-100%	44	1.3%	30.5%	
	3628	100.0%		1599	100.0%			3473	100.0%		

KW History - Same Month Prior Year			
KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative
>100%	0	0.0%	41.1%
80 to 100%	25	1.5%	41.1%
60 to 80%	16	1.0%	39.5%
40 to 60%	76	4.7%	38.6%
20 to 40%	152	9.4%	33.8%
0 to 20%	395	24.4%	24.4%
=0%	449	27.8%	
0 to -20%	301	18.6%	18.6%
-20 to -40%	82	5.1%	23.7%
-40 to -60%	46	2.8%	26.5%
-60 to -80%	22	1.4%	27.9%
-80 to -100%	21	1.3%	29.2%
<-100%	31	1.9%	31.1%
	1616	100.0%	

Rate Schedule 160 (EC-1)		Scope: 54 Customers		PLW-2			
Class Averages		Seasonal Class Averages		Customer Specific Load Factor			
KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative
>100%	0	0.0%	64.8%	>100%	0	0.0%	66.2%
80 to 100%	6	0.5%	64.8%	80 to 100%	3	0.2%	66.2%
60 to 80%	52	4.0%	64.4%	60 to 80%	44	3.5%	66.0%
40 to 60%	202	15.6%	60.3%	40 to 60%	173	13.9%	62.4%
20 to 40%	289	22.4%	44.7%	20 to 40%	287	23.0%	48.6%
0 to 20%	288	22.3%	22.3%	0 to 20%	320	25.6%	25.6%
=0%	19	1.5%		=0%	25	2.0%	
0 to -20%	189	14.6%	14.6%	0 to -20%	222	17.8%	17.8%
-20 to -40%	121	9.4%	24.0%	-20 to -40%	108	8.6%	26.4%
-40 to -60%	56	4.3%	28.4%	-40 to -60%	43	3.4%	29.9%
-60 to -80%	21	1.6%	30.0%	-60 to -80%	18	1.4%	31.3%
-80 to -100%	2	0.2%	30.1%	-80 to -100%	5	0.4%	31.7%
<-100%	46	3.6%	33.7%	<-100%	1	0.1%	31.8%
	1291	100.0%			1249	100.0%	
KW History - Previous Month		KW History - Same Month Prior Year		KW History - Same Month Prior Year		KW History - Same Month Prior Year	
KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative
>100%	0	0.0%	46.5%	>100%	0	0.0%	54.3%
80 to 100%	1	0.1%	46.5%	80 to 100%	0	0.0%	54.3%
60 to 80%	8	0.7%	46.4%	60 to 80%	5	0.8%	54.3%
40 to 60%	23	1.9%	45.7%	40 to 60%	25	4.0%	53.5%
20 to 40%	122	10.1%	43.8%	20 to 40%	83	13.3%	49.5%
0 to 20%	408	33.7%	33.7%	0 to 20%	227	36.3%	36.3%
=0%	74	6.1%		=0%	24	3.8%	
0 to -20%	390	32.3%	32.3%	0 to -20%	182	29.1%	29.1%
-20 to -40%	122	10.1%	42.3%	-20 to -40%	52	8.3%	37.4%
-40 to -60%	31	2.6%	44.9%	-40 to -60%	18	2.9%	40.3%
-60 to -80%	12	1.0%	45.9%	-60 to -80%	6	1.0%	41.2%
-80 to -100%	4	0.3%	46.2%	-80 to -100%	0	0.0%	41.2%
<-100%	14	1.2%	47.4%	<-100%	4	0.6%	41.9%
	1209	100.0%			626	100.0%	

