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BEFORE THE ARIZONA CORPORATION COMMISSION
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AZ CORP COMMISSION
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7
8 IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY
9 FOR THE ESTABLISHMENT OF JUST AND
REASONABLE RATES AND CHARGES
10 DESIGNED TO REALIZE A REASONABLE
RATE OF RETURN ON THE FAIR VALUE
11 OF ITS OPERATIONS THROUGHOUT THE
STATE OF ARIZONA

Docket No. E-01933A-07-0402

Arizona Corporation Commission
DOCKETED

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13 IN THE MATTER OF THE FILING BY
TUCSON ELECTRIC POWER COMPANY
14 TO AMEND DECISION NO. 62103.

Docket No. E-01933A-05-0650

15
16 **NOTICE OF FILING TESTIMONY**

17
18 The Residential Utility Consumer Office ("RUCO") hereby provides notice of filing the
19 Cost of Service and Rate Design Testimony of Glen E. Gregory, in the above-referenced
20 matter.

21 RESPECTFULLY SUBMITTED this 14th day of March 2008

22
23
24 Scott S. Wakefield
Chief Counsel

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3 of March 2008 with:

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TUCSON ELECTRIC POWER COMPANY

DOCKET NO. E-01933A-07-0402

DOCKET NO. E-01933A-05-0650

**COST OF SERVICE AND RATE DESIGN TESTIMONY
OF
GLEN E. GREGORY**

**ON BEHALF OF
THE
RESIDENTIAL UTILITY CONSUMER OFFICE**

MARCH 14, 2008

Table of Contents

WITNESS IDENTIFICATION AND PURPOSE OF TESTIMONY 3

CLASS COST OF SERVICE STUDY 6

REVENUE ALLOCATION TO THE CLASSES..... 12

RESIDENTIAL RATE DESIGN 14

MISCELLANEOUS SERVICE CHARGES 25

Schedules

Schedule GEG-01RUCO Class Cost of Service Summary

Schedule GEG-02..... Typical Residential Bill Analysis

Schedule GEG-03.....Proof of Residential Rate Design and Revenue

Appendix A Resume of Glen Gregory

WITNESS IDENTIFICATION AND PURPOSE OF TESTIMONY

1 **Q: Please state your name and business address.**

2 A: My name is Glen E. Gregory and my business address is 211 North Robinson
3 Avenue, Suite 340, Oklahoma City, Oklahoma 73102.

4

5 **Q: What is your occupation?**

6 A: I am an independent consultant specializing in public utility issues, such as
7 cost of capital, cost of service, and rate design.

8

9 **Q: On whose behalf are you appearing in these proceedings?**

10 A: I am appearing on behalf of the Residential Utility Consumer Office ("RUCO").
11 The Residential Utility Consumer Office was established by the Arizona
12 Legislature in 1983 to represent the interests of residential utility ratepayers in
13 rate-related proceedings involving public service corporations before the
14 Arizona Corporation Commission ("ACC" or "Commission").

15

16 **Q: Please describe your educational and professional qualifications.**

17 A: My educational qualifications consist of a Bachelor of Arts degree from the
18 University of Oklahoma and a Masters of Arts in Economics from the
19 University of Oklahoma. I also hold the professional designation Certified Rate

1 of Return Analyst ("CRRA") as conferred by the Society of Utility and
2 Regulatory Financial Analyst of which I have been a member since 1996. This
3 designation is awarded based upon experience and successful completion of a
4 written examination.

5 As regards to my professional experience, I was employed by the Oklahoma
6 Corporation Commission for over 20 years in a supervisory position. My
7 employment within the Commission's Public Utilities Division involved me in a
8 variety of tasks dealing with economic and financial analysis and related
9 research. My primary responsibilities included preparation of reports or
10 testimony regarding cost allocation, rate design, cost of equity estimates,
11 competitive bidding processes, and a variety of other energy-related and
12 regulatory issues. I was also very active in the supervision and training of
13 others in the abovementioned areas. My principal areas of concentration
14 were with electric utility and gas utility regulation. Since leaving the
15 Commission in July of 2003, I have worked on various rate and regulatory
16 matters on behalf of utility customers, municipalities, and the Attorney General
17 of Oklahoma. A partial list of testimony given before the Oklahoma
18 Corporation Commission is contained in my resume, which is attached to the
19 end of my testimony as Appendix A.

