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BEFORE THE ARIZONA CORPORATION COMMISSION

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AZ CORP COMMISSION  
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COMMISSIONERS  
KRISTIN K. MAYES  
GARY PIERCE  
PAUL NEWMAN  
SANDRA D. KENNEDY  
BOB STUMP

IN THE MATTER OF THE APPLICATION OF  
SULPHUR SPRINGS VALLEY ELECTRIC  
COOPERATIVE, INC. FOR A HEARING TO  
DETERMINE THE FAIR VALUE OF ITS  
PROPERTY FOR RATEMAKING PURPOSES,  
TO FIX A JUST AND REASONABLE  
RETURN THEREON, TO APPROVE RATES  
DESIGNED TO DEVELOP SUCH RETURN  
AND FOR RELATED APPROVALS.

DOCKET NO. E-01575A-08-0328

**STAFF'S NOTICE OF FILING  
RATE DESIGN AND COST OF SERVICE  
DIRECT TESTIMONY**

Staff of the Arizona Corporation Commission ("Staff") hereby files the Rate Design and Cost of Service Direct Testimony of Staff Witnesses Prem Bahl and William Musgrove in the above-referenced matter.

RESPECTFULLY SUBMITTED this 17<sup>th</sup> day of February, 2009.

Wesley C. Van Cleve, Attorney  
Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007  
(602) 542-3402

Original and thirteen (13) copies  
of the foregoing were filed this  
17<sup>th</sup> day of February, 2009 with:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Arizona Corporation Commission

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1 Copies of the foregoing mailed this  
17<sup>th</sup> day of February, 2009 to:

2  
3 Bradley S. Carroll  
3 SNELL & WILMER, L.L.P.  
4 One Arizona Center  
4 400 East Van Buren  
5 Phoenix, Arizona 85004-2202

6  
7 Roseann Osorio

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9  
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**DIRECT**

**TESTIMONY**

**OF**

**WILLIAM MUSGROVE**

**PREM K. BAHL**

**DOCKET NO. E-01575A-08-0328**

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**FEBRUARY 17, 2009**

**BEFORE THE ARIZONA CORPORATION COMMISSION**

KRISTIN K. MAYES  
Chairman  
GARY PIERCE  
Commissioner  
PAUL NEWMAN  
Commissioner  
SANDRA D. KENNEDY  
Commissioner  
BOB STUMP  
Commissioner

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RELATED APPROVALS )  
\_\_\_\_\_ )

DIRECT  
TESTIMONY  
OF  
WILLIAM MUSGROVE  
ON BEHALF OF STAFF  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

FEBRUARY 17, 2009

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**EXECUTIVE SUMMARY**  
**SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE, INC.**  
**DOCKET NO. E-01575A-08-0328**

Staff's testimony addresses Revenue Allocation and Rate Design, Tariff Changes, Service-Related Charges, Unbundled Tariffs and the need for a bill estimation tariff for Sulphur Springs Valley Electric Cooperative's ("SSVEC", "Sulphur Springs" or "Cooperative"). Staff's recommendations are summarized below:

1. Revenue Allocation and Rate Design

Staff concludes and recommends that Sulphur Springs should be granted a revenue increase in the amount of \$16,532,128 or 21.28 percent over present revenues in the amount of \$77,699,100. Excluding other revenues, SSVEC originally requested an increase in the amount of \$9,976,818 (increase of 11.31 percent), and were granted an increase in the amount of \$6,008,830 for an increase of 6.81 percent as shown in WHM-1 at the bottom of page 4. A rate class summary of these data is depicted on page 6 of Staff's testimony.

2. Tariff Changes

The tariff changes proposed by Sulphur Springs are generally acceptable to Staff. For example Staff supports the elimination of the existing Residential declining block rate. Another change viewed by Staff as being an improvement is the proposed Wholesale Power Cost Adjustment schedule. It has been centralized rather than printing its terms and conditions on each tariff schedule. Changes of this nature improve the readability of individual tariff sheets and allow for more efficient tariff maintenance. Sulphur Springs also proposes increasing the number of on-peak time-of-use hours to include Sundays. This change would create on-peak billing periods each day of the week, Monday through Sunday, and each week of the year. Staff initiated a request for data that supports such a change. Although SSVEC's response was fortified with empirical data indicating that coincident peaks may occur on any day of the week, Staff recommends retaining the existing time-of-use time periods.

3. Service Charge Fees

Staff recommends increasing service fee revenues \$344,965.

4. Unbundled Tariffs

Sulphur Springs' unbundled rates are adequate because at this time they are not providing unbundled service to any customers. However if SSVEC were required to provide service under an open access arrangement, it would be necessary to provide more discrete information in their rate schedules.

5. Bill Estimation Tariff

Within thirty days of a decision in this matter, Staff recommends that Sulphur Springs be required to submit, through Docket Control for Commission approval, a separate tariff describing its bill estimation methodology.

1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is William Musgrove. My business address is 1200 West Washington Street,  
4 Phoenix, Arizona 85007.

5  
6 **Q. What is the nature of your work relationship with the Arizona Corporation  
7 Commission?**

8 A. I am an Independent Contractor providing utilities consulting services to the Arizona  
9 Corporation Commission ("Commission") Utilities Division Staff ("Staff").

10

11 **Q. Please state your educational background and business experience.**

12 A. I received a Master of Business Administration Degree with a tested concentration in  
13 Finance and an elected concentration in Economics from Loyola College located in  
14 Baltimore, Maryland. I also received a Bachelor of Science Degree with a concentration  
15 in Business Administration from Johns Hopkins University located in Baltimore,  
16 Maryland, and later augmented the Undergraduate Degree with college-level mathematics  
17 credits that were also received from Johns Hopkins University. I am a tested Certified  
18 Energy Manager as certified by the Association of Energy Engineers. My business  
19 experiences entail 40-plus years in various positions with the Baltimore Gas and Electric  
20 Company ("BGE"). The positions relevant to the testimony I am sponsoring in this  
21 Proceeding involve more than 10 years experience in the Economic Research Department  
22 at BGE. During that period, I became fully proficient in understanding gas and electric  
23 utility financial records and the rate making process. I am thoroughly familiar with all  
24 phases and components of gas or electric rate cases, including rate design and Cost of  
25 Service protocols.

1 **Q. Have you previously testified before any regulatory commission?**

2 A. Yes. I appeared before the Arizona Corporation Commission (“ACC”) in 2005, during a  
3 Southwest Gas Corporation rate proceeding (Docket No. G-01551A-04-0876), and in  
4 2008, during a Graham County Electric Cooperative rate proceeding (Docket No. E-  
5 01749A-07-0236). I have also appeared before the ACC during several tariff-related  
6 proceedings.

7  
8 **Q. What is the scope of your testimony in this case?**

9 A. My testimony will present Staff’s position and recommendations regarding Sulphur  
10 Springs Valley Electric Cooperative’s (“SSVEC”, “Sulphur Springs” or “Cooperative”) application for a general rate increase. Staff’s testimony specifically addresses the topics  
11 of revenue allocation and rate design, proposed tariff changes, service-related charges,  
12 unbundled tariffs and a miscellaneous tariff matter regarding bill estimation procedures. Staff witnesses Crystal Brown, Julie McNeely-Kirwan, Steve Irvine and Prem Bahl have  
13 also provided testimonies regarding other aspects of Sulphur Springs’ rate application.  
14  
15  
16

17 **REVENUE ALLOCATION AND RATE DESIGN**

18 **Q. Please describe Staff’s revenue allocations.**

19 A. Sulphur Springs’ revised cost of service study illustrates that, to varying degrees, the  
20 Residential, General Service, and Lighting rate classes are barely paying or are paying less  
21 than their cost of service. Overall system return is reported to be approximately 4.57  
22 percent. After incorporating Staff’s adjustments, Residential, General Service, and  
23 Lighting rates of return improved slightly, but General Service Time-of-Use (“TOU”) and  
24 Lighting continue to carry negative rates of return of 1.71 percent and approximately 6.33  
25 percent, respectively. After applying Staff’s recommended annual operating revenue in the  
26 amount of \$100,097,882, Lighting rate of return is still negative at approximately 4.6

1 percent. Later in its testimony, Staff discusses its rate design recommendations regarding  
2 individual rate classes. After incorporating Staff's adjustments, overall system rate of  
3 return increased to approximately 6.54 percent. As derived and summarized in Schedule  
4 WHM-1, Staff is recommending increasing the non-Time-of-Use Residential class'  
5 monthly customer charge and energy rates by 10 percent and approximately 20 percent,  
6 respectively. Staff is recommending that the non-TOU General Service classes' monthly  
7 customer charges increase 17.39 percent and 16.09 percent for the non-demand and  
8 demand customers, respectively; and, respective energy revenues increase approximately  
9 30 percent and 29 percent.

10  
11 There are five Irrigation rate schedules with varying rate structures to accommodate nearly  
12 customized usage requirements: (1) Seasonal, (2) Load Factor, (3) Daily, (4) Weekly and  
13 (5) Daily/Large. Existing monthly customer charges for the five rate classes have been  
14 left unchanged by Sulphur Springs. Staff believes that existing monthly customer charges,  
15 which are fixed in the \$25-\$30 range, are appropriate for Irrigation customers, and  
16 recommends keeping them at current levels. It should be noted that proposed rates and  
17 resultant revenues are derived in WHM-1 whereas Schedule WHM-2 summarizes existing  
18 and proposed customer charges, energy rates (kWh) and demand (kW) rates that were  
19 developed in WHM-1. As indicated in WHM-1, Staff's recommended rates are designed  
20 to increase revenues for the irrigation classes as follows: (1) 20.41 percent, (2) 28.61  
21 percent, (3) 17.20 percent, (4) 19.79 percent and (5) 21.78 percent.

22  
23 There are approximately 343 non-TOU large user (demands equal to or greater than 50  
24 KVA) commercial/industrial customers. Rate schedule "Large Power" serves the  
25 overwhelming majority (nearly 95 percent) of these customers, with the remaining 19  
26 customers being served under SSVEC's "Seasonal" and "Industrial" large power

1 schedules. The monthly customer charge for the Large Power rate payers is recommended  
2 by Staff to increase approximately 5.4 percent (WHM-2), and as indicated in WHM-1,  
3 Staff's recommended rates are designed to increase revenues by 18.66 percent. The  
4 monthly customer charge for the Large Power Seasonal rate payers is recommended by  
5 Staff to increase 12.50 percent and as indicated in WHM-1, Staff's recommended rates are  
6 designed to increase revenues by 21.21 percent. The monthly customer charge for the  
7 Large Power Industrial rate payers is recommended by Staff to increase 3.8 percent  
8 (WHM-2), and as indicated in WHM-1, Staff's recommended rates are designed to  
9 increase revenues by 21.60 percent.

10  
11 Sulphur Springs has two Large Power Contract customers identified as Contract 1 and  
12 Contract 2. Contract 1 contains TOU rates which will be discussed in more detail in  
13 Staff's discussion of rate design. Existing monthly customer charges for both contract  
14 customers have been left unchanged by Sulphur Springs. Staff believes that the existing  
15 monthly customer charges are appropriate because each contract has been reviewed and  
16 accepted by the Commission as is required for large power contracts of this nature under  
17 its jurisdiction. Staff recommends 22.12 percent and 18.90 percent revenue increases for  
18 large power contract customer Nos. 1 and 2, respectively. The derivation of these  
19 increases is shown in WHM-1.

20  
21 The monthly customer charge for the Recreation Vehicle ("RV") Parks is recommended  
22 by Staff to increase 3.7 percent, and as indicated in WHM-1, Staff's recommended rates  
23 are designed to increase revenues by 23.41 percent. It should be noted that RV rates  
24 proposed by Staff in the amounts of \$43.55 (Customer Charge), \$6.70 per kW (Demand)  
25 and \$0.0766 per kWh (Energy) are not billed directly to the individual RV occupants.  
26 Rather, these rates are billed directly to the operators of the twelve RV parks.

1           Regarding the Street and Security Lighting rate classes (“Lighting classes”), SSVEC’s  
2           revised cost of service study illustrates that the Lighting classes are currently providing a  
3           combined negative return of approximately 6.84 percent. Incorporating Staff’s  
4           adjustments slightly improves the Lighting classes’ rates of return to a combined negative  
5           return of approximately 6.33 percent. Excluding large customer contract classes, the  
6           lighting classes’ combined rate of return is the lowest compared to other rate classes’  
7           returns. Consequently, Staff recommends accepting Sulphur Springs’ proposed rates for  
8           its Street and Security lighting customers thereby increasing their revenues 17.04 percent  
9           and 9.13 percent, respectively (WHM-1).

10  
11       **Q. Has Staff developed revised recommended TOU rates for existing TOU customers?**

12       A. Yes. The reason this class of customers is not included in the above discussions is that  
13       Sulphur Springs has a somewhat unique Commission approved approach regarding rate  
14       design for TOU customers. Staff first became aware of this uniqueness when reviewing  
15       direct testimony filed by Sulphur Springs. For example, the residential rate class only  
16       contains seventeen TOU customers in the Test Year compared to over 40,000 non-TOU  
17       residential customers. Staff initiated data requests inquiring why cost of service rate of  
18       return and relative rate of return data are not shown for residential TOU customers. The  
19       responses indicate that the Residential TOU class represents such a small portion of the  
20       combined TOU and non-TOU class that they are statistically insignificant. Staff accepts  
21       SSVEC’s explanation and recommends rates that will increase: (1) Residential TOU  
22       revenues by 20.91 percent; (2) General Service TOU revenues by 27.38 percent; (3) Large  
23       Power TOU revenues by 20.95 percent; and, (4) Large Power Contract 1 TOU rates by  
24       22.12 percent. SSVEC provided empirical data supporting proposed on-peak hour  
25       changes in that they indicate system-wide coincident peaks have been occurring on  
26       weekends. However, SSVEC estimates that Residential on-peak kWh usage will increase

1 approximately 79 percent due to revised summer and winter on-peak periods. Staff has  
 2 concluded that the migration from non-TOU to TOU would be encumbered by adding  
 3 Sundays to TOU on-peak time periods.

4  
 5 **Q. Has Staff developed a table that summarizes the revenue impact of its recommended  
 6 rates upon each rate class?**

7 **A.** The following table summarizes revenue increases as recommended by Staff for all  
 8 customer classes:

9  
 10 **Summary of Revenues from Customer Charges and Sales\***

Rate Class	Present \$	Proposed \$	\$ Increase	% Increase
Residential	\$38,011,842	\$45,765,857	\$7,754,015	20.40%
General Service	\$11,752,900	\$14,882,975	\$3,130,075	26.63%
General Service TOU	\$82,889	\$102,141	\$19,252	23.23%
Irrigation	\$10,885,135	\$13,200,452	\$2,315,317	21.27%
Large Power	\$12,808,981	\$15,258,662	\$2,449,681	19.12%
Large Power TOU	\$553,699	\$669,713	\$116,014	20.95%
Contracts-Excludes Ft. Huachuca	\$2,444,636	\$2,951,878	\$507,242	20.75%
RV Parks	\$393,347	\$464,517	\$71,170	18.09%
Street Lighting	\$436,444	\$548,690	\$112,246	25.72%
Security Lighting	\$264,653	\$313,303	\$48,650	18.38%
Un-metered & Preconst. \$	\$64,574	\$73,040	\$8,466	13.11
Totals	\$77,699,100	\$94,231,228	\$16,532,128	21.28%

16  
 17  
 18  
 19  
 20  
 21 **\*Excludes WPCA and fee revenues; includes Base Cost of Power revenues**

22  
 23 **Q. Will Staff briefly describe its rate design?**

24 **A.** A summary of Staff's proposed rate design and resultant revenues is provided in WHM-1.  
 25 The data above are derived from data contained in WHM-1. Staff's increase in the  
 26 amount of \$16,532,128 (plus a de minimis rounding under-collection in the amount of  
 27 \$541) matches revenue increases recommended by Crystal Brown on Schedule CSB-8  
 28 (Column B, Line 5 plus Column D, Line 10) filed with Ms. Brown's direct testimony.  
 29 The allocation of incremental revenues to the various customer classes is based upon

1 many factors as is discussed later in Staff's testimony. However, Sulphur Springs' rate  
2 design filed in this docket identified rate allocation proportions that guided Staff in  
3 allocating Staff's recommended revenue increases. In fact, the following four rate classes  
4 were allocated rates that are expected to produce incremental revenues equal to the  
5 revenues proposed by Sulphur Springs: Street Lights, Security Lights, Un-Metered service  
6 and Pre-Meter Construction service.

7  
8 **Q. Did Staff base its revenue allocations and rate design solely on Staff's cost of service  
9 study?**

10 A. No. Staff's recommended rates reflect the combined consideration of setting rates that  
11 more accurately reflect classes cost of service, gradualism in change and Staff's  
12 recommended revenue requirement for Sulphur Springs.

13  
14 **Q. Will Staff be addressing the matters of cost of service and revenue requirement?**

15 A. Yes. Staff witnesses Prem Bahl and Crystal Brown will be addressing cost of service and  
16 revenue requirement matters, respectively.

17  
18 **Q. Please further describe Staff's recommended rate design and its effect on Sulphur  
19 Springs' various customer classes.**

20 A. Schedule WHM-2 contains all rates recommended by Sulphur Springs and Staff and  
21 identifies the respective percent changes. A typical bill analysis reflecting the effect of  
22 Sulphur Springs and Staff recommended rate changes on customers with various kWh  
23 usage levels is provided on schedule WHM-3 ("WHM-3"). Referencing data summarized  
24 in WHM-2, Staff recommends increasing the Residential monthly Customer Charge from  
25 \$7.50 to \$8.25. Staff is recommending that the proposed commodity rate be set at  
26 \$0.11818 per kWh compared to the Cooperative's proposed rate of \$0.11830 per kWh.