Rate Schedule 1800 (ECT-1R)		Class Averages		Seasonal Class Averages		Customer Specific Load Factor		PLW-2
Scope: 140 Customers								
KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	
>100%	0	0.0%	60.7%	>100%	0	0.0%	60.9%	>100%
80 to 100%	12	0.4%	60.7%	80 to 100%	16	0.6%	60.9%	80 to 100%
60 to 80%	96	3.5%	60.3%	60 to 80%	71	2.6%	60.3%	60 to 80%
40 to 60%	390	14.2%	56.8%	40 to 60%	310	11.3%	57.7%	40 to 60%
20 to 40%	614	22.4%	42.5%	20 to 40%	576	21.0%	46.4%	20 to 40%
0 to 20%	552	20.1%	20.1%	0 to 20%	695	25.4%	25.4%	0 to 20%
=0%	35	1.3%		=0%	54	2.0%		=0%
0 to -20%	412	15.0%	15.0%	0 to -20%	545	19.9%	19.9%	0 to -20%
-20 to -40%	348	12.7%	27.7%	-20 to -40%	324	11.8%	31.7%	-20 to -40%
-40 to -60%	182	6.6%	34.4%	-40 to -60%	99	3.6%	35.3%	-40 to -60%
-60 to -80%	62	2.3%	36.6%	-60 to -80%	41	1.5%	36.8%	-60 to -80%
-80 to -100%	29	1.1%	37.7%	-80 to -100%	7	0.3%	37.1%	-80 to -100%
<-100%	9	0.3%	38.0%	<-100%	3	0.1%	37.2%	<-100%
	2741	100.0%			2741	100.0%		
KW History - Previous Month		KW History - Same Month Prior Year		KW History - Same Month Prior Year		KW History - Same Month Prior Year		
KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	KW Diff/ Billed KW, %	No. of Entries	% of Entries	Cumulative	
>100%	0	0.0%	48.3%	>100%	0	0.0%	51.0%	>100%
80 to 100%	4	0.2%	48.3%	80 to 100%	2	0.2%	51.0%	80 to 100%
60 to 80%	32	1.2%	48.1%	60 to 80%	21	1.6%	50.9%	60 to 80%
40 to 60%	95	3.6%	46.9%	40 to 60%	52	4.1%	49.2%	40 to 60%
20 to 40%	357	13.6%	43.3%	20 to 40%	176	13.7%	45.2%	20 to 40%
0 to 20%	781	29.7%	29.7%	0 to 20%	403	31.4%	31.4%	0 to 20%
=0%	97	3.7%		=0%	44	3.4%		=0%
0 to -20%	753	28.7%	28.7%	0 to -20%	357	27.8%	27.8%	0 to -20%
-20 to -40%	276	10.5%	39.2%	-20 to -40%	137	10.7%	38.5%	-20 to -40%
-40 to -60%	106	4.0%	43.2%	-40 to -60%	53	4.1%	42.7%	-40 to -60%
-60 to -80%	48	1.8%	45.0%	-60 to -80%	19	1.5%	44.1%	-60 to -80%
-80 to -100%	39	1.5%	46.5%	-80 to -100%	7	0.5%	44.7%	-80 to -100%
<-100%	40	1.5%	48.0%	<-100%	11	0.9%	45.6%	<-100%
	2628	100.0%			1282	100.0%		