20
21 **Q: Have you testified previously before the Arizona Corporation Commission in**
22 **proceedings concerned with cost-of-service and rate design issues?**

1 A: No. This is my first appearance before the Arizona Corporation Commission.

2

PURPOSE OF TESTIMONY

3 Q: What is the purpose of your testimony in this proceeding?

4 A: The purpose of this testimony is to address class cost of service ("CCOS")
5 revenue allocation and rate design issues on behalf of the Residential Utility
6 Consumer Office. In this testimony, I will discuss Tucson Electric Power
7 Company's ("TEP") class cost of service and allocations and will make
8 appropriate recommended changes to cost allocation methods. I will review
9 TEP's proposals related to the allocation of TEP's requested increases to
10 various customer classes and make appropriate recommendations. I will
11 review TEP's proposed rate design and recommend appropriate changes.

12

13 Q: Why are rate design and cost of service issues important to the Residential
14 Utility Consumer Office?

15 A: The rate design issues are especially important to RUCO in this case given
16 the magnitude of TEP's requested revenue increase along with TEP's
17 proposed residential rate design changes. TEP's proposed residential rate
18 design changes, even without a revenue increase, would result in significant
19 changes in cost recovery from the various residential customers. The TEP
20 cost of service study is of interest to RUCO in that its conclusions will be

1 considered by the ACC in the determination of rates to the various classes
2 and rate structures within the classes.

3
4 **CLASS COST OF SERVICE STUDY**

5
6 **PRODUCTION COST**

7 **Q: What allocation method did TEP use to allocate production costs?**

8 **A:** TEP advocates the use of the Average and Peaks demand method for the
9 allocation of production capacity cost. The version of the Average and Peaks
10 method used by TEP is the "4CP & Average" method which incorporates class
11 summer months' ("June to September") coincidental peaks ("CP") to calculate
12 the demand component.

13
14 **Q: Briefly describe the average and peaks method.**

15 **A:** The Average and Peaks method is just one of many methods that can used to
16 allocate production capacity cost. This method was accepted by the ACC in
17 the recent Arizona Public Service Company rate case decision. This 4CP &
18 Average method appropriately considers production plant planning decisions in
19 that it takes into account both system peaks and energy use in the
20 classification and allocation productions costs. The 4CP component recognizes
21 that the utility must build or have access to capacity to meet peak demand on
22 the system, while the energy (average) component recognizes that utilities also

1 build more expensive intermediate and baseload generation plants that run
2 through a greater portion of the year to save on fuel costs. The average
3 component can be thought of as the intermediate and baseload capacity
4 allocator, while the peak component can be thought of as the peaking capacity
5 allocator.

6
7 **Q: What is the difference between TEP's Average and Peaks allocator and the**
8 **calculation of the average and peaks as presented in the NARUC Cost of**
9 **Service Manual?**¹

10 **A:** The Average and Peaks calculation in the NARUC Manual considers average
11 demand in its derivation of the average demand component of the average and
12 peaks method. The Average and Peaks method supported by TEP refines the
13 average demand component by recognizing the system load factor in the
14 calculation of average demand. The method used by TEP also considers 4
15 summer peaks instead of the single highest coincident peak.

16
17 **Q: Do you believe that the use of the Average and Peaks method to allocate**
18 **production capacity on the TEP system is appropriate?**

19 **A:** Yes. The TEP Average and Peaks method is a very acceptable method for
20 allocating production capacity costs. It becomes even more appropriate if

¹ Electric Utility Cost Allocation Manual, National Association of Regulatory Utility
Commissioners,(Washington D.C). January, 1992.

1 the energy allocation is based on energy use by class by time of day and
2 by season, adjusted for the average variable cost during the respective
3 periods as was done by TEP. Their energy factor reflects that consumption
4 during the peak periods of the summer is more costly than an equal amount
5 of consumption during the off-peak winter periods. While no production
6 capacity allocation method balances all cost considerations and issues, the
7 TEP supported Average and Peaks method in conjunction with the TEP
8 supported cost weighted energy allocation factor does consider the
9 differences between base load and peaking load costs for utilities with a
10 seasonal system load.

11
12 **TRANSMISSION COST**

13
14 **Q: How has TEP allocated transmission plant and cost?**

15 **A:** TEP advocates the use of the 4CP summer peak demand and average method
16 for the allocation of transmission plant and costs.