1           Based on an average residential customer's usage of 728 kWh per month, Staff's  
2           recommended rates will increase an average residential customer's bill by \$15.97 or 20.40  
3           percent (WHM-3).

4  
5           For the Small Commercial rate class, Staff recommends increasing the monthly Customer  
6           Charge from \$11.50 to \$13.50. Staff is recommending that the proposed commodity rate  
7           be set at \$0.11449 per kWh compared to the Cooperative's proposed rate of \$0.11830 per  
8           kWh. Based on an average customer usage of 483 kWh per month, Staff's recommended  
9           rates will raise an average customer's bill by \$14.89 or 27.62 percent.

10  
11           For the Large Commercial rate class, Staff recommends increasing the monthly Customer  
12           Charge from \$11.50 to \$13.35. Staff is recommending that the proposed commodity rate  
13           be set at \$0.11316 per kWh compared to the Cooperative's proposed rate of \$0.11830 per  
14           kWh. Based on an average customer usage of 2,854 kWh per month, Staff's  
15           recommended rates will raise an average customer's bill by \$78.67 or 26.90 percent.

16  
17           For the Large Power rate class, Staff recommends increasing the monthly Customer  
18           Charge from \$42.00 to \$44.25. Staff is recommending that the proposed commodity rate  
19           be set at \$0.07716 per kWh compared to the Cooperative's proposed rate of \$0.06760 per  
20           kWh. Based on an average customer usage of 31,884 kWh per month, Staff's  
21           recommended rates will raise an average customer's bill by \$517.00 or 18.66 percent.

22  
23           The typical Security Lighting installation is a 100 watt, high pressure sodium light using  
24           60 kWhs per month. Staff recommends increasing the present \$9.10 monthly rate per  
25           fixture to \$10.92 per month as proposed by Sulphur Springs. Staff supports this increase

1 of 20 percent due to the negative rate of return for this class of service. The typical  
2 monthly bill is expected to increase \$1.82 per fixture.

3  
4 The typical Street Lighting installation is a 150 watt, high pressure sodium light using 54  
5 kWhs per month. Staff recommends increasing the present \$10.50 monthly rate per  
6 fixture to \$13.13 per month as proposed by Sulphur Springs. Staff supports the increase  
7 of approximately 25 percent due to the negative rate of return for this class of service.  
8 The typical monthly bill is expected to increase \$2.63 per fixture.

9  
10 **Q. Why does Staff exclude Wholesale Power Costs from its rates?**

11 A. The base cost of power in this docket is \$0.072127 per kWh. Staff's rates include this rate.  
12 The Wholesale Power Cost Adjustor ("WPCA") dollars are removed from Staff's rates to  
13 better reflect more accurate percentage increases to rates.

14  
15 **Q. Does Staff have any other reasons for taking this approach when designing rates?**

16 A. Both approaches are valid (including or excluding WPCA) and demonstrate different  
17 points of view. Staff prefers its approach for the following reasons: 1) both Staff's and  
18 SSVEC's proposed base commodity tariff rates exclude a purchased power adjustor; 2)  
19 Staff's approach compares present and proposed base commodity rates that only include  
20 the base cost of power plus O&M-related costs that make up the total base commodity  
21 tariff rate; 3) although the existing WPCA may be set to zero in this rate case, nothing  
22 prevents the Cooperative from requesting an increase to the WPCA if the purchased power  
23 "bank" balance indicates an under collection; and, 4) Staff's exhibits WHM-1 and WHM-  
24 2 have been prepared in the same format as the exhibits submitted by Staff and accepted  
25 by the Commission in previous rate cases. Staff believes that it is better to have an

1           unchanging rate when designing rates, because it is easier for customers to relate to rate  
2           increases that are not based on “moving targets”.

3  
4           **Q.    Will Staff’s rate design testimony include further discussions about the cost of**  
5           **purchased power and the recovery of those costs?**

6           A.    Purchased power costs and their recovery will be discussed in direct testimony prepared  
7           by Julie McNeely-Kirwan.

8  
9           **Q.    What does Staff recommend regarding its proposed rates?**

10          A.    Staff recommends that the rates proposed by Staff and summarized on WHM-2 be  
11          approved.

12  
13          **SERVICE-RELATED CHARGES**

14          **Q.    Were there any service-related charge changes proposed by Sulphur Springs?**

15          A.    Yes.

16  
17          **Q.    What does Staff recommend regarding Sulphur Springs’ proposed changes to its**  
18          **service-related charges?**

19          A.    Staff’s recommendations are summarized at page 2 of WHM-2. The rates proposed for  
20          these services are expected to increase revenues from \$603,308 to \$948,965 per year. The  
21          increase in the amount of \$344,965 is overall approximately 57 percent. Staff did not  
22          accept the Cooperative’s proposed service fees because the increases were higher than  
23          increases developed by Staff. The basis for Staff’s recommendations is the increase in  
24          labor rates for the service sector in the Arizona region as reported in the Handy-Whitman  
25          index over the fifteen year period ended December 31, 2007 – the Test Year in this

1 docket. Staff believes that this is a reliable, accurate source to base its recommendations  
2 upon.

3  
4 **UNBUNDLED TARIFFS**

5 **Q. Please discuss Sulphur Springs' unbundled tariffs.**

6 A. The Cooperative's unbundled rates are not broken down into categories that would be  
7 sufficient to offer customers "Transportation" billings should they be desirable rate  
8 options for customers in the future. For example, the Residential "unbundled" rates  
9 submitted by SSVEC contain only two categories: 1) Power Supply and 2) SSVEC Wires.  
10 What would typically be expected under in an open access market would be the monthly  
11 customer charge further broken down into the following charges: a service availability  
12 charge, a metering charge, a meter reading charge, a billing charge and an information and  
13 service charge. The commodity rate is further broken down into the following  
14 components: a distribution delivery charge, a transmission delivery charge, an energy  
15 charge, a demand charge and a transmission charge. The energy charge, demand charge  
16 and transmission charge components of the commodity rate should reflect Sulphur  
17 Springs' cost to provide energy received from its power sources. If the Cooperative's  
18 territory is open to competition, a customer opting to take service from a competitive  
19 generation provider would not pay the energy charge, demand charge and transmission  
20 charge components of the commodity rate to Sulphur Springs.

21  
22 **Q. What does Staff recommend regarding unbundled rates for Sulphur Springs?**

23 A. Staff recommends that the proposed unbundled rates be approved. However, Staff  
24 recommends that in future rate case filings that Sulphur Springs be required to develop  
25 more detailed and conventional unbundled rates that are structured to not result in any

1 incentive or disincentive for customers who want to choose competitive generation  
2 suppliers.

3  
4 **MISCELLANEOUS TARIFF MATTER - BILL ESTIMATION PROCEDURES**

5 **Q. Does Staff wish to address any additional issues related to the rate case proceeding?**

6 A. Yes. The provisions in Sulphur Springs' rules and regulations do not contain detailed and  
7 specific bill estimation procedures that would be implemented in cases where SSVEC is  
8 unable to obtain actual meter reads. In recent decisions before the Commission, applicants  
9 were ordered to file separate tariffs describing their bill estimation methodologies.

10  
11 **Q. What does Staff recommend regarding Sulphur Springs's bill estimation  
12 procedures?**

13 A. Staff recommends that SSVEC submit through Docket Control a separate tariff describing  
14 its bill estimation methodologies for Commission approval within thirty days of a decision  
15 in this matter. The tariff should address, but not be limited to, the following terms and  
16 conditions:

- 17 a. Conditions under which estimated bills will be billed to customers.  
18 b. Notice of estimation clearly noted on estimated bills that are rendered to  
19 customers.  
20 c. Estimation procedures that explicitly address the conditions and  
21 procedures for estimated bills such as kWh estimates where: i) at least  
22 one year of premise history exists for the same customer at the same  
23 premise or a new customer with at least one year of premise history; ii)  
24 less than one year of premise history for the same customer at the same  
25 premise exists; iii) less than one year of premise history exists for a new

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customer but some premise history exists for the new customer; and, iv) no prior consumption history exists.

d. Variations in estimation methods for differing conditions such as cases involving meter tampering or damaged meters.

e. Conditions where bill estimations will be developed automatically or manually.

f. Conditions where special procedures may be required such as the installation of meters with automatic reading capabilities, the need to estimate first and final bills, and the requirement to use customer specific data to complete an estimate.

g. Where applicable, clearly indicate that estimation procedures will be in compliance with the appropriate section of the Arizona Administrative Code [e.g. Section R14-2-210(A)].

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

A. Yes.

**Rate Design**  
 (Docket No. E-01575A-08-0328)

	Calculated Present	Staff Proposed	SSVEC Present Revenues	Staff Proposed Revenues	\$ Delta	% Delta
<b>Residential Non-TOU</b>						
Monthly Customer Charge:	\$7.50	\$8.25	\$3,639,600	\$4,003,560	\$363,960	10.00%
Cost Per KWh: First 750	\$0.09850	\$0.11818				
Cost Per KWh: Over 750	\$0.09384	\$0.11818				
Total Kwh Used: First 750:	259,719,236	259,719,236	\$25,582,345	\$30,693,560	\$5,111,215	19.98%
Total Kwh Used: Over 750:	93,448,498	93,448,498	\$8,769,207	\$11,043,722	\$2,274,515	25.94%
Kwhs in Minimum:	0	0	0	0		
Total Billings:	485,280	485,280				
Subtotal (kWh and \$)	353,167,734		\$37,991,152	\$45,740,842	\$7,749,690	20.40%
WPCA			\$4,664,734	\$33	(\$4,664,701)	-100.00%
Total Revenue			\$42,655,886	\$45,740,875	\$3,084,989	7.23%
<b>Residential - TOU</b>						
Monthly Customer Charge:	\$11.40	\$13.25	\$2,371	\$2,756	\$385	16.23%
Cost Per KWh: On-Peak	\$0.14050	\$0.13477				
Cost Per KWh: Off-Peak	\$0.07319	\$0.09841				
Total Kwh Used: On-Peak	43,805	43,805	\$6,155	\$5,904	(\$251)	-4.08%
Total Kwh Used: Off-Peak	166,197	166,197	\$12,164	\$16,356	\$4,192	34.46%
Kwhs in Minimum:	0	0	0	0		
Total Billings:	208	208				
Subtotal (kWh and \$)	210,002	210,002	\$20,690	\$25,015	\$4,326	20.91%
WPCA			\$2,797	\$0	(\$2,797)	-100.00%
Total Revenue			\$23,487	\$25,015	\$1,529	6.51%
<b>General Service Non-Demand</b>						
Monthly Customer Charge:	\$11.50	\$13.50	\$866,698	\$1,017,428	\$150,730	17.39%
Cost Per KWh	\$0.08780	\$0.11449				
Total Kwh Used	36,407,984	36,407,984	\$3,196,621	\$4,168,291	\$971,670	30.40%
Added Minimum	\$ 35,996	35,996	\$ 35,996	\$35,996	\$0	0.00%
Kwhs in Minimum:	0	0	0	0		
Total Billings:	75,365	75,365				
Subtotal (kWh and \$)	36,407,984		\$4,099,314	\$5,221,714	\$1,122,400	27.38%
WPCA			\$487,228	\$3	(\$487,223)	-100.00%
Total Revenue			\$4,586,540	\$5,221,717	\$635,177	13.85%
<b>General Service Demand</b>						
Monthly Customer Charge:	\$11.50	\$13.35	\$286,201	\$332,241	\$46,041	16.09%
Demand > 10 kW	\$6.50	\$7.45				
Demand > 10 kW Units	170,742	170,742	\$1,108,823	\$1,272,028	\$162,205	14.62%
Cost Per KWh:	\$0.08780	\$0.11316				
Total Kwh Used	70,960,271	70,960,271	\$6,230,312	\$8,029,740	\$1,799,428	28.88%
Added Minimum	\$27,251	\$27,251	\$27,251	\$27,251	\$0	0.00%
Total Billings:	24,887	24,887				
Subtotal (kWh and \$)	70,960,271		\$7,653,586	\$9,661,261	\$2,007,674	26.23%
WPCA	\$944,118	\$7	\$944,118	\$7	(\$944,111)	-100.00%
Total Revenue			\$ 8,597,704	\$ 9,661,268	\$1,063,563	12.37%
<b>General Service TOU</b>						
Monthly Customer Charge:	\$12.75	\$14.45	\$6,299	\$7,138	\$840	13.33%
Demand > 10 kW	\$17.00	\$18.50				
Demand > 10 kW Units	1,189	1,189	\$20,213	\$21,997	\$1,784	8.82%
Cost Per KWh:	\$0.06739	\$0.08727				
Total Kwh Used	836,583	836,583	\$56,377	\$73,007	\$16,629	29.50%
Added Minimum	\$0	\$0	\$0	\$0	\$0	0.00%
Total Billings:	494	494				
Subtotal (kWh and \$)	836,583		\$82,889	\$102,141	\$19,253	23.23%
WPCA	\$10,403	\$0	\$10,403	\$0	(\$10,403)	-100.00%
Total Revenue			\$ 93,292	\$ 102,141	\$ 8,850	9.49%
<b>Irrigation Seasonal</b>						
Monthly Customer Charge:	\$25.00	\$25.00	\$75,850	\$75,850	\$0	0.00%
Demand Cost	\$6.50	\$6.80				
Demand Units	122,093	122,093	\$793,605	\$830,232	\$36,628	4.62%
Cost Per KWh:	\$0.06590	\$0.08436				
Cost Winter kWh <= 300	\$0.09290	\$0.11076				
Cost Winter kWh > 300	\$0.06590	\$0.08388				
Summer Kwh Used	29,090,785	29,090,785	\$1,917,083	\$2,454,065	\$536,982	28.01%
<= 300 Winter kWh	7,879,053	7,879,053	\$731,964	\$872,723	\$140,759	19.23%
> 300 Winter kWh	809,740	809,740	\$53,362	\$67,920	\$14,558	27.28%
Total Billings:	3,034	3,034				
Subtotal (kWh and \$)	37,779,578		\$3,571,863	\$4,300,791	\$728,928	20.41%
WPCA	\$488,409	\$0	\$488,409	\$0	(\$488,409)	-100.00%
Total Revenue			\$ 4,060,272	\$ 4,300,791	\$240,519	5.92%
<b>Irrigation Load Factor</b>						
Monthly Customer Charge:	\$30.00	\$30.00	\$9,600	\$9,600	\$0	0.00%
Cost Per KWh:	\$0.06800	\$0.09036				
Total Kwh Used	16,244,584	16,244,584	\$1,104,632	\$1,467,893	\$363,261	32.89%
Added kW Minimum	\$ 155,389	155,389	\$ 155,389	\$ 155,389	\$0	0.00%
Kwhs in Minimum:	0	0	0	0		
Total Billings:	320	320				
Subtotal (kWh and \$)	16,244,584		\$1,269,621	\$1,632,882	\$363,261	28.61%
WPCA	\$ 199,884	\$ 1	\$199,884	\$1	(\$199,883)	-100.00%
Total Revenue			\$1,469,505	\$1,632,883	\$163,378	11.12%