PLW-2

Rate Schedule 1800 (ECT-1R)
Scope: 140 Customers

Class Averages		Seasonal Class Averages		Customer Specific Load Factor			
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.6%	>32	0	0.0%	60.7%
16 - 32	2	0.1%	60.6%	16 - 32	3	0.1%	60.7%
8 - 16	17	0.6%	60.5%	8 - 16	13	0.5%	60.6%
4 - 8	172	6.3%	59.9%	4 - 8	152	5.5%	60.1%
2 - 4	556	20.2%	53.6%	2 - 4	499	18.2%	54.6%
0 - 2	917	33.4%	33.4%	0 - 2	1001	36.4%	36.4%
=0	36	1.3%		=0	54	2.0%	
0 to -2	512	18.6%	18.6%	0 to -2	678	24.7%	24.7%
-2 to -4	305	11.1%	29.7%	-2 to -4	221	8.0%	32.7%
-4 to -8	174	6.3%	36.1%	-4 to -8	95	3.5%	36.2%
-8 to -16	52	1.9%	38.0%	-8 to -16	30	1.1%	37.3%
-16 to -32	5	0.2%	38.2%	-16 to -32	1	0.0%	37.3%
<-32	0	0.0%	38.2%	<-32	0	0.0%	37.3%
	2747	100.0%			2747	100.0%	
KW History - Previous Month							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	48.2%	>32	0	0.0%	51.0%
16 - 32	2	0.1%	48.2%	16 - 32	0	0.0%	51.0%
8 - 16	10	0.4%	48.2%	8 - 16	6	0.5%	51.0%
4 - 8	104	4.0%	47.8%	4 - 8	46	3.6%	50.5%
2 - 4	258	9.8%	43.8%	2 - 4	152	11.9%	47.0%
0 - 2	895	34.0%	34.0%	0 - 2	450	35.1%	35.1%
=0	100	3.8%		=0	44	3.4%	
0 to -2	944	35.9%	35.9%	0 to -2	457	35.6%	35.6%
-2 to -4	236	9.0%	44.8%	-2 to -4	94	7.3%	43.0%
-4 to -8	68	2.6%	47.4%	-4 to -8	28	2.2%	45.2%
-8 to -16	13	0.5%	47.9%	-8 to -16	4	0.3%	45.5%
-16 to -32	1	0.0%	48.0%	-16 to -32	1	0.1%	45.6%
<-32	0	0.0%	48.0%	<-32	0	0.0%	45.6%
	2631	100.0%			1282	100.0%	
KW History - Same Month Prior Year							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	48.2%	>32	0	0.0%	51.0%
16 - 32	2	0.1%	48.2%	16 - 32	0	0.0%	51.0%
8 - 16	10	0.4%	48.2%	8 - 16	6	0.5%	51.0%
4 - 8	104	4.0%	47.8%	4 - 8	46	3.6%	50.5%
2 - 4	258	9.8%	43.8%	2 - 4	152	11.9%	47.0%
0 - 2	895	34.0%	34.0%	0 - 2	450	35.1%	35.1%
=0	100	3.8%		=0	44	3.4%	
0 to -2	944	35.9%	35.9%	0 to -2	457	35.6%	35.6%
-2 to -4	236	9.0%	44.8%	-2 to -4	94	7.3%	43.0%
-4 to -8	68	2.6%	47.4%	-4 to -8	28	2.2%	45.2%
-8 to -16	13	0.5%	47.9%	-8 to -16	4	0.3%	45.5%
-16 to -32	1	0.0%	48.0%	-16 to -32	1	0.1%	45.6%
<-32	0	0.0%	48.0%	<-32	0	0.0%	45.6%
	2631	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	1	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	1	0.1%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	34	2.7%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	489	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%	37.3%	<-32	0	0.0%	51.7%
	2747	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	3	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	13	0.5%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	152	5.5%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	499	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%	37.3%	<-32	0	0.0%	51.7%
	2747	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	3	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	13	0.5%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	152	5.5%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	499	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%	37.3%	<-32	0	0.0%	51.7%
	2747	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	3	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	13	0.5%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	152	5.5%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	499	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%	37.3%	<-32	0	0.0%	51.7%
	2747	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	3	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	13	0.5%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	152	5.5%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	499	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%	37.3%	<-32	0	0.0%	51.7%
	2747	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	3	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	13	0.5%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	152	5.5%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	499	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%	37.3%	<-32	0	0.0%	51.7%
	2747	100.0%			1282	100.0%	
Customer Specific Load Factor							
KW Diff	No. of Entries	% of Entries	Cumulative	KW Diff	No. of Entries	% of Entries	Cumulative
>32	0	0.0%	60.7%	>32	0	0.0%	48.3%
16 - 32	3	0.1%	60.7%	16 - 32	1	0.1%	48.3%
8 - 16	13	0.5%	60.6%	8 - 16	1	0.1%	48.2%
4 - 8	152	5.5%	60.1%	4 - 8	34	2.7%	48.1%
2 - 4	499	18.2%	54.6%	2 - 4	128	10.0%	45.5%
0 - 2	1001	36.4%	36.4%	0 - 2	455	35.5%	35.5%
=0	54	2.0%		=0	0	0.0%	
0 to -2	678	24.7%	24.7%	0 to -2	455	35.5%	35.5%
-2 to -4	221	8.0%	32.7%	-2 to -4	143	11.2%	46.6%
-4 to -8	95	3.5%	36.2%	-4 to -8	59	4.6%	51.2%
-8 to -16	30	1.1%	37.3%	-8 to -16	5	0.4%	51.6%
-16 to -32	1	0.0%	37.3%	-16 to -32	1	0.1%	51.7%
<-32	0	0.0%					