17
18 **Q: What are your comments regarding the use of the 4CP and Average method to**
19 **allocate transmission plant and costs to the various customer classes?**

20 **A:** The 4CP and Average method recognizes that a utility installs sufficient
21 transmission facilities to maintain stable levels of reliability throughout the
22 year. The 4CP component gives consideration to the fact that TEP is a summer

1 peaking utility. Use of only the 4CP component would suggest that
2 transmission plant is only built and managed to meet the peak load of the
3 system. The decision to build transmission plant should be focused on the
4 ability to deliver energy at the maximum peak without regard to the source of
5 generation or supply. However, transmission plant is related to the size, type
6 of and location of generation units and of course large baseload plants require
7 greater transmission capacity than smaller peaking plants. The 4CP
8 component or other purely peak methods are limited in that they do not
9 consider the fact that a utility installs transmission facilities to maintain stable
10 levels of reliability throughout the year. The Average component recognizes
11 that the transmission plant is built to be used all year around. I recommend
12 that the ACC approve the use of the 4CP and Average method as filed by TEP
13 to allocate transmission plant and related transmission costs to the various
14 classes and customer groups.

15
16 **Q: What other methods could be used to allocate transmission plant and costs?**

17 **A:** Another method that uses all 12 months of the year that could be used is the
18 12CP allocation method. The 12CP method has been used extensively by the
19 FERC and also recognizes that a utility installs transmission facilities to
20 maintain stable levels of reliability throughout the year. Both the 12CP
21 method and the 4CP and Average method recognize that transmission plant is
22 used throughout the year. However, I believe the 4CP and Average method

1 may be preferable to the 12CP method in a state like Arizona that has summer
2 peak demand as this summer peak is recognized by the use of the summer's
3 4CPs. The Average of course recognizes that the transmission plant is built to
4 be used all year around.

5

6 **Q: Did you find it necessary to change any of the allocators in the TEP CCOS?**

7 **A:** Yes. TEP's CCOS allocated the following other revenue accounts by Sales
8 Revenue from the various classes;

- 9 a. Account 450 Forfeited discounts,
10 b. Account 451 miscellaneous service revenue,
11 c. Account 454 Rent from electric property,
12 d. Account 456 Other electric revenues.
13

14 The first of these two accounts are more customer specific related. In my
15 experience forfeited discounts (450) for the most part come from residential
16 and small commercial customers; the same holds even more factual for
17 miscellaneous service revenue (451). Therefore I have allocated the current
18 revenue and new proposed revenue from these accounts by the customer
19 count allocator.

20 Rent from electric property (454) is mostly pole rental and is more
21 properly allocated by the allocator used to distribute the cost of distribution
22 poles. That is what I used to allocate these rents. The other electric revenues
23 (456) are more energy related. Therefore, I used the energy production
24 allocator.

1

2 **Q: Have you prepared a class cost of service study?**

3 **A:** Yes. I have prepared a class cost of service study which reflects the results
4 of the RUCO Accounting Exhibits. This class cost of service study was
5 prepared using the TEP class cost of service software program. In addition to
6 matching the RUCO Accounting Exhibits, I also made the adjustments to the
7 cost allocations that I previously discussed in this testimony.

8

9 **Q: What are the current returns for the different major rate classes as shown by**
10 **your class cost of service study?**

11 **A:** The current returns are summarized in Table 1. The detail of the derivation of
12 the current customer class returns are shown on Schedule GEG-01 attached to
13 this testimony.

14

15

Table 1

16

Rates of Return by Major Class Categories

Customer Class	Rate of Return
Residential	2.70%
Commercial	15.08%
Industrial	-3.59%
Mines	-29.76%
Lighting	2.59%
Public Authority	-3.99%
Total TEP	5.43%

17

1

2 **Q: Have you attached a summary of your proposed class cost of service study?**

3 A: Yes. The rate base, operating income, rate of return and relative rate of return
4 and other information regarding the six major classes are summarized on my
5 Schedule GEG-01.

6

7

REVENUE ALLOCATION TO THE CLASSES

8

9 **Q: Please discuss your recommendation for allocation of the base revenue**
10 **increase supported by RUCO witness Rodney Moore.**

11 A: The RUCO proposal is to accept the proposed allocation percentage of any
12 increase to base rates of the various classes as proposed by TEP witness
13 Bentley Erdwurm adjusted of course to the ACC approved revenue
14 requirement. Using the RUCO recommended revenue requirement, this
15 would result in the class revenue increases as shown in Table 2.