**Rate Design**  
 (Docket No. E-01575A-08-0328)

			<u>Present Revenues</u>	<u>Proposed Revenues</u>	<u>\$ Delta</u>	<u>% Delta</u>
<b>Irrigation Daily</b>						
Monthly Customer Charge:	\$25.00	\$25.00	\$21,825	\$21,825	\$0	0.00%
First 150 kWh Cost	\$0.09290	\$0.10624				
Next 150 kWh Cost	\$ 0.08950	\$0.10268				
Over 300 kWh Cost	\$0.06450	\$0.07782				
First 150 kWh	2,006,488	2,006,488	\$186,403	\$213,174	\$26,771	
Next 150 kWh	587,056	587,056	\$52,542	\$60,399	\$7,858	
Over 300 kWh	3,472,041	3,472,041	\$223,947	\$270,208	\$46,261	
Discounted First 150	2,258,126	2,258,126	\$169,922	\$199,810	\$29,888	
Discounted Next 150	2,258,126	2,258,126	\$163,703	\$193,651	\$29,948	
Discounted Rate First	\$ 0.075249	\$0.08848			\$140,726	
Discounted Rate Second	\$ 0.072495	\$0.08576				
Total Billings:	873	873				
Subtotal (kWh and \$)	10,581,837		\$818,340	\$959,066	\$140,726	17.20%
WPCA	\$136,644	\$0	\$136,644	\$0	(\$136,644)	-100.00%
Total Revenue		\$	\$ 954,984	\$ 959,066	\$4,082	0.43%
<b>Irrigation Weekly</b>						
Monthly Customer Charge:	\$25.00	\$25.00	\$65,925	\$65,925	\$0	0.00%
First 150 kWh Cost	\$0.09290	\$0.10909				
Next 150 kWh Cost	\$ 0.08950	\$0.10624				
Over 300 kWh Cost	\$0.06450	\$0.08029				
First 150 kWh	7,050,188	7,050,188	\$654,962	\$769,092	\$114,130	
Next 150 kWh	1,989,408	1,989,408	\$178,052	\$211,350	\$33,298	
Over 300 kWh	10,810,048	10,810,048	\$697,248	\$867,970	\$170,722	
Discounted First 150	6,465,208	6,465,208	\$558,575	\$663,990	\$105,416	
Discounted Next 150	6,465,208	6,465,208	\$538,132	\$647,618	\$109,486	
Discounted Rate First	\$ 0.086397	\$0.10270			\$533,052	
Discounted Rate Second	\$ 0.083235	\$0.10017				
Total Billings:	2,637	2,637				
Subtotal (kWh and \$)	32,780,060		\$2,692,894	\$3,225,946	\$533,052	19.79%
WPCA	\$413,219	\$3	\$413,219	\$3	(\$413,216)	-100.00%
Total Revenue		\$	\$ 3,106,113	\$ 3,225,949	\$119,836	3.86%
<b>Irrigation Daily/Large</b>						
Monthly Customer Charge:	\$25.00	\$25.00	\$36,550	\$36,550	\$0	0.00%
kWh Cost	\$0.06800	\$0.08368				
Total kWh	35,167,187	35,167,187	\$2,391,369	\$2,942,616		
Added Minimum	\$ 102,601	\$ 102,601	\$ 102,601	\$ 102,601		
Total Billings:	1,462	1,462				
Subtotal (kWh and \$)	35,167,187		\$2,530,520	\$3,081,767	\$551,247	21.78%
WPCA	\$449,741	\$3	\$449,741	\$3	(\$449,738)	-100.00%
Total Revenue		\$	\$ 2,980,261	\$ 3,081,770	\$101,509	3.41%
<b>Irrigation Test</b>						
Monthly Customer Charge:	\$0.00	\$0.00	\$0	\$0	\$0	0.00%
kWh Cost	\$0.08780	\$0.11830				
Total kWh	21,603	21,603	\$1,897	\$0		
Added Minimum	\$ -	\$ -	\$ -	\$ -		
Total Billings:	1	1				
Subtotal (kWh and \$)	21,603		\$1,897	\$0	(\$1,897)	-100.00%
WPCA	\$273	\$0	\$273	\$0	(\$273)	-100.00%
Total Revenue		\$	\$ 2,170	\$ -	\$0	0.00%
<b>Large Power</b>						
Monthly Customer Charge:	\$42.00	\$44.25	\$163,254	\$172,000	\$8,746	5.36%
kWh Cost	\$0.06210	\$0.07716				
kW Cost	\$6.50	\$6.80				
Total kWh	124,127,579	124,127,579	\$7,708,323	\$9,577,213	\$1,868,890	
Total kW	447,436	447,436	\$ 2,908,334	\$ 3,042,565	\$134,231	
Total Billings:	3,887	3,887				
Subtotal (kWh and \$)	124,127,579		\$10,779,911	\$12,791,778	\$2,011,867	18.66%
WPCA	\$1,654,110	\$11	\$1,654,110	\$11	(\$1,654,099)	-100.00%
Total Revenue		\$	\$ 12,434,021	\$ 12,791,789	\$357,768	2.88%
<b>Large Power Seasonal</b>						
Monthly Customer Charge:	\$50.00	\$56.25	\$2,600	\$2,925	\$325	12.50%
kWh Cost	\$0.05940	\$0.08				
kW Cost Cust.-Owned T	\$7.00	\$7.85				
kW Cost Coop.-Owned T	\$8.50	\$9.40				
Total kWh	1,073,769	1,073,769	\$63,782	\$83,634	\$19,852	
Total kW Cust. Owned T	8,364.98	8,364.98	\$ 58,555	\$ 65,665	\$7,110	
Total kW Coop. Owned T	877.60	877.60	\$ 7,480	\$ 8,249	\$790	
Total Billings:	52	52				
Subtotal (kWh and \$)	1,073,769		\$132,396	\$160,473	\$28,077	21.21%
WPCA	\$12,216	\$0	\$12,216	\$0	(\$12,216)	-100.00%
Total Revenue		\$	\$ 144,612	\$ 160,473	\$15,861	10.97%
<b>Large Power Industrial</b>						
Monthly Customer Charge:	\$225.00	\$233.50	\$17,775	\$18,447	\$672	3.78%
kWh Cost <= 400	\$0.06100	\$0.07675				
kWh Cost > 400	\$0.03300	\$0.04761				
kW Cost Cust.-Owned T	\$5.50	\$5.75				
kW Cost Coop.-Owned T	\$6.00	\$6.25				
Total kWh <= 400	23,299,814	23,299,814	\$1,421,289	\$1,788,244	\$366,955	
Total kWh > 400	1,731,577	1,731,577	\$57,142	\$82,441	\$25,299	
Total kW Cust. Owned T	6,003.00	6,003.00	\$ 33,017	\$ 34,517	\$1,501	
Total kW Coop. Owned T	61,242.00	61,242.00	\$ 367,452	\$ 382,763	\$15,311	
Total Billings:	79	79				
Subtotal (kWh and \$)	25,031,391		\$1,896,674	\$2,306,411	\$409,737	21.60%
WPCA	\$336,234	\$2	\$336,234	\$2	(\$336,232)	-100.00%
Total Revenue		\$	\$ 2,232,908	\$ 2,306,413	\$73,505	3.29%

**Rate Design**  
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			<u>Present Revenues</u>	<u>Proposed Revenues</u>	<u>\$ Delta</u>	<u>% Delta</u>
Large Power TOU						
Monthly Customer Charge:	\$43.84	\$44.45	\$20,079	\$20,358	\$279	1.39%
On-Peak kW Cost	\$17.00	\$17.15				
Off-Peak kW Cost	\$4.09	\$4.15				
On-Peak kW Billings	2,007	2,007	\$34,119	\$34,420	\$301	0.88%
Off-Peak kW Billings	49,795	49,795	\$203,662	\$206,649	\$2,988	1.47%
kWh Cost	\$ 0.03469	\$0.04788				
Total kWh	8,528,086	8,528,086	\$295,839	\$408,286	\$112,446	38.01%
Total Billings	458	458				
Subtotal (kWh and \$)	8,528,086		\$553,699	\$669,713	\$116,014	20.95%
WPCA			\$107,481	\$1	(\$107,480)	-100.00%
Total Revenue			\$ 661,180	\$ 669,714	\$ 8,534	1.29%

			<u>Present Revenues</u>	<u>Proposed Revenues</u>	<u>\$ Delta</u>	<u>% Delta</u>
Large Power Contract 1						
Monthly Customer Charge:	\$25.00	\$25.00	\$300	\$300	\$0	0.00%
On-Peak kW Cost	\$2.50	\$2.50				
On-Peak kWh Cost	\$0.05820	\$0.07145				
Off-Peak kWh Cost	\$0.03500	\$0.04825				
On-Peak kW Billings	84,291	84,291	\$210,728	\$210,728	\$0	0.00%
On-Peak kWh Billings	16,120,800	16,120,800	\$938,231	\$1,151,871	\$213,640	22.77%
Off-Peak kWh Billings	7,354,800	7,354,800	\$257,418	\$354,876	\$97,458	
Total kWh	23,475,600	23,475,600			\$311,099	
Total Billings	12	12				
Subtotal (kWh and \$)	23,475,600		\$1,406,676	\$1,717,775	\$311,099	22.12%
WPCA	\$296,760	\$ 2.00	\$296,760	\$2	(\$296,758)	-100.00%
Total Revenue			\$ 1,703,436	\$ 1,717,777	\$ 14,341	0.84%

			<u>Present Revenues</u>	<u>Proposed Revenues</u>	<u>\$ Delta</u>	<u>% Delta</u>
Large Power Contract 2						
Monthly Customer Charge:	\$9,633.00	\$9,633.00	\$115,596	\$115,596	\$0	0.00%
Billing kW Cost	\$9.00	\$9.00				
Billing kW Units	24,792	24,792	\$ 223,128	\$ 223,128	\$0	0.00%
First 400 kWh Cost	\$0.0548	\$0.0684				
Over 400 kWh Cost	\$ 0.03475	\$0.0484				
First 400 kWh Units	9,916,800	9,916,800	\$542,945	\$677,900	\$134,955	24.86%
Over 400 kWh Units	4,497,800	4,497,800	\$156,292	\$217,479	\$61,187	
Total Billings	12	12				
Subtotal (kWh and \$)	14,414,400		\$1,037,960	\$1,234,103	\$196,142	18.90%
WPCA	\$195,990	\$ 1.00	\$195,990	\$1	(\$195,989)	-100.00%
Total Revenue			\$ 1,233,950	\$ 1,234,104	\$ 153	0.01%

			<u>Present Revenues</u>	<u>Proposed Revenues</u>	<u>\$ Delta</u>	<u>% Delta</u>
RV Parks						
Monthly Customer Charge:	\$ 42.00	\$43.55	\$5,964	\$6,184	\$220	3.69%
Monthly Billings	142	142				
kW Cost	\$ 6.50	\$6.70				
kw Units	14,932	14,932	\$97,058	\$100,044	\$2,986	3.08%
kWh Cost	\$ 0.0621	\$ 0.0766				
kWh Units	4,675,120	4,675,120	\$290,325	\$358,288	\$67,963	23.41%
Subtotal			\$393,347	\$464,517	\$71,170	18.09%
WPCA	\$ 63,520	\$0	\$63,520	\$0		
Total Revenue			\$456,867	\$464,517	\$7,650	1.67%

Street Lights	Units	Present Rates	Proposed Rates	<u>Present Revenues *</u>	<u>Proposed Revenues *</u>	<u>\$ Delta</u>	<u>% Delta</u>
				\$ 32,344	\$0	(\$32,344)	-100.00%
	168	\$9.85	\$12.31	\$1,655	\$2,068	\$413	24.97%
	1,392	\$8.95	\$11.19	\$12,458	\$15,576	\$3,118	25.03%
	1,608	\$11.25	\$15.97	\$18,090	\$25,680	\$7,590	41.96%
	24	\$16.55	\$20.69	\$397	\$497	\$99	25.02%
	24	\$18.40	\$23.00	\$442	\$552	\$110	25.00%
	756	\$10.35	\$12.94	\$7,825	\$9,783	\$1,958	25.02%
	780	\$12.55	\$15.69	\$9,789	\$12,238	\$2,449	25.02%
	126	\$18.70	\$23.38	\$2,356	\$2,946	\$590	25.03%
	12	\$20.50	\$25.63	\$246	\$308	\$62	25.02%
	3,696	\$11.75	\$14.69	\$43,428	\$54,294	\$10,866	25.02%
	2,940	\$14.15	\$17.69	\$41,601	\$52,009	\$10,408	25.02%
	12	\$22.10	\$27.63	\$265	\$332	\$66	25.02%
	84	\$24.10	\$30.13	\$2,024	\$2,531	\$507	25.02%
	90	\$13.35	\$16.69	\$1,202	\$1,502	\$301	25.02%
	1,260	\$15.80	\$19.75	\$19,908	\$24,885	\$4,977	25.00%
	0	\$24.80	\$31.00	\$0	\$0	\$0	0.00%
	12	\$26.80	\$33.50	\$322	\$402	\$80	25.00%
	765	\$16.45	\$20.56	\$12,584	\$15,728	\$3,144	24.98%
	3,012	\$18.65	\$23.31	\$56,174	\$70,210	\$14,036	24.99%
	0	\$31.40	\$39.25	\$0	\$0	\$0	0.00%
	108	\$33.00	\$41.25	\$3,564	\$4,455	\$891	25.00%

\* First entry is WPCA



**MONTHLY MINIMUM CHARGE**

	Present Rates	Proposed Rates			
		Company	% Change	Staff	% Change
Residential	\$7.50	\$12.50	66.7%	\$8.25	10.0%
Residential (TOU)	\$11.40	\$16.50	44.7%	\$13.25	16.2%
General Service (Non-Demand)	\$11.50	\$17.50	52.2%	\$13.50	17.4%
General Service (Demand)	\$11.50	\$17.50	52.2%	\$13.35	16.1%
General Service (TOU)	\$12.75	\$21.50	68.6%	\$14.45	13.3%
Irrigation Seasonal	\$25.00	\$25.00	0.0%	\$25.00	0.0%
Irrigation Load Factor	\$30.00	\$30.00	0.0%	\$30.00	0.0%
Irrigation Daily	\$25.00	\$25.00	0.0%	\$25.00	0.0%
Irrigation Weekly	\$25.00	\$25.00	0.0%	\$25.00	0.0%
Irrigation Daily/Large	\$25.00	\$25.00	0.0%	\$25.00	0.0%
Large Power	\$42.00	\$75.00	78.6%	\$44.25	5.4%
Large Power Seasonal	\$50.00	\$75.00	50.0%	\$56.25	12.5%
Large Power Industrial	\$225.00	\$250.00	11.1%	\$233.50	3.8%
Large Power TOU	\$43.84	\$100.00	128.1%	\$44.45	1.4%
Large Power Contract 1	\$25.00	\$25.00	0.0%	\$25.00	0.0%
Large Power Contract 2	\$9,633.00	\$9,633.00	0.0%	\$9,633.00	0.0%
RV Parks	\$42.00	\$75.00	78.6%	\$43.55	3.7%
Street Lighting and Security Lighting		See Schedule WHM-1, PP. 3-4 for Details			
Unmetered Power	\$11.00	\$16.00	45.5%	\$16.00	45.5%
Pre-Meter Construction	\$11.50	\$12.00	4.3%	\$12.00	4.3%

**ENERGY (kWh) and Demand (kW) Rates**

Residential First 750 kWh	\$0.09850	\$0.11830	20.1%	\$0.11818	20.0%
Residential Over 750 kWh	\$0.09384	\$0.11830	26.1%	\$0.11818	25.9%
Residential (On-peak TOU)	\$0.14050	\$0.18700	33.1%	\$0.13477	-4.1%
Residential (Off-Peak TOU)	\$0.07319	\$0.07800	6.6%	\$0.09841	34.5%
General Service (Non-Demand)	\$0.08780	\$0.11830	34.7%	\$0.11449	30.4%
General Service (Energy)	\$0.08780	\$0.11830	34.7%	\$0.11316	28.9%
General Service (Demand)	\$6.50000	\$9.00000	38.5%	\$7.45000	14.6%
General Service (TOU)-Energy	\$0.06739	\$0.08930	31.0%	\$0.08727	29.5%
General Service (TOU)-Demand	\$17.00000	\$19.00000	11.8%	\$18.50000	8.8%
Irrigation Seasonal-Energy	\$0.06590	\$0.08470	28.5%	\$0.08436	28.0%
Irrigation Seasonal- Winter Energy (First 300 kWh)	\$0.09290	\$0.11000	18.4%	\$0.11076	19.2%
Irrigation Seasonal- Winter Energy (Over 300 kWh)	\$0.06590	\$0.08000	21.4%	\$0.08388	27.3%
Irrigation Seasonal-Demand	\$6.50000	\$8.00000	23.1%	\$6.80000	4.6%
Irrigation Load Factor-Energy	\$0.06800	\$0.09570	40.7%	\$0.09036	32.9%
Irrigation Daily First 150 kWh	\$0.09290	\$0.11000	18.4%	\$0.10624	14.4%
Irrigation Daily Next 150 kWh	\$0.08950	\$0.11000	22.9%	\$0.10288	14.9%
Irrigation Daily Over 300 kWh	\$0.06450	\$0.08000	24.0%	\$0.07782	20.7%
Irrigation Weekly First 150 kWh	\$0.09290	\$0.11000	18.4%	\$0.10909	17.4%
Irrigation Weekly Next 150 kWh	\$0.08950	\$0.11000	22.9%	\$0.10624	18.7%
Irrigation Weekly Over 300 kWh	\$0.06450	\$0.08000	24.0%	\$0.08029	24.5%
Irrigation Daily/Large kWh	\$0.06800	\$0.08500	25.0%	\$0.08368	23.1%
Irrigation Daily/Large kW (Zero Billing Units Submitted)	\$16.00000	\$19.00000	18.8%	\$0.00000	-100.0%
Large Power kWh	\$0.06210	\$0.06760	8.9%	\$0.07716	24.3%
Large Power Kw	\$6.50000	\$9.80000	50.8%	\$6.80000	4.6%
Large Power Seasonal kWh	\$0.05940	\$0.06760	13.8%	\$0.08000	34.7%
Large Power Seasonal kW (Customer Owned Trans)	\$7.00000	\$9.80000	40.0%	\$7.85000	12.1%
Large Power Seasonal kW (Coop. Owned Trans)	\$8.50000	\$10.80000	27.1%	\$9.40000	10.6%

Large Power Industrial Energy-First 400kWh	\$0.06100	\$0.07630	25.1%	\$0.07675	25.8%
Large Power Industrial Energy-Over 400kWh	\$0.03300	\$0.04130	25.2%	\$0.04761	44.3%
Large Power Industrial kW (Customer Owned Trans)	\$5.50000	\$6.50000	18.2%	\$5.75000	4.5%
Large Power Industrial kW (Coop. Owned Trans)	\$6.00000	\$7.50000	25.0%	\$6.25000	4.2%
Large Power TOU Energy	\$0.03469	\$0.04070	17.3%	\$0.04788	38.0%
Large Power TOU On Peak kW	\$17.00000	\$19.00000	11.8%	\$17.15000	0.9%
Large Power TOU Off Peak kW	\$4.09000	\$4.75000	16.1%	\$4.15000	1.5%
Large Power Contract 1 On-Peak Energy	\$0.05820	\$0.07100	22.0%	\$0.07145	22.8%
Large Power Contract 1 Off-Peak Energy	\$0.03500	\$0.04780	36.6%	\$0.04285	22.4%
Large Power Contract 1 kW	\$2.50000	\$2.50000	0.0%	\$2.50000	0.0%
Large Power Contract 2 First 400 kWh	\$0.05475	\$0.06910	26.2%	\$0.06836	24.9%
Large Power Contract 2 Over 400 kWh	\$0.03475	\$0.04910	41.3%	\$0.04835	39.1%
Large Power Contract 2 kW	\$9.00000	\$9.00000	0.0%	\$9.00000	0.0%
RV Parks kWh	\$0.06210	\$0.06760	8.9%	\$0.07660	23.3%
RV Parks kW (Coop. Owned Trans.)	\$6.50000	\$9.80000	50.8%	\$6.70000	3.1%
Street Lighting and Security Lighting					
Unmetered Power (kWh)	\$0.09600	\$0.08730	-9.1%	\$0.08730	-9.1%
Pre-Meter Construction					

See Schedule WHM-1, PP. 3-4 for Details

No Energy Rates

**PURCHASED POWER FUEL ADJUSTOR - PER KWH**

All Customer Classes (Average Adjustor)	\$0.013157	\$0.00000	-100.0%	\$0.00000	-100.0%
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Note: Base cost of power to increase \$0.013157 raising it from \$0.058970 to \$0.072127.