JEANSON

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MARC SPITZER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

AVIS READ; individually, and on Behalf of All)
Others Similarly Situated,)
Complainants,)
v.)
ARIZONA PUBLIC SERVICE COMPANY,)
Respondent.)
_____)

DOCKET NO. E-01345A-04-0657

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
A DECLARATORY ORDER REGARDING BILL)
ESTIMATION PROCEDURES)
_____)

DOCKET NO. E-01345A-03-0775

DIRECT

TESTIMONY

OF

JOEL F. JEANSON

PRINCIPAL

BARRINGTON-WELLESLEY GROUP, INC.

JANUARY 24, 2005

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INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Joel F. Jeanson. I am a principal with the Barrington-Wellesley Group, Inc. BWG is a general management consulting firm which performs a significant portion of its work in the electricity, gas, and telephone industries. My business address is 2137 South Clubhouse Drive, New Berlin, Wisconsin 53151.

Q. Please describe your educational background and professional experience.

A. I have over twenty-five years of experience in utility finance and accounting, financial and operational auditing, internal control review and assessment, corporate performance, capital and O&M budgeting and management reporting. This experience includes auditing customer billing processes, including the impact of estimated meter readings, reviewing and recalculating customers' bills, revenue forecasting, revenue accounting, and reviewing bill estimating algorithms.

I am a member of the American Institute of CPAs, the Wisconsin Institute of CPAs, and the Institute of Management Accountants. I am a past president of the Indianapolis Chapter of the Institute of Internal Auditors. During my business career, I have directed the accounting, budgeting, corporate performance and auditing departments at a major investor owned LDC headquartered in Indiana. I began my professional career with Arthur Andersen & Co.

I received a Bachelor of Science degree in Accounting, with distinction, from Indiana University and have continued my studies with course work at the Indiana University Graduate School of Business. I am also a graduate of the Wabash Executive Program.

My complete resume is included as Schedule JFJ-1.

1 **Q. Did you participate in the preparation of the December 28, 2004 Staff Report?**

2 A. Yes.

3

4 **Q. Are you sponsoring the December 28, 2004 Staff Report?**

5 A. Yes, I am.

6

7 **Q. Does this conclude your direct testimony?**

8 A. Yes, it does.

9

EXHIBIT 1

JOEL F. JEANSON, CPA

Principal

BARRINGTON-WELLESLEY GROUP

Summary of Qualifications

Mr. Jeanson, CPA, has extensive experience in utility finance and accounting, financial and operational auditing, internal control review and assessment, corporate performance, capital and O&M budgeting and management reporting. This experience includes auditing customer billing processes, including the impact of estimated meter readings, reviewing and recalculating customers' bills, revenue forecasting, revenue accounting, and reviewing bill estimating algorithms.

Mr. Jeanson is a member of the American Institute of CPAs, the Indiana CPA Society, and the Institute of Management Accountants and is a past president of the Indianapolis Chapter of the Institute of Internal Auditors. During his business career, Mr. Jeanson has directed the accounting, budgeting, corporate performance and auditing departments at a major investor owned LDC headquartered in Indiana. He began his career with a Big Five public accounting firm.

Mr. Jeanson received a Bachelor of Science degree in Accounting, with distinction, from Indiana University. He has continued his studies with course work at the Indiana University Graduate School of Business and is also a graduate of the Wabash Executive Program.