16

17

18

19

20

21

22

1
2
3

Table 2

(Allocation of Base Revenue Increase)

Base Rates	Residential	Commercial	Industrial	Mines	Lighting	Public Authority	TOTAL
Allocation %	45.55%	37.90%	8.57%	5.15%	0.67%	2.17%	100.00%
Present	\$307,535,130	\$274,527,876	\$53,836,878	\$37,790,355	\$4,077,303	\$13,683,888	\$691,451,429
Proposed	\$322,924,533	\$287,331,111	\$56,732,432	\$39,528,967	\$4,302,332	\$14,416,710	\$725,236,086
\$ Difference	\$15,389,403	\$12,803,236	\$2,895,555	\$1,738,613	\$225,029	\$732,822	\$33,784,657
% Difference	5.00%	4.66%	5.38%	4.60%	5.52%	5.36%	4.89%
Total Increase							\$36,254,000
Less	Late Payment Revenue and Other Revenue Increases						\$2,469,343
Net Base Rate Increase							\$33,784,657

4
5
6 This rate spread does provide some limited movement toward strict cost-of-
7 service. It is also important to note that the residential rate restructure as
8 proposed by RUCO will significantly modify the current rate structure.
9 RUCO's proposed rate structure will result in proportionately larger bill
10 increases for higher users of electricity and on-peak users than for the
11 average user and low users of electricity. This proposed restructure of the
12 residential class tariffs will place more responsibility for summer peak usage
13 on the residential customers. This restructure of the residential class tariffs
14 will mean that many residential customers will experience base rate
15 increases greater than the residential class average increase as proposed

1 above. Also the ACC should consider that the restructure of the residential
2 class tariffs if successful in its concept should lead to a lessening of the
3 relative percentage of summer peaks assigned to the residential class in
4 future periods.

5
6 **RESIDENTIAL RATE DESIGN**

7
8 **Q: What are the primary changes in the residential rates proposed by TEP?**

9 A: The most significant change (other than a substantial overall revenue increase)
10 proposed by TEP is to place more of the residential portion of the Company's
11 proposed rate increase on the larger usage residential customers for both
12 summer rates and to a lesser degree winter rates. TEP has proposed two
13 major changes (1) the standard residential rates proposed by TEP will include
14 the introduction of an inverted block structure (summer and winter) and (2)
15 new customers to the system will be placed on mandatory time-of-use rates.

16
17 **Q: Is it appropriate to allocate energy cost in rate pricing to reflect how the use of
18 energy affects the cost incurred by TEP?**

19 A: Yes. Cost allocations and corresponding rates that reflect time-of-day and
20 seasonal cost patterns can improve the efficiency of use of TEP's power
21 supplies, thereby lowering the cost of energy for all customers. Carefully
22 designed time-of-use rates (and, to a lesser extent, inverted block rates) should

1 result in lower overall system energy costs if consumption of energy is
2 increased during the lower usage (off-peak) periods and consumption is
3 reduced during the higher usage (peak) periods. The optimal result would be a
4 more constant demand for energy across seasons and times of the day. This
5 outcome should not force customers to substantially reduce the amount of
6 energy needed to perform the desired work such as clothes drying, cooking, air
7 conditioning etc.

8
9 **Q: Do you believe the residential time-of-use rate designs proposed by TEP can**
10 **achieve this result?**

11 **A:** Most of TEP's residential customers currently are billed on electricity rates that
12 have minimal relation to the true production cost of electricity as it varies over
13 time. The residential time-of-use rates proposed by TEP can give the
14 customers the opportunity to benefit if they can shift usage from higher cost
15 "on-peak" periods to "off-peak" periods. I believe the Company's efforts to
16 design residential time-of-use rates and assign costs over multiple windows of
17 usage is an important step. A significant financial incentive is needed if
18 customers are expected to adjust their electricity usage patterns. The
19 residential time-of-use rates should contain a pricing differential sufficient to
20 motivate customers to adjust their electricity usage patterns.