**SERVICE RELATED CHARGES**

Existing Member Conn. Fees - Normal Hrs.	\$25.00	\$50.00	100%	\$40.00	60%
Existing Member Conn. Fees - After Hrs.	\$45.00	\$150.00	233%	\$75.00	67%
New Connects	\$0.00	\$50.00	100%	\$40.00	100%
Non-Pay Fee - Normal Hours	\$25.00	\$50.00	100%	\$40.00	60%
Non-Pay Fee - After Hours	\$45.00	\$150.00	233%	\$75.00	67%
Radio Control Installation Fee	\$125.00	\$125.00	0%	\$125.00	0%
Temporary Meter	\$95.00	\$95.00	0%	\$95.00	0%
Special After Hours Connection Fee	\$620.00	\$620.00	0%	\$620.00	0%
NSF Return Check Fee	\$15.00	\$35.00	133%	\$25.00	67%
Meter Rereads	\$20.00	\$50.00	150.0%	\$35.00	75%
Service Call Regular Hours	\$25.00	\$100.00	300%	\$40.00	60%
Service Call After Hours	\$45.00	\$150.00	233%	\$75.00	67%
Meter Test	\$25.00	\$150.00	500%	\$40.00	60%

**TYPICAL BILL ANALYSIS**

**COMPANY PROPOSED**

Customer Class	Average kWh Per Month	Present Rates	Company Proposed Rates	Dollar Increase	Percent Increase
Residential	728	\$78.31	\$98.62	\$20.31	25.93%
Small Commercial	483	\$53.91	\$74.64	\$20.73	38.46%
Large Commercial-Dem	2,854	\$292.50	\$397.25	\$104.75	35.81%
Large Power (Coop. Trans)	31,884	\$2,771.06	\$3,359.71	\$588.65	21.24%
100 W Security Lgt. (per lgt.)	60	\$9.10	\$10.92	\$1.82	20.00%
150 W Street Lgt. (per lgt.)	54	\$10.50	\$13.13	\$2.63	25.05%

**STAFF PROPOSED**

Customer Class	Average kWh Per Month	Present Rates	Staff Proposed Rates	Dollar Increase	Percent Increase
Residential	728	\$78.31	\$94.29	\$15.97	20.40%
Small Commercial	483	\$53.91	\$68.80	\$14.89	27.62%
Large Commercial-Dem	2,854	\$292.50	\$371.17	\$78.67	26.90%
Large Power	31,884	\$2,771.06	\$3,288.05	\$517.00	18.66%
100 W Security Lgt. (per lgt.)	60	\$9.10	\$10.92	\$1.82	20.00%
150 W Street Lgt. (per lgt.)	54	\$10.50	\$13.13	\$2.63	25.05%

**RESIDENTIAL**

Monthly kWh Consumption	Company			Staff	
	Present Rates	Proposed Rates	Percent Increase	Proposed Rates	Percent Increase
60	\$13.34	\$19.60	46.95%	15.34	15.03%
100	\$17.23	\$24.33	41.23%	20.07	16.49%
200	\$26.95	\$36.16	34.15%	31.89	18.30%
500	\$56.14	\$71.65	27.64%	67.34	19.96%
1000	\$104.77	\$130.80	24.84%	126.43	20.67%
1500	\$153.41	\$189.95	23.82%	185.52	20.93%
2000	\$202.04	\$249.10	23.29%	244.61	21.07%
2500	\$250.68	\$308.25	22.97%	303.70	21.15%
3000	\$299.31	\$367.40	22.75%	362.79	21.21%
4000	\$396.58	\$485.70	22.47%	480.97	21.28%
5000	\$493.85	\$604.00	22.30%	599.15	21.32%

**TYPICAL BILL ANALYSIS - Continued**

<u>COMMERCIAL SMALL</u> Monthly kWh Consumption	Company			Staff	
	Present Rates	Proposed Rates	Percent Increase	Proposed Rates	Percent Increase
60	16.77	24.60	46.70%	20.37	21.48%
120	22.04	31.70	43.84%	27.24	23.61%
2,000	187.10	254.10	35.81%	242.48	29.60%
4,000	362.70	490.70	35.29%	471.46	29.99%
5,000	450.50	609.00	35.18%	585.95	30.07%
10,000	889.50	1,200.50	34.96%	1,158.40	30.23%
15,000	1,328.50	1,792.00	34.89%	1,730.85	30.29%
20,000	1,767.50	2,383.50	34.85%	2,303.30	30.31%
25,000	2,206.50	2,975.00	34.83%	2,875.75	30.33%
30,000	2,645.50	3,566.50	34.81%	3,448.20	30.34%
35,000	3,084.50	4,158.00	34.80%	4,020.65	30.35%
40,000	3,523.50	4,749.50	34.79%	4,593.10	30.36%
45,000	3,962.50	5,341.00	34.79%	5,165.55	30.36%
50,000	4,401.50	5,932.50	34.78%	5,738.00	30.36%
100,000	8,791.50	11,847.50	34.76%	11,462.50	30.38%
150,000	13,181.50	17,762.50	34.75%	17,187.00	30.39%
200,000	17,571.50	23,677.50	34.75%	22,911.50	30.39%
250,000	21,961.50	29,592.50	34.75%	28,636.00	30.39%
300,000	26,351.50	35,507.50	34.75%	34,360.50	30.39%

<u>COMMERCIAL LARGE</u> Monthly kWh Consumption	Company			Staff	
	Present Rates	Proposed Rates	Percent Increase	Proposed Rates	Percent Increase
1,000	129.72	177.92	37.16%	161.38	24.40%
2,000	217.52	296.22	36.18%	274.54	26.21%
4,000	393.12	532.82	35.54%	500.86	27.41%
5,000	480.92	651.12	35.39%	614.02	27.68%
10,000	919.92	1,242.62	35.08%	1,179.82	28.25%
15,000	1,358.92	1,834.12	34.97%	1,745.62	28.46%
20,000	1,797.92	2,425.62	34.91%	2,311.42	28.56%
25,000	2,236.92	3,017.12	34.88%	2,877.22	28.62%
30,000	2,675.92	3,608.62	34.86%	3,443.02	28.67%
35,000	3,114.92	4,200.12	34.84%	4,008.82	28.70%
40,000	3,553.92	4,791.62	34.83%	4,574.62	28.72%
45,000	3,992.92	5,383.12	34.82%	5,140.42	28.74%
50,000	4,431.92	5,974.62	34.81%	5,706.22	28.75%
100,000	8,821.92	11,889.62	34.77%	11,364.22	28.82%
150,000	13,211.92	17,804.62	34.76%	17,022.22	28.84%
500,000	43,941.92	59,209.62	34.75%	56,628.22	28.87%
1,000,000	87,841.92	118,359.62	34.74%	113,208.22	28.88%
1,500,000	131,741.92	177,509.62	34.74%	169,788.22	28.88%

**TYPICAL BILL ANALYSIS - Continued**

<u><b>LARGE POWER</b></u> Monthly kWh Consumption	Company			Staff	
	Present Rates	Proposed Rates	Percent Increase	Proposed Rates	Percent Increase
25000	2,343.56	2,894.35	23.50%	2,756.88	17.64%
30000	2,654.06	3,232.35	21.79%	3,142.68	18.41%
35000	2,964.56	3,570.35	20.43%	3,528.48	19.02%
40000	3,275.06	3,908.35	19.34%	3,914.28	19.52%
45000	3,585.56	4,246.35	18.43%	4,300.08	19.93%
50000	3,896.06	4,584.35	17.67%	4,685.88	20.27%
55000	4,206.56	4,922.35	17.02%	5,071.68	20.57%
60000	4,517.06	5,260.35	16.46%	5,457.48	20.82%
65000	4,827.56	5,598.35	15.97%	5,843.28	21.04%
70000	5,138.06	5,936.35	15.54%	6,229.08	21.23%
75000	5,448.56	6,274.35	15.16%	6,614.88	21.41%

**BEFORE THE ARIZONA CORPORATION COMMISSION**

KRISTIN K. MAYES  
Chairman  
GARY PIERCE  
Commissioner  
PAUL NEWMAN  
Commissioner  
SANDRA D. KENNEDY  
Commissioner  
BOB STUMP  
Commissioner

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. E-01575A-08-0328  
SULPHUR SPRINGS VALLEY ELECTRIC )  
COOPERATIVE, INC. FOR A HEARING TO )  
DETERMINE THE FAIR VALUE OF ITS )  
PROPERTY FOR RATEMAKING PURPOSES, )  
TO FIX A JUST AND REASONABLE RETURN )  
THEREON, TO APPROVE RATES DESIGNED )  
TO DEVELOP SUCH RETURN AND FOR )  
RELATED APPROVALS. )  

---

DIRECT  
TESTIMONY  
OF  
PREM K. BAHL  
ELECTRIC UTILITIES ENGINEER  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

FEBRUARY 17, 2009

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**EXHIBITS**

Geographical Layout of SSVEC’s Present Electric System .....	EXHIBIT 1
Cost of Service Study Schedules .....	EXHIBIT 2
• Cost Allocation Summary – Staff Adjusted Rates (Schedule PB-G 1.0)	
• Summary of Components of Expenses (Schedule PB-M 1.0)	

**EXECUTIVE SUMMARY  
SULPHUR SPRINGS VALLEY ELECTRIC  
COOPERATIVE, INC.  
DOCKET NO. E-01575A-08-0328**

Prem Bahl's testimony makes recommendations regarding the Arizona Corporation Commission ("Commission" or "ACC") Utilities Division Staff's ("Staff") position in the case of SSVEC Electric Cooperative, Inc.'s ("SSVEC" or "Cooperative") application for a general rate increase. In conjunction with Staff's engineering evaluation, Staff gives an account of its inspection of SSVEC's distribution system, of SSVEC's current operations and maintenance, and of SSVEC's future plans to upgrade and expand its system. Staff also reviews SSVEC's Cost of Service Study ("COSS"). Staff has the following conclusions and recommendations:

**CONCLUSIONS**

Based on Staff's engineering inspection of SSVEC's electric system, and evaluation and analysis of SSVEC's Cost of Service study results, Staff concludes as follows:

1. That SSVEC:
  - a. is operating and maintaining its electrical system properly,
  - b. is carrying out system improvements, upgrades and new additions to meet the current and projected load of the Cooperative in an efficient and reliable manner,
  - c. has an acceptable level of system losses consistent with the industry guidelines,
  - d. is working with the Cochise County Transmission study group to implement the directions issued in the 5<sup>th</sup> BTA Order (Decision No. 70635),
  - e. has a satisfactory record of service interruptions in the historic period between 2004 and 2007, showing an average of 2.09 outage hours per consumer per year,
  - f. has evaluated numerous options regarding the Sonoita Reliability Project ("SRP") and its associated 69kV line to Sonoita. The proposed SRP will improve service reliability in Sonoita, Patagonia and Elgin service areas.
2. That SSVEC has used its COSS model for the bundled rate filing appropriately. The model used by SSVEC is consistent with what the Commission approved for use in another cooperative rate case.

3. That, based on the evaluation of the COSS model utilized by SSVEC, the results are satisfactory.

## **RECOMMENDATIONS**

Based on the aforementioned conclusions, Staff recommends that:

1. SSVEC work with other entities, such as Arizona Public Service Company, Tucson Electric Company, and Southwest Transmission Cooperative to establish “continuity” of service, as ordered by the Commission in the fifth BTA in Decision No. 70635, in the Cochise County area, including the Sierra Vista area.
2. SSVEC continue to upgrade its 69 kV sub-transmission and distribution system to improve system performance and reliability for its members.
3. SSVEC continue with its wooden pole replacement program.
4. Commission accept SSVEC’s Cost of Service Study for use in this case.

1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Prem K. Bahl. My business address is 1200 West Washington Street,  
4 Phoenix, Arizona 85007.

5  
6 **Q. By whom and in what capacity are you employed?**

7 A. I am employed by the Arizona Corporation Commission ("Commission") as an Electric  
8 Utilities Engineer.

9  
10 **Q. Please describe your educational background.**

11 A. I graduated from the South Dakota State University with a Masters degree in Electrical  
12 Engineering in May 1972. I received my Professional Engineering ("P.E.") License in the  
13 state of Arizona in 1978. My Bachelor of Science degree in Electrical Engineering was  
14 from the Agra University, India in 1957.

15  
16 **Q. Please describe your pertinent work experience.**

17 A. I worked at the Arizona Corporation Commission from 1988 to 1998 as a Utilities  
18 Consultant, and have subsequently worked at the Commission as an Electric Utilities  
19 Engineer since June 2002. During this time period of over sixteen years, I conducted  
20 engineering evaluations of electric utility rate cases and financing cases, such as Arizona  
21 Public Service Company, Tucson Electric Company, Southwest Gas Company, Trico  
22 Electric Cooperative, Duncan Valley Electric Cooperative; Sulphur Springs Valley  
23 Electric Cooperative, Graham County Electric Cooperative, and Graham County Utilities,  
24 Inc., Gas Division. I inspected utility power plants including the Palo Verde Nuclear  
25 Generating Station. I was involved with the development of retail competition in Arizona  
26 and of DesertStar, an Independent System Operator ("ISO") for the desert southwest

1 region. I was Chairman of the System Reliability Working Group, which evaluated the  
2 impact of competition on system reliability and recommended the establishment of the  
3 Arizona Independent System Administrator ("AISA") as an interim organization until  
4 commercial operation of DesertStar, which later evolved as WestConnect, a Regional  
5 Transmission Operator ("RTO"). Since rejoining the Commission, I have reviewed the  
6 utilities' load curtailment plans; coordinated with the Commission Consultants to hold six  
7 workshops to report on the second thru the fifth Biennial Transmission Assessments for  
8 Arizona. I have also worked on compliance of Certificates of Environmental  
9 Compatibility including Harquahala, Panda Gila River, Red Hawk, Northern Arizona  
10 Project, and Coolidge power plants. In 2004, I testified in the line siting cases of Tucson  
11 Electric Power Company's ("TEP") 138 kV Robert Bills-Wilmont Substation and Trico  
12 Electric Cooperative's 115 kV Sandario Project. In 2007 and 2008, I testified in the Palo  
13 Verde to North Gila 500 kV project, 138 kV Vail to Cienega project and the Coolidge  
14 Station project.

15  
16 From July 2001 to June 2002, I had my own consulting engineering firm, named P. K.  
17 Bahl & Associates. During that time, I was involved with deregulation of the electric  
18 power industry and the formation of RTO's, addressing the planning, congestion  
19 management, business practices and market monitoring activities of the then Northwest  
20 RTO and the MidWest ISO.

21  
22 From July 1998 to August 2000, I worked as Chief Engineer at the Residential Utility  
23 Consumer Office. During that time period, I performed many of the duties I performed at  
24 the Commission. I was also involved with the Distributed Generation Work Group that  
25 looked at the impact of development of distributed generation in Arizona on system  
26 reliability, and modifications of interconnection standards currently specified by the

1 jurisdictional utilities. I was a member of the AISA Board of Directors from September  
2 1999 until June 2000. I was involved in the deliberations of the Market Interface  
3 Committee of the North American Electric Reliability Council ("NERC"). I also  
4 published and presented a number of technical papers at national and international  
5 conferences regarding transmission issues and distributed generation during the last thirty  
6 years.

7  
8 Prior to my employment with the Commission, I had worked as an electrical engineer with  
9 electric utilities and consulting firms in the transmission and generation planning areas for  
10 approximately thirty two years, including ten years' experience at the Punjab State  
11 Electricity Board ("PSEB") in India from 1960 to 1970. I worked as Executive Engineer  
12 at the PSEB from 1968 to 1970 prior to coming to the United States in 1970.

13  
14 **Q. As part of your assigned duties at the Commission, did you perform an analysis of**  
15 **the application that is the subject of this proceeding?**

16 A. Yes, I did.

17  
18 **Q. Is your testimony herein based on that analysis?**

19 A. Yes, it is.

20  
21 **PURPOSE OF TESTIMONY**

22 **Q. What is the purpose of your prefiled testimony?**

23 A. The purpose of my testimony is to discuss Staff's engineering evaluation of Sulphur  
24 Springs Valley Electric Cooperative's ("SSVEC" or "Cooperative") system operations and  
25 planning, and to discuss Staff's review of SSVEC's Cost of Service Study ("COSS") for  
26 the bundled rate case, and present the results of this review.

1 **ENGINEERING EVALUATION**

2 **Q. Would you please describe SSVEC's general utility background and potential load**  
3 **growth in its service territory?**

4 **A.** Yes. The following provides SSVEC's electric system overview and customer and load  
5 growth projected by the Cooperative.

6  
7 **Utility Overview**

8 SSVEC became a partial requirements member of Arizona Electric Power Cooperative  
9 ("AEPCO") on January 1, 2008. According to SSVEC, the Cooperative will have the  
10 need to secure up to 100 MW beyond its current level of supply of power from AEPCO,  
11 during peak load conditions. AEPCO's power is delivered to SSVEC through the  
12 transmission system of Southwest Transmission Cooperative, Inc. ("SWTC") and is  
13 measured at SWTC's wholesale delivery points at San Rafael 230 kV Substation,  
14 Kartchner 115 kV Substation, Apache Power Plant 115 kV Substation, and Red Tail 230  
15 kV Substation. At year end 2008, SSVEC provided electric power to its members via  
16 4,012 miles of energized lines, including 286 miles of sub-transmission lines, 3,008 miles  
17 of overhead distribution lines and 718 miles of underground distribution cables. Like  
18 other cooperatives in the state of Arizona, SSVEC's major customer base and  
19 consumption is residential load.