Auditing and Consulting Experience

- Lead consultant for the analysis of variances by FERC account for the four utility operating company subsidiaries of a major Midwestern utility holding company in connection with the Companies' applications for authority to increase utility rates. Variances are attributable to operating efficiencies and other synergies from a recent merger, changes in allocation methodologies, and accounting inconsistencies. (2004)
- Lead consultant for the review of budgeting and accounting issues associated with the focused management audit of Kentucky Utility's and Louisville Gas & Electric's earnings sharing mechanism for the Kentucky Public Service Commission. (2003)
- Lead Consultant for the program evaluation of SBX1 5 energy efficiency and low-income assistance funds performed for the CPUC. Reviewed and tested SDG&E and Southern California Gas' program costs, administration and compliance with CPUC and Legislative requirements. (2003)
- Lead Consultant for the review of financial, human resources, information technology, and customer service functions in connection with the comprehensive management study of a large municipal water and wastewater utility (2003)
- Lead Consultant for the audit of Atlantic City Electric's (ACE) restructuring-related Deferred Balances performed for New Jersey Board of Public Utilities (NJ BPU). Developed the regulatory framework for the audit and assessed ACE's compliance with NJ BPU Orders and guidelines. (2002)

- Lead Consultant for BWG's audit of the Los Angeles Department of Water & Power (LADWP) performed for the City of Los Angeles. Assessed LADWP's financial management and control environment and assisted with the review of workforce planning policies and procedures. (2002)

Utility Industry Experience

- Directed the accounting department with responsibility for financial (SEC, GAAP and regulatory) and management reporting, budgeting, financial controls, and financial information systems.
- Directed the corporate business planning and budgeting process. Integrated the strategic and operational planning processes so that departmental plans, capital and O&M budgets and performance measures would be focused on both continuous improvement and the accomplishment of corporate objectives – which included both financial and non-financial measures.
- Directed the capital budgeting process, including the capital variance reporting process.
- Developed responsibility reporting process, budgets (capital and O&M), and management reports for Vectren Corporation for first year post-merger that reflected merger-related costs and savings.
- Financial lead in Vectren merger integration efforts for the various financial areas, including identification of staffing levels and cost savings opportunities and making recommendations to provide structure and direction for the company's financial organization.
- Project director for activity-based management initiative focused on internal products and services. ABM used to assess performance against other service providers, measure performance, and improve decision-making.
- Updated and enhanced monthly financial report used to review actual and projected operating results, and set direction as to action required to meet corporate financial objectives.
- Directed team that established capital expenditure guidelines, policies and procedures for new business capital investments. Introduced discounted cash flow modeling to decision-making process.
- Developed quarterly performance measurement reports that included non-financial as well as financial measures that tracked performance over time and across operating regions as well as against external benchmarks.
- Led customer service business process improvement initiative that assessed performance and made recommendations for improvement of all customer service processes including the customer billing process, leading to improved customer service and reduced costs. Facilitated the development of customer service standards.
- Key member of team that completed a study to identify the services, and levels of service, that customers are willing to pay for. This study resulted in significant changes in how the company delivered services to its customers.

- Directed the service technician performance management pilot project to evaluate customer satisfaction and identify cost savings opportunities. This pilot project ultimately led to establishing processes to evaluating operating performance and quality for the entire bargaining unit workforce.
- Directed the internal audit department which included responsibility for testing the accuracy of customer billing as well as operational reviews of field meter reading processes.

Work Experience

- Principal, Barrington-Wellesley Group (2001 - present)
- Director of Accounting, Budgeting and Management Reporting, Vectren (1996 - 2001)
- Director of Corporate Performance, Indiana Gas (1992 - 1996)
- Financial Director of Marketing and Operations, Indiana Gas (1989 - 1992)
- Director of Internal Audit. (1983 - 1989)
- Senior Auditor, Arthur Andersen (1979 - 1983)

STEINGASS

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MARC SPITZER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

AVIS READ; individually, and on Behalf of All)
Others Similarly Situated,)
Complainants,)
v.)
ARIZONA PUBLIC SERVICE COMPANY,)
Respondent.)
_____)

DOCKET NO. E-01345A-04-0657

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
A DECLARATORY ORDER REGARDING BILL)
ESTIMATION PROCEDURES)
_____)

DOCKET NO. E-01345A-03-0775

DIRECT
TESTIMONY
OF
JOYCE I. STEINGASS
SENIOR ASSOCIATE
BARRINGTON-WELLESLEY GROUP, INC.