21
22 **Q: Do you have any comments on the TEP recommended time-of-use periods?**

1 A: TEP has proposed for Pricing Plan R-70N the Summer period (May-October)
2 peak be from 2 p.m. to 6 p.m. with a shoulder-peak period on either side of
3 the peak period of 12 noon to 2 p.m. and 6 p.m. to 8 p.m., resulting in a
4 total of eight hours in the shoulder and peak periods. Sixteen hours of each
5 summer day are considered off-peak. This structure is quite complicated but
6 it does have merit. The limited four hour peak periods should give customers
7 greater ability to shift loads that they might use during peak periods to the
8 shoulder-peak period. As examples, customers could delay the use of
9 dishwashers and clothes washers or dryers until after 6 p.m. or even to the
10 off-peak hour of 8 p.m. Therefore I can support the use of the Summer time
11 periods proposed by TEP.

12 TEP has proposed that the Winter period (November-April) consist of a
13 morning peak of 6 a.m. to 10 a.m. and an evening peak 5 p.m. to 9 p.m.
14 resulting in a total of eight hours per day of Winter on-peak. Sixteen hours of
15 each winter day are considered off-peak. The winter time periods, while not
16 as important as the summer months' time periods can, also be supported for
17 similar reasons.

18
19 **Q: Do you believe that residential time-of-use rates alone will lead to substantial**
20 **changes in residential usage patterns?**

21 A: No. Residential customers represent a special challenge for time-of-use based
22 rates. Residential customers will need assistance to become familiar with

1 technologies that can facilitate effective energy management, such as
2 programmable thermostats and direct load controllers. In addition, TEP will
3 need to vigorously pursue education and outreach programs on behalf of the
4 residential customers if increased efficiency on the system is to be obtained.

5
6 **Q: What are your recommended modifications to the residential time-of-use rates**
7 **as proposed by TEP?**

8 A. My primary modification involves reducing the charges to match the
9 substantially reduced revenue requirement as recommended by RUCO. I have
10 attempted to make these lesser charges still provide sufficient financial
11 incentives for customers to change usage patterns and benefit from the time-
12 based rates.

13 Another modification that is important was to reduce the total increase
14 to R-70N time-of-use customers to a little less than the system average for the
15 residential class. The reason this is important is that if new residential
16 customers are placed on time-of-use rates it is unlikely that their usage
17 patterns will be the same as the existing time-of-use customers. This is
18 because participation in the current time-of-use program is entirely voluntary,
19 so it would be expected that the current customers have adjusted their usage
20 patterns and installed equipment that allow them to benefit from time-of-use
21 rates. The rates for the new customers should be kept as low as possible in
22 the beginning to facilitate customer acceptance. I have also recommended a

1 lower overall average kWh charge for the new time-of-use rate customer as
2 compared to the standard residential rate customer. However, I would point
3 out that the summer on-peak period hourly charge per kWh will be about 50%
4 more than the charge for the same period for standard residential rate.

5

6 **Q: Would the TEP proposed residential time-of-use tariffs with the reduced prices**
7 **that you have recommended provide residential customers the incentive to**
8 **respond to the increasing peak energy cost?**

9 **A:** Yes. The rates will be much less than TEP has proposed but the incentive
10 between charges will be approximately the same. This differential will provide
11 customers with significant financial incentives to shift load to the off-peak and
12 shoulder-peak hours.

13

14 **Q: Do you agree with TEP's proposal to make the residential time-of-use rates**
15 **mandatory for all new customers?**

16 **A:** Yes. TEP currently has few residential time-of-use customers. Carefully
17 developed residential time-of-use rates have the potential to reduce summer
18 peak costs to the utility which in turn will benefit all customers. Arizona
19 Public Service Company has a majority of their residential customers on time-
20 of-use rates and I understand that time-of-use rates have significantly reduced
21 the utility peak load requirements. The mandatory new account aspect of the
22 TEP proposal is crucial if the residential time-of-use rates are expected to result

1 in significant load shifting which should in turn lead to more efficient capital
2 investment and power purchases, and lower electric bills for all customers.

3
4 **Q: Does RUCO recommend any exceptions to placement of all new customers on**
5 **the mandatory residential time-of-use rates?**

6 **A:** Yes, but only in limited circumstances. At the time a new customer requests
7 service, TEP's customer service representatives should be required to pose a
8 series of questions to the customer to determine if the customer had special
9 circumstances that would result in time-of-use rates creating a severe hardship.
10 The most obvious example would be persons dependent on life support
11 equipment, or other medical conditions that would prevent the customer from
12 shifting their usage. Certainly any customer that meets part (b) of Pricing Plan
13 R-08 (Residential Lifeline/Medical Life-Support Discount) should be given the
14 option of service under the standard rate plan R-01. Also as a standard
15 practice the customer service representatives should ascertain if the new
16 customer is eligible for TEP's Pricing Plan R-06 (residential Lifeline Discount)
17 which allows qualified customers to receive a discount of \$8.00 per month off
18 of their bill. And of course it should be expected that TEP customer
19 representatives will be able to explain to customers the reasons for the time-of-
20 use rates and explain to customers the financial incentives and potential cost
21 savings available from changing usage patterns.