20  
21 For the future generation needs, the Cooperative is evaluating participation in other  
22 planned generation projects in Arizona, including the Southwest Power Group's Bowie  
23 Plant and the generation resources planned by the Southwest Public Power Resource  
24 group ("SPPR") for its intermediate power needs.

1 The Cooperative's service territory is located within Western Area Power  
2 Administration's ("WAPA") Control Area<sup>1</sup>. A geographical layout of SSVEC's sub-  
3 transmission lines and present substations is attached as Exhibit 1.

4  
5 **Customer and Load Growth**

6 SSVEC's total number of customers grew from 38,976 in 1998 to 50,365 in 2008. This is  
7 an average increase of 2.9% per year. Long-term growth projected by the Cooperative  
8 anticipates 52,708 customers in 2009, increasing at an average rate of 2.26% per year to  
9 81,255 customers in 2033.

10  
11 The Cooperative's retail load grew from approximately 96 MW in 1998 to 191.2 MW in  
12 2008, which is an average increase of 7.2% per year. However, the Cooperative is  
13 projecting a load growth of only 3.37% per year for the next 24 years ending 2033 because  
14 of the current depressed economic conditions.

15  
16 **Q. Did Staff perform an engineering evaluation of SSVEC's electrical system?**

17 **A.** Yes. On November 6 & 7, 2008, I visited the offices of SSVEC in Benson and Sierra  
18 Vista. There I met with the following people: Anselmo Torres Jr., Chief Operations &  
19 Engineering Officer; Ron Orozco, Engineering Manager; Pete Swiatek, Maintenance  
20 /Operations Supervisor; David Bryan, Engineer; Kirby Chapman, Chief Financial Officer;  
21 Al Smith, Technical Services Supervisor; David Bane, Key Accounts Manager; Ricardo  
22 Garcia, Construction Manager; Derek Sorely, Purchasing Manager; Kurt Towler, GIS  
23 Coordinator; and Bobby Bernal, Maintenance/Operations Supervisor designee.

24  

---

<sup>1</sup> A Control Area monitors actual and scheduled transmission transactions to assure load and generation are balanced within its system and power flows are within the ratings of the transmission facilities.

1 **Q. What issues were discussed with the SSVEC officials?**

2 A. I discussed with the Cooperative officials the status and details of SSVEC's Sierra Vista  
3 transmission reliability (including SSVEC's efforts to improve service reliability in this  
4 area), Sonoita area reliability, wooden pole replacement schedule and the Cooperative's  
5 general maintenance practices. In addition, I toured various parts of the SSVEC system.

6  
7 **Q. What are the major capital improvements projects that SSVEC plans to cover in its  
8 Work Plan?**

9 A. I discussed the details of SSVEC's Work Plan with Mr. Torres, Mr. Orozco, Mr. Swiatek  
10 and Mr. Bryan. The Cooperative explained the need and justification of various projects  
11 included in the Plan. These projects include installation of new underground cables,  
12 upgrading of distribution and tie lines, upgrading of certain 69 kV lines and construction  
13 of a 69 kV line to Sonoita and the new Sonoita Substation. The present distribution line to  
14 Sonoita has reached its capacity and needs to be built at a higher voltage to meet the load  
15 requirements in a reliable manner. New distribution feeders and tie lines would emanate  
16 from the Sonoita Substation with a feeder tie to the existing Huachuca Substation, which  
17 currently serves the area. New sub-transmission feeders would also include St. David to  
18 Cottonwood, Ramsey Substation to a new substation in Hereford, a short sub-transmission  
19 tie to the APS 69 kV system at Palominas, and Stewart switching station to Mortenson  
20 Substation. In addition, SSVEC has allocated monies to 69 kV sub-transmission upgrades  
21 to accommodate greater system loading, and to replace some of the old wooden poles with  
22 new concrete poles with under-build of 24.7 kV distribution feeders. Some of these  
23 concrete poles at an angle or end of the line are stand-alone poles without requirement of  
24 any guy wire. These projects are not site-specific at this time, but their need is known.

1 **Q. Would you explain the Sonoita Project controversy?**

2 A. Mr. Orozco made a power point presentation of the details of the Sonoita project, which is  
3 proposed to resolve significant capacity, reliability and power quality problems in the  
4 Sonoita/Elgin/Patagonia service area. SSVEC's proposal for a new substation to divide  
5 the existing 360-mile distribution feeder into multiple short feeders will resolve the  
6 current reliability issues. The 69 kV sub-transmission line to serve the substation is the  
7 most controversial part of the project. Although SSVEC's easement for the 69 kV line  
8 was procured more than a quarter of a century ago, residents of the area oppose the line  
9 due to its location on the San Ignacio del Babocomari Land Grant, a private property of  
10 scenic beauty, and on property within the residential area where SSVEC's substation  
11 property exists. The Cooperative continues to communicate with the citizens through  
12 public meetings and mailings, giving them a clear indication that the issue of this project  
13 is reliability and quality of service. SSVEC hopes to resolve this issue in the near future.

14

15 **Q. What was the purpose of Staff's site visits?**

16 A. The purpose of Staff's site visits was to inspect the operation and maintenance of the  
17 Cooperative's subtransmission and distribution lines and substations, and to see the  
18 construction of new upgraded poles and installation of fiber optic cable out of Kartchner  
19 Substation. Staff's purpose was also to inspect the installation of Automatic Meter  
20 Reading equipment the Cooperative's inventory yard to verify the purposeful procurement  
21 of equipment yards

22

23 **Q. Would you summarize your site visits with various SSVEC officials?**

24 A. Yes. The following summarizes my site visits to the various substations and construction  
25 sites, and comments/conclusions and observations specific to each site.

26

1 **November 6, 2008**

2 **San Rafael 230 kV Substation – David Bryan**

- 3 • General overview of San Rafael Substation.
- 4 • General discussion on the Fifth Biennial Transmission Assessment Order under which San
- 5 Rafael Substation should be looped with Kartchner Substation to improve long-term
- 6 reliability in the Sierra Vista area.
- 7 • Voltages used on SSVEC system (69 kV, 7.2/12.47 kV, 14.4/24.9 kV, and on the Fort
- 8 Huachuca 13.8 kV).
- 9 • SSVEC is moving forward with SWTC for a 2<sup>nd</sup> transformer, approximately 150 MVA in
- 10 size, to be installed at the San Rafael Substation in 2010.

11

12 **Kartchner Substation**

13 **Highway 90 Bypass 69 kV Sub-Transmission Project – Messrs. Torres, Swiatek, Orozco,**

14 **Bernal, Garcia, Jacobs**

- 15 • Viewed four new 69 kV sub-transmission circuits on a dozen concrete poles with unguayed
- 16 steel corner poles. The Cooperative is rebuilding this entire line to beyond the Bella Vista
- 17 Tap.
- 18 • Several 69 kV circuits had new 12.4 kV distribution under-build.
- 19 • Watched crews adjust 69 kV gang operated air break switch.
- 20 • New sub-transmission line has fiber optic cable in the static wire.
- 21 • This project provides additional backup to SWTC's transmission facilities by providing
- 22 additional sub-transmission path. This project will also provide additional backup paths
- 23 for the forthcoming TEP and APS tie lines.

1 **Sierra Vista Sub – Messrs. Swiatek, Orozco, Bernal, Garcia, Jacobs**

- 2 • Viewed new 69 kV drop into substation.
- 3 • New 69 kV and lower voltage under-build.
- 4 • Viewed Automatic Meter Reading (“AMR”) installation including injection pad  
5 transformer and discussed other major substation AMR components, such as Receiving  
6 Transformer Units (“RTU”), etc.
- 7 • Viewed new underground U3 and U7 1000 kCM new cable feeder getaways.
- 8 • Cooper Regulator controls installed.

9

10 **Keating Sub –Messrs. Swiatek, Orozco, Bernal and Garcia**

- 11 • SSVEC’s 10 MVA Mobile Substation was in use.
- 12 • SSVEC’s Mobile Regulator and Viper recloser trailer was in use.
- 13 • Supervisory Control and Data Acquisition (“SCADA”) controls were operational and  
14 viewable.
- 15 • Use of PME (name brand) cabinets on feeders.
- 16 • Rebuild of the distribution T3 feeder and upcoming T2 feeder rebuild.

17

18 **Tombstone Junction -- Messrs. Orozco and Swiatek**

- 19 • SSVEC is working to keep this 69 kV switching station as an integral part of SSVEC’s  
20 sub-transmission network.
- 21 • SSVEC replaced most of its very old breakers in 2008. This project provides additional  
22 backup to SWTC transmission facilities by upgrading a vital subtransmission path. This  
23 project will also provide additional backup for the forthcoming TEP and APS tie lines.

1 **Tombstone Sub** – Messrs. Orozco and Swiatek

- 2 • Viewed new substation with 10/12/14 MVA, 69/25 kV transformer.  
3 • Substation has SEL (name brand) relays, and SCADA facilities.  
4 • 4 underground getaways, 69 kV construction with 25 kV under-build, and new 25 kV  
5 distribution feeders.  
6 • oil spill prevention swells, which are made of plastic coated Geotec fabric.  
7 • detailed review of animal- and bird-proofing methods at the substation.

8  
9 **November 7, 2008**

10 **Substation Maintenance** – Messrs. Smith and Bryan

- 11 • Discussed Substation maintenance and line recloser maintenance.  
12 • Over \$130,000 of maintenance equipment has been purchased over the last few years to  
13 ensure the Cooperative's key facilities are kept in shape. The equipment purchased  
14 includes:  
15 \$40,000 Megger Power Factor Insulation Tester.  
16 \$60,000 Doble Test Set.  
17 \$20,000 Thermal Camera.  
18 \$10,000 Current Transformer Tester.  
19 \$3,000 Transformer Turns Ratio ("TTR") Tester.  
20 • This equipment has identified problems in newly built substations, large customer  
21 distribution transformers, substation transformers, and other facilities prior to any facility  
22 failing.  
23 • This equipment has kept outages from occurring and allowed the orderly and timely  
24 repair.  
25 • Inspection forms are in separate PDF files.

1 **Line Maintenance – Messrs. Swiatek, Bernal and Bryan**

- 2 • Issues discussed included line patrol, cable injection, and tree trimming.
- 3 • SSVEC systemically patrols its facilities, and SSVEC personnel routinely inspect facilities
- 4 as part of their daily travels.
- 5

6 **Underground cable injection**

- 7 • For older underground cables that were direct buried, SSVEC uses two companies that
- 8 inject the cable with life-prolonging fluid. This prevents having to replace the cable,
- 9 which is often in people’s backyards, and ultimately saves money.
- 10 • Fluid injection is approximately \$9/foot; cable replacement is \$20 and up per foot.
- 11

12 **Tree trimming**

- 13 • SSVEC has contracted with Asplundh Tree Experts for all tree trimming services for the
- 14 last 13 years.
- 15 • They are scheduled to trim trees in three different service areas, Willcox, Benson and
- 16 Sierra Vista.
- 17 • One crew works full time on a regular rotation.
- 18 • A part-time crew is called in every 4<sup>th</sup> or 5<sup>th</sup> year depending on rain fall and high seasonal
- 19 growth.
- 20

21 **Purchasing – Messrs. Sorely and Bryan**

22 Issues discussed included:

- 23 • New DOE efficiency standards for transformers.
- 24 • Purchasing working closely with Operations and Engineering to ensure sufficient but not
- 25 excessive material on hand.
- 26

1     **Bidding for material**

- 2     •     SSVEC receives bids or quotes for almost all items purchased.
- 3     •     For line materials, five vendors are solicited, and each vendor typically returns two bids.
- 4     •     Normally, ten bids are received on all routine line materials.
- 5     •     Purchasing typically requests and receives at least three bids on major office equipment
- 6     such as computers.

7

8     **Sonoita Reliability Project– Messrs. Orozco, Swiatek, Garcia and Towler**

- 9     •     Kurt Towler showed a 3-dimensional view of four options considered for the final portion
- 10     of the route.
- 11    •     Ron Orozco presented an overview of the entire project and details on Babocomari Ranch
- 12     easement issues.
- 13    •     A complete package of information, including information from community meetings,
- 14     was presented.
- 15    •     A map showing the route in its entirety was included.
- 16    •     SSVEC is scheduled to make a final selection on the route week of Nov 17.
- 17    •     The Cooperative presented the new location for the substation.
- 18    •     This new location is in response to community input and opposition to the previous site
- 19     known as the Buchanan site.
- 20    •     SSVEC has held four community meetings, sent six mass mailings to people in the area,
- 21     and fielded public comment for nine months.

22

23    **Benson Warehouse -- David Bryan**

- 24    •     Discussed general questions on equipment.
- 25    •     Selectively inspected the inventory and did not find any material or equipment that was
- 26     not used and useful.

1 **Q. Describe the Fort Huachuca Distribution Electric Privatization project.**

2 A. SSVEC acquired the Fort Huachuca Distribution Electric Privatization project in  
3 September 2004. A transition period was established for approximately 90 days while  
4 SSVEC hired personnel to support the Operation and Maintenance (O&M) and Renewals  
5 and Replacements (R&R) portions of the project. In January 2005, SSVEC began full-  
6 time operation of the Fort Huachuca 13.8 kV electric distribution system. TEP is still the  
7 supplier of electricity to the Fort Huachuca Substation.

8  
9 The existing Fort Huachuca Substation is fed from the 13.8 kV tertiary tap on TEP's  
10 138/46 kV, 50 MVA transformer. The transformer's main feed is TEP's 138 kV line (50  
11 MVA of capacity) and the backup feed is TEP's 46 kV line (approximately 17 MVA of  
12 capacity). The 13.8 kV overhead bus work feeds four underground risers to two metal  
13 clad switchgears. Each switchgear is fed at each end by an underground feeder with a tie  
14 breaker in the middle. There are a total of 12 primary distribution circuits feeding the  
15 Fort's distribution system. Each switchgear has rack mounted capacitor banks that are  
16 controlled for unity power factor. There is approximately 65 miles of overhead primary  
17 distribution and approximately 45 miles of underground primary distribution. There are  
18 about 900 distribution transformers serving approximately 4,300 customers. SSVEC is in  
19 the process of metering all services on the Fort.

20  
21 The new contract provided for Initial Capital Upgrades ("ICU") that would improve the  
22 electric distribution system. One of the major ICU projects was Greely Hall. This  
23 100,000 square foot building had originally been a manufacturing plant. There were  
24 several indoor vaults that contained oil filled switches and transformers. The ICU funding  
25 allowed relocation and replacement of this indoor equipment with standard outdoor  
26 transformers, primary dead front switchgear and new service entrance switches. This

1 project will be completed by the end of 2008. Another ICU project was to design a  
2 backup substation that could provide Fort Huachuca with power from the Kartchner  
3 Substation in case of an emergency. The design should be completed in January 2009 and  
4 Fort Huachuca will be asking Congress for funding to build the substation. The ICU  
5 projects are expected to continue for at least two more years.

6  
7 In early January of 2005, SSVEC learned there would be other electrical distribution  
8 functions to perform on Fort Huachuca. The Corps of Engineers was replacing old  
9 housing with new housing units and SSVEC is responsible for the design and construction  
10 of the new distribution facilities. The Corps of Engineers provided funding to SSVEC for  
11 construction of the new facilities. SSVEC also learned there would be other Special  
12 Projects for electric distribution. These Special Projects were paid for by various  
13 government entities. The various types of projects include installing electric distribution  
14 facilities to serve new buildings, upgrading electric distribution facilities to serve load  
15 increases, and provide new street lighting. These Special Projects have required a full  
16 time SSVEC construction crew to be assigned to the Fort.

17  
18 **Q. What is Staff's view of SSVEC's system reliability?**

19 **A.** The system is unable to sustain single contingency during summer peak load conditions  
20 since it is only served by two SWTC radial transmission lines into the Sierra Vista area, at  
21 the 230 kV San Rafael substation and 115 kV Kartchner Substation, both having 100  
22 MVA capacity transformers,. In October of 2007, the Sierra Vista area suffered two total  
23 blackouts when the 115 kV line to Kartchner experienced an outage while the Butterfield-  
24 San Rafael 230 kV line was taken out of service for installing fiber optic cable on the line.  
25 These blackouts occurred one day apart. In addition, a short blackout occurred earlier that  
26 same month. SSVEC is currently working with the Cochise County Transmission Study

1 group to determine the best technical solution for improved reliability in the area.  
2 SSVEC's sub-transmission system will likely be called upon to back-up SWTC's  
3 transmission system until a longer-term solution is identified. In addition, SSVEC  
4 engineering is moving forward with SWTC engineering to provide for a second and larger  
5 transformer (150 MVA) at the San Rafael Substation. The proposal is still being  
6 evaluated and must be approved by SSVEC and SWTC management.  
7

8 **Q. How does Staff assess SSVEC's quality of service in terms of customer outage hours?**

9 A. SSVEC's outage hours per consumer per year varied between 1.10 in 2005 and 3.52 in  
10 2007 for the 2004-2007 period, showing an average of 2.09 outage hours per consumer  
11 per year<sup>2</sup>. SSVEC's outage ratio is well below the Rural Utilities Service ("RUS")  
12 guidelines of 5 outage hours per consumer per year. This shows that, in general, the  
13 Cooperative is providing reliable service to its customers and responding to outages in a  
14 timely manner.  
15

16 **Q. At what level are SSVEC's overall system losses? Are they reasonable and**  
17 **acceptable?**

18 A. SSVEC's annual system losses ranged between 5.60 percent in 2002 and 7.22 percent in  
19 2006 in 2000-2007. These losses are well within the industry guidelines of 10 percent per  
20 year for rural electric cooperatives.  
21

22 **Q. What is SSVEC's wooden pole replacement program?**

23 A. SSVEC has approximately 81,000 wooden poles, many of which are more than 45 years  
24 old. The Cooperative replaces these older wooden poles on a scheduled basis according to

---

<sup>2</sup> In October 2007, four SWTC transmission outages caused nearly 68,000 consumer-outage hours alone.