JANUARY 24, 2005

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Q. Please state your name, occupation, and business address.

A. My name is Joyce I. Steingass. I am a Senior Associate with the Barrington-Wellesley Group, Inc. BWG is a general management consulting firm which performs a significant portion of its work in the electricity, gas, and telephone industries. My business address is 975 Hutchinson Road, Walnut Creek, California 94598.

Q. Please describe your educational background and professional experience.

A. I have more than twenty years of utility consulting and industry experience. I am a licensed mechanical engineer, and have experience consulting with large investor-owned gas and electric utilities in California, New York, Washington D.C., Illinois and South Carolina. I am an accomplished project manager and quality improvement specialist, and have demonstrated effectiveness at organizing and managing projects and conducting operational, financial, and management reviews in the areas of regulatory compliance, business ethics, customer services, and gas and electric utility operations.

Prior to entering consulting in 1999, I was employed by Pacific Gas & Electric (PG&E) for seventeen years including two years as director of distribution quality assurance and four years as director of operational compliance. I have a B.S. in mechanical engineering from the University of California, Berkeley and have taken graduate courses in business administration at Golden Gate University.

My complete resume is included as Schedule JIS-1.

Q. Did you participate in the preparation of the December 28, 2004 Staff Report?

A. Yes.

Q. Are you sponsoring the December 28, 2004 Staff Report?

1 A. Yes, I am.

2

3 **Q. Does this conclude your direct testimony?**

4 A. Yes, it does.

5

EXHIBIT 1

JOYCE I. STEINGASS, P.E.

Senior Associate

BARRINGTON-WELLESLEY GROUP

Summary of Qualifications

Mrs. Steingass has more than twenty years of utility consulting and industry experience. A licensed mechanical engineer, she has experience consulting with large investor-owned gas and electric utilities in California, New York, Washington D.C., Illinois and South Carolina. An accomplished project manager and quality improvement specialist, she has demonstrated her effectiveness at organizing and managing projects and conducting operational, financial, and management reviews in the areas of regulatory compliance, business ethics, customer services, and gas and electric utility operations.

Prior to entering consulting in 1999, she was employed by Pacific Gas & Electric (PG&E) for seventeen years including two years as director of distribution quality assurance and four years as director of operational compliance. Mrs. Steingass has a B.S. in mechanical engineering from the University of California, Berkeley and has taken graduate courses in business administration at Golden Gate University.

Representative Utility Consulting Engagements

Regulatory Compliance Auditing - Utility Customer Service, Meter Reading or Billing

- As Director of Operational Compliance at PG&E, performed management assessments and conducted operational compliance reviews for the Customer Energy Services Business Unit. Raised awareness and initiated action to strengthen the company's commitment to full compliance with laws, regulatory requirements, and utility standards. Selected and trained a diverse team of specialists to evaluate distribution unit operations. Mobilized teams to evaluate business concerns in the areas of customer service and marketing, gas and electric operations, and tariff rates and rules on short notice. Identified over \$16 million in savings, avoided costs, or errors. (1994-1997)
- Supervised a short lead-time project to investigate tariff compliance regarding customer meter reading and billing procedures that were used to estimate final bills when accounts were opened and closed in eighteen customer service headquarters throughout the service territory. Communicated recommendations for process improvements and supported process improvement teams with quality control practices. (1995)
- Investigated tariff compliance on the subject of assigning utility rate schedules to customer accounts. (1997)
- Assisted corporate project teams to review and evaluate revenue cycle processes such as measurement, billings, and collections during an extensive process redesign effort, to incorporate stronger checks and balances into new processes. (1996)
- Acted as a project steering committee member to evaluate the introduction of a late payment fee, including risk assessment and developing new processes. (1997)