1 Q: TEP has also proposed changes to their other residential time-of-use pricing
2 plans. Do you have any comments regarding these pricing plans?

3 A: These plans are part of existing pricing plan R-201. This tariff consists of
4 three difference plans called option A, B, and C. Option B and C are currently
5 time-of-use rates. Option A is not.

6 Option A will become a time-of-use plan similar to the proposed R-70N. The
7 primary difference is that the rate blocks will be divided into three seasons
8 rather than the two seasons for R-70N. The seasons will be Mid-Summer
9 (June-August), Winter (November-April) and Remaining Summer (May,
10 September and October). These seasons correspond with the existing seasons
11 for Option A.

12 Options B & C currently have the same three seasons as Option A. Option
13 B & C currently have time-of-use blocking structures across the hours of the
14 day very similar to what has been proposed by TEP for pricing plan R-70N. The
15 major difference proposed by TEP is the continuation of the three seasons and
16 some differences in the energy charges. I have made the same changes for
17 these rates as the other residential rates, that is a lower customer charge and
18 lower energy charges to meet the RUCO recommended reduced revenue
19 requirement for the residential classes.

20

1 Q: Do you believe the summer inverted block rate proposed by TEP will lead
2 customers on the standard residential rates (R-01) to reduce air conditioning
3 and other peak time demands?

4 A: The inverted block will send customers a more realistic price signal that air
5 conditioning and other types of loads that contribute to the system peak load
6 are expensive to serve. However, since it remains a non-time oriented average
7 cost rate, customers will not have financial incentives to shift load away from
8 peak. Thus, the value of the inverted block structure will be somewhat limited.
9 The inverted rate will, however, more fairly charge customers who desire
10 greater amounts of air conditioning. Likewise, customers using less air
11 conditioning will not be required pay so much of the cost increases as
12 compared to customers using greater than average amounts of air conditioning.

13
14 Q: Please discuss your recommendation regarding the TEP proposed residential
15 customer charge.

16 A: TEP has proposed increasing the basic residential customer charge from the
17 current \$4.90 per month to \$9.00. RUCO recommends increasing the
18 customer charge from \$4.90 per month to \$6.50 per month, an increase of
19 \$1.60 per month. This \$6.50 per month charge should recover those
20 "minimum fixed expenses" associated with a customer even if the customer
21 does not use energy for a given month. Generally, the customer charge
22 should recover the Company's investment cost for meters and the service

1 lines as well as their related operations and maintenance expenses.
2 Customer accounting expenses such as meter reading, billing and accounting
3 should be included. I believe the \$6.50 charge is sufficient to recover these
4 costs from the average residential customer.

5
6 **Q: Are there other reasons to keep the customer charge to a minimum?**

7 **A:** Yes. Given the summer peaking nature of the TEP system, RUCO accepts
8 the concept that air conditioning loads are more expensive to serve during
9 peak periods and therefore should be priced accordingly. Customers who
10 choose to use less energy for air conditioning should not be required to pay
11 for the costs created by those who use substantially greater amounts of
12 energy related to air conditioning. A larger-than-needed customer charge
13 reduces the energy charge needed to meet the Company's revenue
14 requirement. If the customer charge covers a substantial portion of the
15 revenue increase, low usage customers such as described above may see a
16 percentage increase in their bills substantially greater than the higher usage
17 customers.

18
19 **Q: Will your proposed \$6.50 residential customer charge achieve the purpose of**
20 **preventing undesired greater-than-average increases to low usage**
21 **customers?**

1 A: Yes, in conjunction with the lower priced 1st 500 kWh usage block as
2 proposed by TEP and the lower overall revenue requirement supported by
3 RUCO, customers who use lower levels of energy will see a reduction in their
4 monthly bills. This is illustrated in my Schedule GEG-02, which is a typical
5 bill analysis for Residential Rate R-01 customers.