1 the Construction Work Plan. SSVEC replaced over 600 poles in 2008. SSVEC's pole  
2 replacement program has three major aspects to Risk Identification and Assessment:

- 3
- 4 1. Osmose Pole Testing: SSVEC contracts with Osmose to physically inspect and chemically  
5 test approximately 6,000 poles per year. Inspections are selected on the basis of last  
6 inspection year, age of poles, relative importance of line, and voltage.
  - 7 2. Line Patrol: SSVEC inspects 15% of its lines every year for specific maintenance  
8 requirements.
  - 9 3. Spot Maintenance and New Construction: As crews work near existing lines, poles are  
10 inspected and replaced as necessary. Any poles identified for immediate replacement are  
11 replaced by the Maintenance crews.
- 12

13 **COST OF SERVICE STUDY**

14 **Q. What is the purpose of preparing a Cost of Service Study ("COSS")?**

15 A. There are three steps to take in performing a COSS. 1) functionalization; 2) classification,  
16 and 3) allocation. First, the COSS enables us to determine the system's cost of service by  
17 classifying the utility's costs (investments and expenses) by function, such as customer-  
18 related, demand-related, and energy-related functions. Second, the study breaks down  
19 costs by customer classes to reflect, as closely as possible, the cost causation by respective  
20 customer classes. Third, the result of the COSS provides a benchmark for the revenues  
21 needed from each customer category by allocating the revenue requirement for each  
22 customer class.

23

24 **Q. Is there a standard COSS model?**

25 A. There is no standard methodology for designing a COSS, but it is generally advisable to  
26 follow a range of alternatives to identify which allocations are more reasonable than

1 others. For that reason, the COSS should be used as a general guide only and is only one  
2 of many considerations in designing rates.

3  
4 **Q. What process was used by Staff in reviewing the SSVEC's COSS**

5 A. First, I reviewed the model used by the Cooperative in developing various allocation  
6 factors in the bundled COSS. Second, I reviewed the Test Year ("TY 2007") rate base,  
7 revenues and expenses in the bundled rate case, adjusted by the Cooperative by its Pro  
8 Forma adjustments, and matched them with the appropriate schedules contained in the  
9 application. Third, I incorporated the changes in the COSS that Staff witness, Crystal  
10 Brown, had made in the revenue requirement.

11  
12 **Q. What model was used by SSVEC in developing its COSS and is Staff satisfied with**  
13 **the input data utilized in this model?**

14 A. For conducting the COSS, SSVEC engaged the services of C. H. Guernsey & Company  
15 ("Consultants"), out of Oklahoma City, Oklahoma. The Consultants used their in-house  
16 model, named CoOPTIONS. The same model was used by the Consultants and was  
17 approved by the Commission in the last rate case filed by Trico Electric Cooperative  
18 (Docket No. E-01461A).

19  
20 **Q. What did Staff determine from its review of the Cost of Service Study?**

21 A. SSVEC's COSS used appropriate methods to functionalize, classify and allocate costs.  
22 The weighting factors SSVEC used were reasonable. SSVEC appropriately used the  
23 "Sum of 12 Non-coincident Peaks ("NCP")<sup>3</sup>" to allocate demand charges to each of the  
24 customer classes. A 12-month demand allocation factor was developed using the monthly  
25 purchased demand values during the test year, as the system monthly total. The allocation

---

<sup>3</sup> **Non-coincident Peak** is the maximum demand experienced by SSVEC in a specified period of time, such as a month or a year, which occurs at a time other than the time when AEPCO experiences its peak.

1 of monthly demand responsibility was made to all of the classes with metered demand by  
2 applying the appropriate losses, Load Factors<sup>4</sup> and Coincidence Factors<sup>5</sup> to metered  
3 demand values for that class. After the allocation of Coincident Peak ("CP")<sup>6</sup> demand  
4 responsibility was made to the classes with metered demand, the remainder of the CP  
5 demand was assigned to the non-demand metered classes (such as Residential, General  
6 Service (1), and Time of Day Water Pumping) based on their respective kWh sales.

7  
8 The COSS model appropriately calculated the components of the bundled case. Attached  
9 herewith as Exhibit 2 is the Cost of Service Study Schedules, showing Cost Allocation  
10 Summary - Staff Adjusted Rates (Schedule PB-G 1.0), and Summary of Components of  
11 Expenses (Schedule PB-M 1.0).

12  
13 **Q. Did the methods used by SSVEC comply with industry standards?**

14 A. SSVEC used procedures and methodology that are generally accepted standards  
15 throughout the utility industry for its cost of service study. Allocation of invested capital  
16 and operating expenses were allocated to the respective customer classes on the basis of  
17 demand, energy and other customer related factors.

18  
19 **Q. Does Staff have a recommendation concerning SSVEC's Cost of Service Study?**

20 A. Staff recommends the Commission accept SSVEC's Cost of Service Study in this case.  
21

---

<sup>4</sup> **Load Factor** is calculated as the ratio of energy to demand for a set time frame. The load factor based on maximum demand will always be between 0 and 1.

<sup>5</sup> **Coincidence Factor** is the ratio of coincident demand to maximum demand. This will always be between 0 and 1 because coincident demand should always be less than or equal to maximum demand.

<sup>6</sup> **Coincident Peak** means the maximum system demand which occurs at the same time that AEPCO peak occurs every month. SSVEC is charged by AEPCO based on its peak coincident with AEPCO's peak.

1 **CONCLUSIONS AND RECOMMENDATIONS**

2 **Q. Based upon your testimony, what are Staff's conclusions and recommendations**  
3 **regarding its engineering evaluation of SSVEC's electrical system and the COSS?**

4 **A.** Staff's conclusions and recommendations are as follows:  
5

6 **CONCLUSIONS**

7 Based on Staff's engineering inspection of SSVEC's electric system, and evaluation and  
8 analysis of SSVEC's Cost of Service study results, Staff concludes as follows:

9 4. That SSVEC:

- 10 a. is operating and maintaining its electrical system properly,  
11 b. is carrying out system improvements, upgrades and new additions to meet the  
12 current and projected load of the Cooperative in an efficient and reliable manner,  
13 c. has an acceptable level of system losses consistent with the industry guidelines,  
14 d. is working with the Cochise County Transmission study group to implement the  
15 directions issued in the 5<sup>th</sup> BTA Order (Decision No. 70635),  
16 e. has a satisfactory record of service interruptions in the historic period between  
17 2004 and 2007, showing an average of 2.09 outage hours per consumer per year,  
18 f. has evaluated numerous options regarding the Sonoita Reliability Project ("SRP")  
19 and its associated 69kV line to Sonoita. The proposed SRP will improve service  
20 reliability in Sonoita, Patagonia and Elgin service areas.

21 5. That SSVEC has used its COSS model for the bundled rate filing appropriately.  
22 The model used by SSVEC is consistent with what the Commission approved for  
23 use in another cooperative rate case.

24 6. That, based on the evaluation of the COSS model utilized by SSVEC, the results  
25 are satisfactory.  
26

1     **RECOMMENDATIONS**

2             Based on the aforementioned conclusions, Staff recommends that:

- 3             1.     SSVEC work with other entities, such as Arizona Public Service Company,  
4                     Tucson Electric Company, and Southwest Transmission Cooperative to establish  
5                     “continuity” of service, as ordered by the Commission in the fifth BTA in Decision  
6                     No. 70635, in the Cochise County area including the Sierra Vista area.
- 7             2.     SSVEC continue to upgrade its 69 kV sub-transmission and distribution system to  
8                     improve system performance and reliability for its members.
- 9             3.     SSVEC continue with its wooden pole replacement program.
- 10            4.     Commission accept SSVEC’s Cost of Service Study for use in this case.

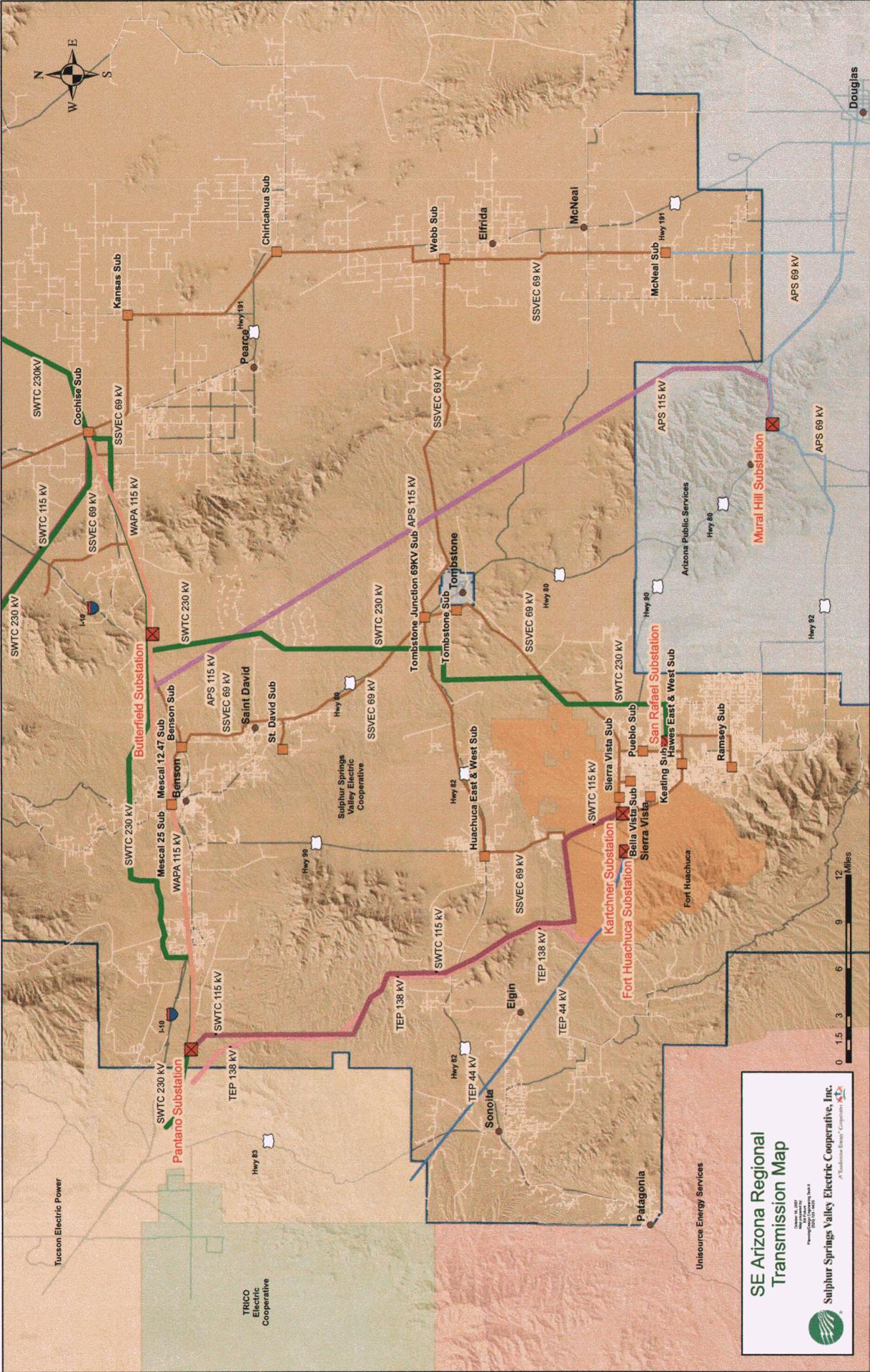
11

12     **Q.     Does that conclude your testimony?**

13     **A.     Yes, it does.**

# **EXHIBIT 1**

**Geographical Layout of SSVEC's Present and Proposed System**



**SE Arizona Regional  
Transmission Map**


 Sulphur Springs Valley Electric Cooperative, Inc.  
 A Sulphur Springs Valley Electric Cooperative, Inc. Company

Prepared by: [unreadable]  
 Date: [unreadable]  
 Project: [unreadable]

Unisource Energy Services  
 Tucson, Arizona

# **EXHIBIT 2**

## **Cost of Service Study Schedules**

**ARIZONA CORPORATION COMMISSION**  
**SSVEC EXISTING RATES - Staff Adjusted**  
**DOCKET NO. E-01575A-08-0328 - TY 12-31-07**  
**Cost Allocation Summary**

Account	Total	Residential	Gen Service	GS-TOU	RV Parks	Lighting
Rate Base	132,886,193	68,053,411	28,155,313	281,107	497,577	3,146,313
Operating Revenues	93,744,086	43,811,584	13,610,790	96,828	460,552	764,559
Operating Expenses	85,055,074	42,019,922	13,553,585	101,634	415,127	963,855
Return	8,689,012	1,791,662	57,204	-4,805	45,424	-199,296
Rate of Return	6.539 %	2.633 %	0.203 %	-1.710 %	9.129 %	-6.334 %
Relative ROR	1.000	0.403	0.031	-0.261	1.396	-0.969
Interest	7,106,255	3,782,902	1,463,408	14,020	25,173	153,507
Operating Margins	1,582,757	-1,991,240	-1,406,203	-18,826	20,251	-352,803
Margin as % Revenue	1.688 %	-4.545 %	-10.332 %	-19.443 %	4.397 %	-46.145 %
Operating TIER	1.223	0.474	0.039	-0.343	1.805	-1.298
<b>Revenue Deficiencies</b>						
Uniform ROR = 11.320000	6,353,705	5,911,984	3,129,976	36,626	10,900	555,459
Deficiency % Rev	6.778 %	13.494 %	22.996 %	37.827 %	2.367 %	72.651 %
Uniform % Mar = 7.928708	6,353,705	5,935,545	2,699,390	28,785	17,664	449,025
Deficiency % Rev	6.778 %	13.548 %	19.833 %	29.729 %	3.835 %	58.730 %

**ARIZONA CORPORATION COMMISSION**  
**SSVEC EXISTING RATES - Staff Adjusted**  
**DOCKET NO. E-01575A-08-0328 - TY 12-31-07**  
**Cost Allocation Summary**

Account	Total	Large Power	LP-TOU	LP Industrial	Contracts	Ft Huachuca
Rate Base	132,886,193	12,958,769	635,012	2,023,134	2,476,865	-27,507
Operating Revenues	93,744,086	12,691,966	666,460	2,248,751	2,954,463	3,741,026
Operating Expenses	85,055,074	10,916,906	452,330	2,044,579	2,554,418	1,739,427
Return	8,689,012	1,775,059	214,130	204,171	400,044	2,001,598
Rate of Return	6.539%	13.698%	33.721%	10.092%	16.151%	-7,276.685%
Relative ROR	1.000	2.095	5.157	1.543	2.470	-1,112.866
Interest	7,106,255	657,058	33,893	103,884	122,173	10,337
Operating Margins	1,582,757	1,118,000	180,237	100,286	277,870	1,991,261
Margin as % Revenue	1.688%	8.809%	27.044%	4.460%	9.405%	53.228%
Operating TIER	1.223	2.702	6.318	1.965	3.274	193.633
<b>Revenue Deficiencies</b>						
Uniform ROR = 11.320000	6,353,705	-308,126	-142,247	24,847	-119,663	-2,004,711
Deficiency % Rev	6.778%	-2.428%	-21.344%	1.105%	-4.050%	-53.587%
Uniform % Mar = 7.928708	6,353,705	-121,309	-138,366	84,728	-47,376	-1,840,580
Deficiency % Rev	6.778%	-0.956%	-20.761%	3.768%	-1.604%	-49.200%

ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Cost Allocation Summary

Account	Total	Irrigation	Irrig-Daily	Irrig-Weekly	Irrig-Large	Total Irrig
Rate Base	132,886,193	6,209,460	1,390,965	3,661,790	3,423,978	14,686,194
Operating Revenues	93,744,086	5,576,168	967,155	3,144,184	3,009,594	12,697,103
Operating Expenses	85,055,074	5,036,284	636,978	2,571,448	2,048,573	10,293,284
Return	8,689,012	539,883	330,177	572,736	961,021	2,403,818
Rate of Return	6.539 %	8.695 %	23.737 %	15.641 %	28.067 %	16.368 %
Relative ROR	1.000	1.330	3.630	2.392	4.293	2.503
Interest	7,106,255	313,571	69,647	184,882	171,794	739,895
Operating Margins	1,582,757	226,312	260,529	387,853	789,226	1,663,922
Margin as % Revenue	1.688 %	4.059 %	26.938 %	12.336 %	26.224 %	13.105 %
Operating TIER	1.223	1.722	4.741	3.098	5.594	3.249
<b>Revenue Deficiencies</b>						
Uniform ROR = 11.320000	6,353,705	163,027	-172,719	-158,222	-573,426	-741,341
Deficiency % Rev	6.778 %	2.924 %	-17.859 %	-5.032 %	-19.053 %	-5.839 %
Uniform % Mar = 7.928708	6,353,705	234,390	-199,679	-150,492	-598,020	-713,801
Deficiency % Rev	6.778 %	4.203 %	-20.646 %	-4.786 %	-19.870 %	-5.622 %