- Performed assessment of processes for setting up new customer billing accounts and recording new facilities on operating; evaluated processes for calculating franchise fee payments prior to litigation brought by some California cities or counties regarding accurate franchise fees. (1992 and 1994)
- As an independent consultant to PG&E, summarized the history of PG&E's experience with the franchise fee payment process in advance of litigation brought by two California counties. (1999)

Consulting - Utility Management, Operations, or Regulatory Compliance

- Supported an electric utility client undergoing an extensive regulatory commission investigation after a significant operating incident. Services included ensuring accurate and timely response to data requests provided to the commission, technical analysis of information submitted, preparing client personnel in advance of interviews, and developing strategies for and responding to the final report. (2000)
- Redesigned the regulatory compliance process for an electric utility's distribution system. Responsibilities included application design using SAP's enterprise resource planning system. Evaluated processes, controls, and performance monitoring to ensure regulatory compliance and to coordinate compliance controls with the enterprise resource management system. (2000)
- For a southern public utility commission, monitored the implementation of recommendations of a focused regulatory commission safety and management audit of a local gas distribution company's design, construction, operations, and maintenance practices. Provided advice and recommendations based on industry best practices, reviewed proposed process changes, and tracked progress compared to the original audit findings. (2000)
- Designed and implemented an operations compliance program for a Midwestern energy delivery unit. Focused on strengthening compliance with regulatory requirements affecting maintenance and operations. Conducted initial focused compliance audits to indoctrinate the client with the new processes. (2001)
- Served as lead consultant for an audit of Duke Power Company's power restoration and maintenance procedures on behalf of the South Carolina Public Service Commission. The audit included an exhaustive review of the company's preventive maintenance programs, including analysis of the impact of personnel cutbacks in contributing to extended outages, as well as any adverse affects stemming from the company's pole and cable replacement program and tree trimming activities. (2003)

Quality Improvement and Quality Assurance

- Directed the development of the Standards Task Force to develop or revise PG&E customer energy services policies and standards. Provided leadership and guidance to the steering committee involved in making enterprise-wide changes to standard operating procedures, ensuring consistency and adequate controls. (1997)

- As PG&E's Director of Quality Assurance, established and directed electric distribution system audits. Also evaluated design, construction, maintenance, and inspection methods and procedures for compliance with company and California Public Utility Commission (CPUC) Code standards. (1997-1998)

Other Representative Experience - Benchmarking and Industry Restructuring

- Provided research and comparisons of industry restructuring from other states for a client undergoing market re-structuring (2004)
- Working group member for developing data accuracy and metering monitoring methods for California utilities and evaluated proposed regulations (1996-1999).
- Developed benchmarking survey instrument for Navigant Consulting, Inc.'s International Distribution Enterprise Consortium to benchmark gas and electric companies in financial management, system reliability, customer service, activity-based costs, and workforce practices. (1999)
- Performed distribution reliability benchmarking of investor-owned electric utilities, such as System Average Interruption Frequency Indices (SAIFI), System Average Interruption Duration Indices (SAIDI), and Customer Average Interruption Duration Indices (CAIDI) for twenty-five major electric utilities. (2001)

Work Experience

Barrington-Wellesley Group, Inc. Senior Associate (2003-present)

Navigant Consulting, Inc. Senior Engagement Manager (1999-2002)

Independent consultant (1998-1999)

Pacific Gas and Electric Company (1981 - 1998)

1997-1998	Director, Distribution Quality Assurance
1993-1997	Director, Operational Compliance.
1992-1993	Senior Operations Analyst
1988-1991	Pipeline Replacement Superintendent
1986-1988	Senior Distribution Engineer
1985-1986	Distribution Engineer
1981-1985	Engineer, Nuclear Quality Assurance

Licenses and Professional Affiliations

Professional Engineer, Mechanical Engineering, State of California M25178

American Society for Quality