6

7 **Q: Please discuss your recommendation regarding the bundled (kWh) charges as**
8 **proposed by TEP.**

9 A: As I have discussed elsewhere in this testimony, I have accepted the basic
10 residential rate structure as proposed by TEP. However, the RUCO
11 recommended revenue requirement is substantially less than that proposed
12 by TEP. This will require an adjustment to the bundled energy charges as
13 filed by TEP. I recommend that each of the residential energy charges as
14 proposed by TEP be adjusted downward (after taking into account the
15 customer charge reduction of \$2.50 from that proposed by TEP) to meet the
16 residential share (45.5%) of the ACC allowed base revenue increase.

17

18 **Q: Have you prepared a schedule presenting proof of your recommended revenue**
19 **for the residential class?**

20 A: I have developed a proof of revenue that will produce RUCO's recommended
21 revenue for the residential classes. This proof of revenue with the
22 recommended residential rate design can be found on Schedule GEG-03. I

1 addressed the allocation of revenue increases to the other classes previously;
 2 however, I have left it to the representatives of the commercial, industrial and
 3 public authority representatives, and the Utility Division Staff to address and
 4 make more specific rate design recommendations for the classes other than
 5 residential.

6

7 **Q: Have you prepared any analysis representing the financial impact of RUCO's**
 8 **residential revenue allocation?**

9 **A: Yes Table 3 below shows the total revenue change to the various TEP**
 10 **residential rate codes.**

11 **Table 3**

12 **Comparisons of Residential Revenues by Rate Schedules Present and Proposed Rates**
 13

Class	Current Rate Code	Current Base Revenue	Proposed Base Revenue	Proposed Increase	Increase %
Residential Service	R-01 Frozen	\$292,343,756	\$307,683,024	\$15,339,268	5.25%
Residential Water Heating - Frozen	R-02	312,336	\$319,066	6,730	2.15%
Residential Time of Use	R-21 transferred To R-70N	3,452,108	\$3,531,561	79,453	2.30%
Residential Time of Use	R70 becomes R-70N	4,493,407	\$4,449,655	-43,752	-0.97%
Special Residential Electric Service	R-201AF,R-201BN,R-201CN	6,933,524	\$6,942,585	9,061	0.13%
Total Residential Revenues		\$307,535,131	\$322,925,890	\$15,390,760	5.00%

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Table 4

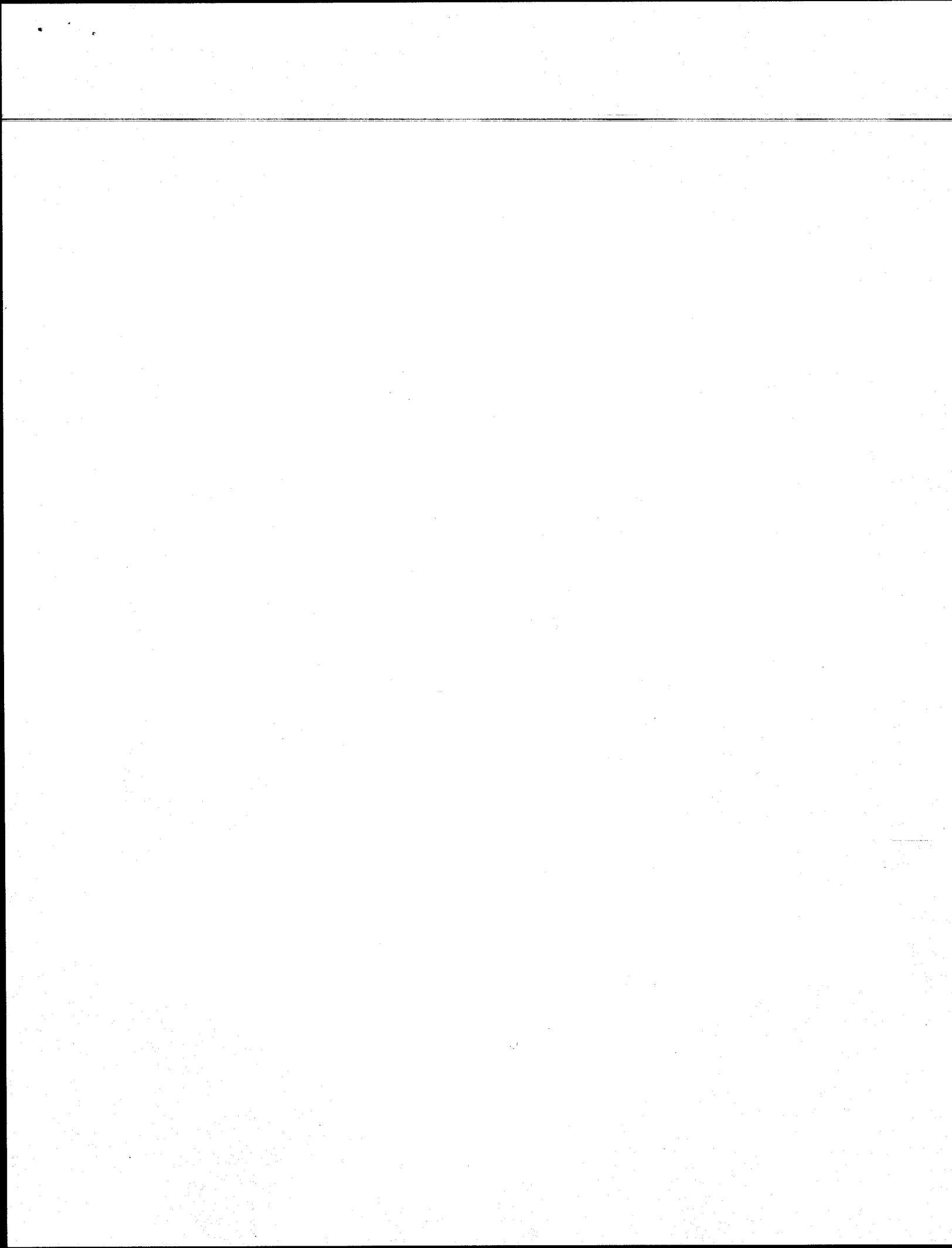
Comparisons of Service Revenues by Fees Present and Proposed Fees