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Residential	Gen Service	GS-TOU	RV Parks	Lighting
Average Consumers	50,263	40,457	8,373	41	12	278
kWh Sold	799,860,156	353,377,736	107,754,871	836,583	4,675,120	3,990,174
Metered kW	0	0	310,468	0	14,030	0
Billing kW	0	0	365,412	1,189	14,932	0
<b>Demand-PurPwr-Gen</b>	<b>19,008,826</b>	<b>9,906,486</b>	<b>3,039,080</b>	<b>13,345</b>	<b>113,076</b>	<b>40,395</b>
Monthly Cost per Cons	31.52	20.41	30.25	27.12	785.25	12.11
Average Cost per kWh	0.023765	0.028034	0.028204	0.015952	0.024187	0.010124
Cost per Metered kW	0.00	0.00	9.79	0.00	8.06	0.00
Cost per Billing kW	0.00	0.00	8.32	11.22	7.57	0.00
<b>Demand-PurPwr-Del</b>	<b>10,709,971</b>	<b>5,611,529</b>	<b>1,721,487</b>	<b>7,559</b>	<b>64,052</b>	<b>22,882</b>
Monthly Cost per Cons	17.76	11.56	17.13	15.36	444.81	6.86
Average Cost per kWh	0.013390	0.015880	0.015976	0.009036	0.013701	0.005735
Cost per Metered kW	0.00	0.00	5.54	0.00	4.57	0.00
Cost per Billing kW	0.00	0.00	4.71	6.36	4.29	0.00
<b>Energy-PurPwr-Gen</b>	<b>26,120,592</b>	<b>11,535,947</b>	<b>3,517,637</b>	<b>27,310</b>	<b>152,618</b>	<b>130,258</b>
Monthly Cost per Cons	43.31	23.76	35.01	55.51	1,059.85	39.05
Average Cost per kWh	0.032656	0.032645	0.032645	0.032645	0.032645	0.032645
Cost per Metered kW	0.00	0.00	11.33	0.00	10.88	0.00
Cost per Billing kW	0.00	0.00	9.63	22.97	10.22	0.00
<b>Energy-PurPwr-Del</b>	<b>1,852,198</b>	<b>829,553</b>	<b>252,954</b>	<b>1,964</b>	<b>10,975</b>	<b>9,367</b>
Monthly Cost per Cons	3.07	1.71	2.52	3.99	76.21	2.81
Average Cost per kWh	0.002316	0.002347	0.002347	0.002348	0.002347	0.002347
Cost per Metered kW	0.00	0.00	0.81	0.00	0.78	0.00
Cost per Billing kW	0.00	0.00	0.69	1.65	0.73	0.00
<b>Dist-Substations</b>	<b>2,667,810</b>	<b>1,231,635</b>	<b>362,968</b>	<b>1,567</b>	<b>13,279</b>	<b>4,744</b>
Monthly Cost per Cons	4.42	2.54	3.61	3.19	92.21	1.42
Average Cost per kWh	0.003335	0.003485	0.003368	0.001873	0.002840	0.001189
Cost per Metered kW	0.00	0.00	1.17	0.00	0.95	0.00
Cost per Billing kW	0.00	0.00	0.99	1.32	0.89	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Residential	Gen Service	GS-TOU	RV Parks	Lighting
Average Consumers	50,263	40,457	8,373	41	12	278
kWh Sold	799,860,156	353,377,736	107,754,871	836,583	4,675,120	3,990,174
Metered kW	0	0	310,468	0	14,030	0
Billing kW	0	0	365,412	1,189	14,932	0
<b>Dist-Backbone</b>	<b>10,275,945</b>	<b>5,225,910</b>	<b>1,540,098</b>	<b>6,649</b>	<b>56,342</b>	<b>20,127</b>
Monthly Cost per Cons	17.04	10.76	15.33	13.51	391.26	6.03
Average Cost per kWh	0.012847	0.014788	0.014293	0.007948	0.012051	0.005044
Cost per Metered kW		0.00	4.96	0.00	4.02	0.00
Cost per Billing kW		0.00	4.21	5.59	3.77	0.00
<b>Dist-Demand</b>	<b>4,468,185</b>	<b>2,050,598</b>	<b>1,203,878</b>	<b>15,954</b>	<b>7,102</b>	<b>37,373</b>
Monthly Cost per Cons	7.41	4.22	11.98	32.43	49.32	11.20
Average Cost per kWh	0.005586	0.005803	0.011172	0.019070	0.001519	0.009366
Cost per Metered kW		0.00	3.88	0.00	0.51	0.00
Cost per Billing kW		0.00	3.29	13.42	0.48	0.00
<b>Dmd- Trans Plant</b>	<b>884,916</b>	<b>436,117</b>	<b>128,526</b>	<b>555</b>	<b>4,702</b>	<b>1,680</b>
Monthly Cost per Cons	1.47	0.90	1.28	1.13	32.65	0.50
Average Cost per kWh	0.001106	0.001234	0.001193	0.000663	0.001006	0.000421
Cost per Metered kW		0.00	0.41	0.00	0.34	0.00
Cost per Billing kW		0.00	0.35	0.47	0.31	0.00
<b>Dist-Customer</b>	<b>7,828,428</b>	<b>3,422,484</b>	<b>1,857,152</b>	<b>24,517</b>	<b>7,649</b>	<b>751,344</b>
Monthly Cost per Cons	12.98	7.05	18.48	49.83	53.12	225.22
Average Cost per kWh	0.009787	0.009685	0.017235	0.029306	0.001636	0.188299
Cost per Metered kW		0.00	5.98	0.00	0.55	0.00
Cost per Billing kW		0.00	5.08	20.62	0.51	0.00
<b>Distr. Meter</b>	<b>1,934,583</b>	<b>1,205,190</b>	<b>393,269</b>	<b>10,175</b>	<b>1,191</b>	<b>0</b>
Monthly Cost per Cons	3.21	2.48	3.91	20.68	8.27	0.00
Average Cost per kWh	0.002419	0.003410	0.003650	0.012163	0.000255	0.000000
Cost per Metered kW		0.00	1.27	0.00	0.08	0.00
Cost per Billing kW		0.00	1.08	8.56	0.08	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Residential	Gen Service	GS-TOU	RV Parks	Lighting
Average Consumers	50,263	40,457	8,373	41	12	278
kWh Sold	799,860,156	353,377,736	107,754,871	836,583	4,675,120	3,990,174
Metered kW	0	0	310,468	0	14,030	0
Billing kW	0	0	365,412	1,189	14,932	0
<b>Meter-Reading</b>	<b>683,171</b>	<b>519,064</b>	<b>133,763</b>	<b>1,315</b>	<b>308</b>	<b>0</b>
Monthly Cost per Cons	1.13	1.07	1.33	2.67	2.14	0.00
Average Cost per kWh	0.000854	0.001469	0.001241	0.001572	0.000066	0.000000
Cost per Metered kW	0.00	0.00	0.43	0.00	0.02	0.00
Cost per Billing kW	0.00	0.00	0.37	1.11	0.02	0.00
<b>Customer Records</b>	<b>2,943,912</b>	<b>2,139,618</b>	<b>442,816</b>	<b>2,168</b>	<b>635</b>	<b>79,541</b>
Monthly Cost per Cons	4.88	4.41	4.41	4.41	4.41	23.84
Average Cost per kWh	0.003681	0.006055	0.004109	0.002592	0.000136	0.019934
Cost per Metered kW	0.00	0.00	1.43	0.00	0.05	0.00
Cost per Billing kW	0.00	0.00	1.21	1.82	0.04	0.00
<b>Customer Service</b>	<b>1,152,088</b>	<b>931,616</b>	<b>188,253</b>	<b>922</b>	<b>270</b>	<b>6,250</b>
Monthly Cost per Cons	1.91	1.92	1.87	1.87	1.87	1.87
Average Cost per kWh	0.001440	0.002636	0.001747	0.001102	0.000058	0.001566
Cost per Metered kW	0.00	0.00	0.61	0.00	0.02	0.00
Cost per Billing kW	0.00	0.00	0.52	0.78	0.02	0.00
<b>Revenue</b>	<b>1,630,704</b>	<b>757,076</b>	<b>235,112</b>	<b>1,655</b>	<b>8,103</b>	<b>13,402</b>
Monthly Cost per Cons	2.70	1.56	2.34	3.36	56.27	4.02
Average Cost per kWh	0.002039	0.002142	0.002182	0.001978	0.001733	0.003359
Cost per Metered kW	0.00	0.00	0.76	0.00	0.58	0.00
Cost per Billing kW	0.00	0.00	0.64	1.39	0.54	0.00
<b>Total Expenses</b>	<b>92,161,329</b>	<b>45,802,825</b>	<b>15,016,993</b>	<b>115,654</b>	<b>440,300</b>	<b>1,117,363</b>
Monthly Cost per Cons	152.80	94.34	149.46	235.07	3,057.64	334.94
Average Cost per kWh	0.115222	0.129614	0.139363	0.138247	0.094180	0.280029
Cost per Metered kW	0.00	0.00	48.37	0.00	31.38	0.00
Cost per Billing kW	0.00	0.00	41.10	97.27	29.49	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Residential	Gen Service	GS-TOU	RV Parks	Lighting
Average Consumers	50,263	40,457	8,373	41	12	278
kWh Sold	799,860,156	353,377,736	107,754,871	836,583	4,675,120	3,990,174
Metered kW	0	0	310,468	0	14,030	0
Billing kW	0	0	365,412	1,189	14,932	0
<b>System Demand</b>	<b>18,296,857</b>	<b>8,944,261</b>	<b>3,235,470</b>	<b>24,725</b>	<b>81,424</b>	<b>63,924</b>
Monthly Cost per Cons	30.34	18.42	32.20	50.25	565.44	19.16
Average Cost per kWh	0.022875	0.025311	0.030026	0.029555	0.017416	0.016020
Cost per Metered kW		0.00	10.42	0.00	5.80	0.00
Cost per Billing kW		0.00	8.85	20.79	5.45	0.00
<b>Total Customer</b>	<b>16,172,885</b>	<b>8,975,050</b>	<b>3,250,365</b>	<b>40,752</b>	<b>18,155</b>	<b>850,537</b>
Monthly Cost per Cons	26.81	18.49	32.35	82.83	126.08	254.96
Average Cost per kWh	0.020220	0.025398	0.030164	0.048712	0.003883	0.213158
Cost per Metered kW		0.00	10.47	0.00	1.29	0.00
Cost per Billing kW		0.00	8.90	34.27	1.22	0.00
<b>Pur Pwr-Demand</b>	<b>29,718,797</b>	<b>15,518,015</b>	<b>4,760,567</b>	<b>20,904</b>	<b>177,128</b>	<b>63,277</b>
Monthly Cost per Cons	49.27	31.96	47.38	42.49	1,230.06	18.97
Average Cost per kWh	0.037155	0.043913	0.044180	0.024987	0.037887	0.015858
Cost per Metered kW		0.00	15.33	0.00	12.62	0.00
Cost per Billing kW		0.00	13.03	17.58	11.86	0.00
<b>Pur Pwr Energy/Fuel</b>	<b>27,972,790</b>	<b>12,365,500</b>	<b>3,770,591</b>	<b>29,274</b>	<b>163,593</b>	<b>139,625</b>
Monthly Cost per Cons	46.38	25.47	37.53	59.50	1,136.06	41.85
Average Cost per kWh	0.034972	0.034992	0.034992	0.034992	0.034992	0.034992
Cost per Metered kW		0.00	12.14	0.00	11.66	0.00
Cost per Billing kW		0.00	10.32	24.62	10.96	0.00
<b>Total Expenses</b>	<b>92,161,329</b>	<b>45,802,825</b>	<b>15,016,993</b>	<b>115,654</b>	<b>440,300</b>	<b>1,117,363</b>
Monthly Cost per Cons	152.80	94.34	149.46	235.07	3,057.64	334.94
Average Cost per kWh	0.115222	0.129614	0.139363	0.138247	0.094180	0.280029
Cost per Metered kW		0.00	48.37	0.00	31.38	0.00
Cost per Billing kW		0.00	41.10	97.27	29.49	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Large Power	LP-TOU	LP Industrial	Contracts	Ft Huachuca
Average Consumers	50,263	335	38	8	2	1
kWh Sold	799,860,156	125,201,348	8,528,086	25,031,391	37,890,000	0
Metered kW		393,575	44,821	58,540	109,039	0
Billing kW		456,679	51,802	62,207	109,083	0
<b>Demand-PurPwr-Gen</b>	<b>19,008,826</b>	<b>2,882,089</b>	<b>26,951</b>	<b>552,522</b>	<b>550,768</b>	<b>0</b>
Monthly Cost per Cons	31.52	716.94	59.10	5,755.43	22,948.68	0.00
Average Cost per kWh	0.023765	0.023020	0.003160	0.022073	0.014536	0.000000
Cost per Metered kW		7.32	0.60	9.44	5.05	0.00
Cost per Billing kW		6.31	0.52	8.88	5.05	0.00
<b>Demand-PurPwr-Del</b>	<b>10,709,971</b>	<b>1,632,559</b>	<b>15,266</b>	<b>312,976</b>	<b>254,404</b>	<b>0</b>
Monthly Cost per Cons	17.76	406.11	33.48	3,260.16	10,600.15	0.00
Average Cost per kWh	0.013390	0.013039	0.001790	0.012503	0.006714	0.000000
Cost per Metered kW		4.15	0.34	5.35	2.33	0.00
Cost per Billing kW		3.57	0.29	5.03	2.33	0.00
<b>Energy-PurPwr-Gen</b>	<b>26,120,592</b>	<b>4,087,174</b>	<b>278,398</b>	<b>813,130</b>	<b>1,250,239</b>	<b>0</b>
Monthly Cost per Cons	43.31	1,016.71	610.52	8,470.11	52,093.28	0.00
Average Cost per kWh	0.032656	0.032645	0.032645	0.032484	0.032997	0.000000
Cost per Metered kW		10.38	6.21	13.89	11.47	0.00
Cost per Billing kW		8.95	5.37	13.07	11.46	0.00
<b>Energy-PurPwr-Del</b>	<b>1,852,198</b>	<b>293,910</b>	<b>20,020</b>	<b>58,472</b>	<b>63,765</b>	<b>0</b>
Monthly Cost per Cons	3.07	73.11	43.90	609.09	2,656.87	0.00
Average Cost per kWh	0.002316	0.002347	0.002347	0.002336	0.001683	0.000000
Cost per Metered kW		0.75	0.45	1.00	0.58	0.00
Cost per Billing kW		0.64	0.39	0.94	0.58	0.00
<b>Dist-Substations</b>	<b>2,667,810</b>	<b>338,443</b>	<b>32,859</b>	<b>59,715</b>	<b>290,829</b>	<b>14,632</b>
Monthly Cost per Cons	4.42	84.19	72.06	622.03	12,117.89	1,219.37
Average Cost per kWh	0.003335	0.002703	0.003853	0.002386	0.007676	0.000000
Cost per Metered kW		0.86	0.73	1.02	2.67	0.00
Cost per Billing kW		0.74	0.63	0.96	2.67	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Large Power	LP-TOU	LP Industrial	Contracts	Ft Huachuca
Average Consumers	50,263	335	38	8	2	1
kWh Sold	799,860,156	125,201,348	8,528,086	25,031,391	37,890,000	0
Metered kW		393,575	44,821	58,540	109,039	0
Billing kW		456,679	51,802	62,207	109,083	0
<b>Dist-Backbone</b>	<b>10,275,945</b>	<b>1,436,035</b>	<b>0</b>	<b>253,376</b>	<b>134,512</b>	<b>257,255</b>
Monthly Cost per Cons	17.04	357.22	0.00	2,639.33	5,604.66	21,437.88
Average Cost per kWh	0.012847	0.011470	0.000000	0.010122	0.003550	0.000000
Cost per Metered kW		3.65	0.00	4.33	1.23	0.00
Cost per Billing kW		3.14	0.00	4.07	1.23	0.00
<b>Dist-Demand</b>	<b>4,468,185</b>	<b>231,181</b>	<b>21,916</b>	<b>15,092</b>	<b>14,982</b>	<b>469,874</b>
Monthly Cost per Cons	7.41	57.51	48.06	157.21	624.26	39,156.18
Average Cost per kWh	0.005586	0.001846	0.002570	0.000603	0.000395	0.000000
Cost per Metered kW		0.59	0.49	0.26	0.14	0.00
Cost per Billing kW		0.51	0.42	0.24	0.14	0.00
<b>Dmd- Trans Plant</b>	<b>884,916</b>	<b>119,841</b>	<b>11,635</b>	<b>33,134</b>	<b>36,428</b>	<b>0</b>
Monthly Cost per Cons	1.47	29.81	25.52	345.15	1,517.84	0.00
Average Cost per kWh	0.001106	0.000957	0.001364	0.001324	0.000961	0.000000
Cost per Metered kW		0.30	0.26	0.57	0.33	0.00
Cost per Billing kW		0.26	0.22	0.53	0.33	0.00
<b>Dist-Customer</b>	<b>7,828,428</b>	<b>262,529</b>	<b>25,647</b>	<b>8,942</b>	<b>25,490</b>	<b>760,314</b>
Monthly Cost per Cons	12.98	65.31	56.24	93.14	1,062.09	63,359.47
Average Cost per kWh	0.009787	0.002097	0.003007	0.000357	0.000673	0.000000
Cost per Metered kW		0.67	0.57	0.15	0.23	0.00
Cost per Billing kW		0.57	0.50	0.14	0.23	0.00
<b>Distr. Meter</b>	<b>1,934,583</b>	<b>33,256</b>	<b>37,723</b>	<b>695</b>	<b>137</b>	<b>181,572</b>
Monthly Cost per Cons	3.21	8.27	82.73	7.24	5.70	15,131.02
Average Cost per kWh	0.002419	0.000266	0.004423	0.000028	0.000004	0.000000
Cost per Metered kW		0.08	0.84	0.01	0.00	0.00
Cost per Billing kW		0.07	0.73	0.01	0.00	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Large Power	LP-TOU	LP Industrial	Contracts	Ft Huachuca
Average Consumers	50,263	335	38	8	2	1
kWh Sold	799,860,156	125,201,348	8,528,086	25,031,391	37,890,000	0
Metered kW		393,575	44,821	58,540	109,039	0
Billing kW		456,679	51,802	62,207	109,083	0
<b>Meter-Reading</b>	<b>683,171</b>	<b>8,594</b>	<b>1,219</b>	<b>205</b>	<b>257</b>	<b>0</b>
Monthly Cost per Cons	1.13	2.14	2.67	2.14	10.69	0.00
Average Cost per kWh	0.000854	0.000069	0.000143	0.000008	0.000007	0.000000
Cost per Metered kW		0.02	0.03	0.00	0.00	0.00
Cost per Billing kW		0.02	0.02	0.00	0.00	0.00
<b>Customer Records</b>	<b>2,943,912</b>	<b>17,717</b>	<b>2,010</b>	<b>423</b>	<b>2,644</b>	<b>0</b>
Monthly Cost per Cons	4.88	4.41	4.41	4.41	110.18	0.00
Average Cost per kWh	0.003681	0.000142	0.000236	0.000017	0.000070	0.000000
Cost per Metered kW		0.05	0.04	0.01	0.02	0.00
Cost per Billing kW		0.04	0.04	0.01	0.02	0.00
<b>Customer Service</b>	<b>1,152,088</b>	<b>7,532</b>	<b>854</b>	<b>180</b>	<b>45</b>	<b>0</b>
Monthly Cost per Cons	1.91	1.87	1.87	1.87	1.87	0.00
Average Cost per kWh	0.001440	0.000060	0.000100	0.000007	0.000001	0.000000
Cost per Metered kW		0.02	0.02	0.00	0.00	0.00
Cost per Billing kW		0.02	0.02	0.00	0.00	0.00
<b>Revenue</b>	<b>1,630,704</b>	<b>223,107</b>	<b>11,726</b>	<b>39,602</b>	<b>52,093</b>	<b>66,118</b>
Monthly Cost per Cons	2.70	55.50	25.71	412.52	2,170.54	5,509.84
Average Cost per kWh	0.002039	0.001782	0.001375	0.001582	0.001375	0.000000
Cost per Metered kW		0.57	0.26	0.68	0.48	0.00
Cost per Billing kW		0.49	0.23	0.64	0.48	0.00
<b>Total Expenses</b>	<b>92,161,329</b>	<b>11,573,965</b>	<b>486,223</b>	<b>2,148,464</b>	<b>2,676,592</b>	<b>1,749,764</b>
Monthly Cost per Cons	152.80	2,879.10	1,066.28	22,379.84	111,524.69	145,813.75
Average Cost per kWh	0.115222	0.092443	0.057014	0.085831	0.070641	0.000000
Cost per Metered kW		29.41	10.85	36.70	24.55	0.00
Cost per Billing kW		25.34	9.39	34.54	24.54	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Large Power	LP-TOU	LP Industrial	Contracts	Ft Huachuca
Average Consumers	50,263	335	38	8	2	1
kWh Sold	799,860,156	125,201,348	8,528,086	25,031,391	37,890,000	0
Metered kW		393,575	44,821	58,540	109,039	0
Billing kW		456,679	51,802	62,207	109,083	0
<b>System Demand</b>	<b>18,296,857</b>	<b>2,125,499</b>	<b>66,410</b>	<b>361,317</b>	<b>476,751</b>	<b>741,761</b>
Monthly Cost per Cons	30.34	528.73	145.64	3,763.72	19,864.64	61,813.42
Average Cost per kWh	0.022875	0.016977	0.007787	0.014435	0.012583	0.000000
Cost per Metered kW		5.40	1.48	6.17	4.37	0.00
Cost per Billing kW		4.65	1.28	5.81	4.37	0.00
<b>Total Customer</b>	<b>16,172,885</b>	<b>552,735</b>	<b>79,179</b>	<b>50,047</b>	<b>80,666</b>	<b>1,008,004</b>
Monthly Cost per Cons	26.81	137.50	173.64	521.32	3,361.07	84,000.33
Average Cost per kWh	0.020220	0.004415	0.009284	0.001999	0.002129	0.000000
Cost per Metered kW		1.40	1.77	0.85	0.74	0.00
Cost per Billing kW		1.21	1.53	0.80	0.74	0.00
<b>Pur Pwr-Demand</b>	<b>29,718,797</b>	<b>4,514,648</b>	<b>42,217</b>	<b>865,497</b>	<b>805,172</b>	<b>0</b>
Monthly Cost per Cons	49.27	1,123.05	92.58	9,015.60	33,548.83	0.00
Average Cost per kWh	0.037155	0.036059	0.004950	0.034576	0.021250	0.000000
Cost per Metered kW		11.47	0.94	14.78	7.38	0.00
Cost per Billing kW		9.89	0.81	13.91	7.38	0.00
<b>Pur Pwr Energy/Fuel</b>	<b>27,972,790</b>	<b>4,381,084</b>	<b>298,417</b>	<b>871,603</b>	<b>1,314,003</b>	<b>0</b>
Monthly Cost per Cons	46.38	1,089.82	654.42	9,079.20	54,750.15	0.00
Average Cost per kWh	0.034972	0.034992	0.034820	0.034820	0.034679	0.000000
Cost per Metered kW		11.13	6.66	14.89	12.05	0.00
Cost per Billing kW		9.59	5.76	14.01	12.05	0.00
<b>Total Expenses</b>	<b>92,161,329</b>	<b>11,573,965</b>	<b>486,223</b>	<b>2,148,464</b>	<b>2,676,592</b>	<b>1,749,764</b>
Monthly Cost per Cons	152.80	2,879.10	1,066.28	22,379.84	111,524.69	145,813.75
Average Cost per kWh	0.115222	0.092443	0.057014	0.085831	0.070641	0.000000
Cost per Metered kW		29.41	10.85	36.70	24.55	0.00
Cost per Billing kW		25.34	9.39	34.54	24.54	0.00

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Irrigation	Irrig-Daily	Irrig-Weekly	Irrig-Large	Total Irrig
Average Consumers	50,263	304	73	220	122	719
kWh Sold	799,860,156	54,045,765	10,581,835	32,780,060	35,167,187	132,574,847
Metered kW		225,515	38,710	119,961	106,805	490,991
Billing kW		233,576	55,568	163,086	0	452,230
<b>Demand-PurPwr-Gen</b>	<b>19,008,826</b>	<b>1,327,577</b>	<b>18,916</b>	<b>476,831</b>	<b>60,792</b>	<b>1,884,115</b>
Monthly Cost per Cons	31.52	363.92	21.59	180.62	41.52	218.37
Average Cost per kWh	0.023765	0.024564	0.001788	0.014546	0.001729	0.014212
Cost per Metered kW		5.89	0.49	3.97	0.57	3.84
Cost per Billing kW		5.68	0.34	2.92	0.00	4.17
<b>Demand-PurPwr-Del</b>	<b>10,709,971</b>	<b>752,006</b>	<b>10,715</b>	<b>270,101</b>	<b>34,435</b>	<b>1,067,257</b>
Monthly Cost per Cons	17.76	206.14	12.23	102.31	23.52	123.70
Average Cost per kWh	0.013390	0.013914	0.001013	0.008240	0.000979	0.008050
Cost per Metered kW		3.33	0.28	2.25	0.32	2.17
Cost per Billing kW		3.22	0.19	1.66	0.00	2.36
<b>Energy-PurPwr-Gen</b>	<b>26,120,592</b>	<b>1,764,314</b>	<b>345,442</b>	<b>1,070,099</b>	<b>1,148,026</b>	<b>4,327,880</b>
Monthly Cost per Cons	43.31	483.64	394.34	405.34	784.17	501.61
Average Cost per kWh	0.032656	0.032645	0.032645	0.032645	0.032645	0.032645
Cost per Metered kW		7.82	8.92	8.92	10.75	8.81
Cost per Billing kW		7.55	6.22	6.56	0.00	9.57
<b>Energy-PurPwr-Del</b>	<b>1,852,198</b>	<b>126,872</b>	<b>24,841</b>	<b>76,951</b>	<b>82,555</b>	<b>311,219</b>
Monthly Cost per Cons	3.07	34.78	28.36	29.15	56.39	36.07
Average Cost per kWh	0.002316	0.002347	0.002347	0.002347	0.002347	0.002347
Cost per Metered kW		0.56	0.64	0.64	0.77	0.63
Cost per Billing kW		0.54	0.45	0.47	0.00	0.69
<b>Dist-Substations</b>	<b>2,667,810</b>	<b>140,225</b>	<b>24,504</b>	<b>77,542</b>	<b>74,869</b>	<b>317,139</b>
Monthly Cost per Cons	4.42	38.44	27.97	29.37	51.14	36.76
Average Cost per kWh	0.003335	0.002595	0.002316	0.002366	0.002129	0.002392
Cost per Metered kW		0.62	0.63	0.65	0.70	0.65
Cost per Billing kW		0.60	0.44	0.48	0.00	0.70

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Irrigation	Irrig-Daily	Irrig-Weekly	Irrig-Large	Total Irrig
Average Consumers	50,263	304	73	220	122	719
kWh Sold	799,860,156	54,045,765	10,581,835	32,780,060	35,167,187	132,574,847
Metered kW		225,515	38,710	119,961	106,805	490,991
Billing kW		233,576	55,568	163,086	0	452,230
<b>Dist-Backbone</b>	<b>10,275,945</b>	<b>594,982</b>	<b>103,970</b>	<b>329,014</b>	<b>317,674</b>	<b>1,345,642</b>
Monthly Cost per Cons	17.04	163.10	118.69	124.63	216.99	155.96
Average Cost per kWh	0.012847	0.011009	0.009825	0.010037	0.009033	0.010150
Cost per Metered kW		2.64	2.69	2.74	2.97	2.74
Cost per Billing kW		2.55	1.87	2.02	0.00	2.98
<b>Dist-Demand</b>	<b>4,468,185</b>	<b>160,080</b>	<b>46,913</b>	<b>107,003</b>	<b>86,239</b>	<b>400,236</b>
Monthly Cost per Cons	7.41	43.88	53.55	40.53	58.91	46.39
Average Cost per kWh	0.005586	0.002982	0.004433	0.003264	0.002452	0.003019
Cost per Metered kW		0.71	1.21	0.89	0.81	0.82
Cost per Billing kW		0.69	0.84	0.66	0.00	0.89
<b>Dmd- Trans Plant</b>	<b>884,916</b>	<b>49,653</b>	<b>8,677</b>	<b>27,457</b>	<b>26,511</b>	<b>112,298</b>
Monthly Cost per Cons	1.47	13.61	9.90	10.40	18.11	13.02
Average Cost per kWh	0.001106	0.000919	0.000820	0.000838	0.000754	0.000847
Cost per Metered kW		0.22	0.22	0.23	0.25	0.23
Cost per Billing kW		0.21	0.16	0.17	0.00	0.25
<b>Dist-Customer</b>	<b>7,828,428</b>	<b>211,974</b>	<b>91,088</b>	<b>222,176</b>	<b>157,123</b>	<b>682,360</b>
Monthly Cost per Cons	12.98	58.11	103.98	84.16	107.32	79.09
Average Cost per kWh	0.009787	0.003922	0.008608	0.006778	0.004468	0.005147
Cost per Metered kW		0.94	2.35	1.85	1.47	1.39
Cost per Billing kW		0.91	1.64	1.36	0.00	1.51
<b>Distr. Meter</b>	<b>1,934,583</b>	<b>30,178</b>	<b>7,247</b>	<b>21,839</b>	<b>12,111</b>	<b>71,375</b>
Monthly Cost per Cons	3.21	8.27	8.27	8.27	8.27	8.27
Average Cost per kWh	0.002419	0.000558	0.000685	0.000666	0.000344	0.000538
Cost per Metered kW		0.13	0.19	0.18	0.11	0.15
Cost per Billing kW		0.13	0.13	0.13	0.00	0.16

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Irrigation	Irrig-Daily	Irrig-Weekly	Irrig-Large	Total Irrig
Average Consumers	50,263	304	73	220	122	719
kWh Sold	799,860,156	54,045,765	10,581,835	32,780,060	35,167,187	132,574,847
Metered kW		225,515	38,710	119,961	106,805	490,991
Billing kW		233,576	55,568	163,086	0	452,230
<b>Meter-Reading</b>	<b>683,171</b>	<b>7,799</b>	<b>1,873</b>	<b>5,644</b>	<b>3,130</b>	<b>18,446</b>
Monthly Cost per Cons	1.13	2.14	2.14	2.14	2.14	2.14
Average Cost per kWh	0.000854	0.000144	0.000177	0.000172	0.000089	0.000139
Cost per Metered kW		0.03	0.05	0.05	0.03	0.04
Cost per Billing kW		0.03	0.03	0.03	0.00	0.04
<b>Customer Records</b>	<b>2,943,912</b>	<b>79,541</b>	<b>3,861</b>	<b>11,635</b>	<b>161,303</b>	<b>256,340</b>
Monthly Cost per Cons	4.88	21.80	4.41	4.41	110.18	29.71
Average Cost per kWh	0.003681	0.001472	0.000365	0.000355	0.004587	0.001934
Cost per Metered kW		0.35	0.10	0.10	1.51	0.52
Cost per Billing kW		0.34	0.07	0.07	0.00	0.57
<b>Customer Service</b>	<b>1,152,088</b>	<b>6,835</b>	<b>1,641</b>	<b>4,946</b>	<b>2,743</b>	<b>16,166</b>
Monthly Cost per Cons	1.91	1.87	1.87	1.87	1.87	1.87
Average Cost per kWh	0.001440	0.000126	0.000155	0.000151	0.000078	0.000122
Cost per Metered kW		0.03	0.04	0.04	0.03	0.03
Cost per Billing kW		0.03	0.03	0.03	0.00	0.04
<b>Revenue</b>	<b>1,630,704</b>	<b>97,821</b>	<b>16,938</b>	<b>55,093</b>	<b>52,857</b>	<b>222,709</b>
Monthly Cost per Cons	2.70	26.81	19.34	20.87	36.10	25.81
Average Cost per kWh	0.002039	0.001810	0.001601	0.001681	0.001503	0.001680
Cost per Metered kW		0.43	0.44	0.46	0.49	0.45
Cost per Billing kW		0.42	0.30	0.34	0.00	0.49
<b>Total Expenses</b>	<b>92,161,329</b>	<b>5,349,856</b>	<b>706,625</b>	<b>2,756,331</b>	<b>2,220,368</b>	<b>11,033,180</b>
Monthly Cost per Cons	152.80	1,466.52	806.65	1,044.06	1,516.64	1,278.76
Average Cost per kWh	0.115222	0.098988	0.066777	0.084086	0.063137	0.083222
Cost per Metered kW		23.72	18.25	22.98	20.79	22.47
Cost per Billing kW		22.90	12.72	16.90	0.00	24.40

**ARIZONA CORPORATION COMMISSION  
SSVEC EXISTING RATES - Staff Adjusted  
DOCKET NO. E-01575A-08-0328 - TY 12-31-07  
Summary of Components of Expenses**

Accounts	Total	Irrigation	Irrig-Daily	Irrig-Weekly	Irrig-Large	Total Irrig
Average Consumers	50,263	304	73	220	122	719
kWh Sold	799,860,156	54,045,765	10,581,835	32,780,060	35,167,187	132,574,847
Metered kW		225,515	38,710	119,961	106,805	490,991
Billing kW		233,576	55,568	163,086	0	452,230
<b>System Demand</b>	<b>18,296,857</b>	<b>944,940</b>	<b>184,064</b>	<b>541,017</b>	<b>505,294</b>	<b>2,175,314</b>
Monthly Cost per Cons	30.34	259.03	210.12	204.93	345.15	252.12
Average Cost per kWh	0.022875	0.017484	0.017394	0.016504	0.014368	0.016408
Cost per Metered kW		4.19	4.75	4.51	4.73	4.43
Cost per Billing kW		4.05	3.31	3.32	0.00	4.81
<b>Total Customer</b>	<b>16,172,885</b>	<b>434,148</b>	<b>122,647</b>	<b>321,334</b>	<b>389,267</b>	<b>1,267,395</b>
Monthly Cost per Cons	26.81	119.01	140.01	121.72	265.89	146.89
Average Cost per kWh	0.020220	0.008033	0.011590	0.009803	0.011069	0.009560
Cost per Metered kW		1.93	3.17	2.68	3.64	2.58
Cost per Billing kW		1.86	2.21	1.97	0.00	2.80
<b>Pur Pwr-Demand</b>	<b>29,718,797</b>	<b>2,079,582</b>	<b>29,632</b>	<b>746,931</b>	<b>95,227</b>	<b>2,951,372</b>
Monthly Cost per Cons	49.27	570.06	33.83	282.93	65.05	342.07
Average Cost per kWh	0.037155	0.038478	0.002800	0.022786	0.002708	0.022262
Cost per Metered kW		9.22	0.77	6.23	0.89	6.01
Cost per Billing kW		8.90	0.53	4.58	0.00	6.53
<b>Pur Pwr Energy/Fuel</b>	<b>27,972,790</b>	<b>1,891,186</b>	<b>370,283</b>	<b>1,147,050</b>	<b>1,230,581</b>	<b>4,639,099</b>
Monthly Cost per Cons	46.38	518.42	422.70	434.49	840.56	537.68
Average Cost per kWh	0.034972	0.034992	0.034992	0.034992	0.034992	0.034992
Cost per Metered kW		8.39	9.57	9.56	11.52	9.45
Cost per Billing kW		8.10	6.66	7.03	0.00	10.26
<b>Total Expenses</b>	<b>92,161,329</b>	<b>5,349,856</b>	<b>706,625</b>	<b>2,756,331</b>	<b>2,220,368</b>	<b>11,033,180</b>
Monthly Cost per Cons	152.80	1,466.52	806.65	1,044.06	1,516.64	1,278.76
Average Cost per kWh	0.115222	0.098988	0.066777	0.084086	0.063137	0.083222
Cost per Metered kW		23.72	18.25	22.98	20.79	22.47
Cost per Billing kW		22.90	12.72	16.90	0.00	24.40