Line	SERVICE REVENUES	TY Fees	TY Revenue	Units	Proposed Fees	TY Revenue Impact	
1	Establishment/Re-establishment of Service, service read only	\$13.50	\$1,278,990	94,740	11	\$13.50	\$0
2	-Regular Working Hours						
3	Establishment of Service Connect or Reconnect under usual operating procedures	\$13.50	\$906,255	67,130		\$22.00	\$570,605
4	-Regular Working Hours						
5	Establishment of Service Connect or Reconnect under usual operating procedures	\$35.00	\$282,590	8,074		\$51.00	\$129,184
6	-all hours other than Regular Working Hours						
7	Establishment of Service Connect or Reconnect under usual operating procedures	\$13.50	\$53,042	3,929		\$71.00	\$225,918
8	-Regular Working Hours - Three Phase Metering						
9	Establishment of Service Connect or Reconnect under usual operating procedures	\$35.00	\$3,605	103		\$198.00	\$16,789
10	-all hours other than Regular Working Hours - Three Phase Metering						
11	Customer Requested Meter Rereads	\$10.00	\$1,000	100.00		\$13.00	\$300
12	Late Fee	not applied		1,524,986		1.5%	\$1,524,986
13	Metering Field Test	\$40.00	\$600	15		\$144.00	\$1,560
14	TOTAL TY ACTIVITY AND ADJUSTMENT TO SERVICE REVENUES		\$2,526,082				\$2,469,342

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Q: Does this conclude your direct testimony?

A: Yes, it does.



**SUMMARY OF CLASS COST OF SERVICE AND
PROPOSED REVENUE ALLOCATION TO CLASSES**

	TOTAL	Residential	Commercial	Industrial	Mines	Lighting	Public Authority
RATE BASE	\$935,976,517	\$480,254,000	\$337,617,525	\$49,296,694	\$35,602,979	\$9,762,941	\$23,442,379
OPERATING INCOME	\$50,843,841	\$12,971,419	\$50,923,748	(\$1,772,177)	(\$10,596,908)	\$252,525	(\$934,766)
RATE OF RETURN (PRES RATES)	5.43%	2.70%	15.08%	-3.59%	-29.76%	2.59%	-3.99%
INDEX RATE OF RETURN (PRESENT)	1.00	0.50	2.78	-0.66	-5.48	0.48	-0.73
CURRENT BASE REVENUES	\$691,451,429	\$307,535,130	\$274,527,876	\$53,836,878	\$37,790,355	\$4,077,303	\$13,683,888
OTHER OPERATING REVENUE	\$205,760,263	\$94,173,488	\$74,416,418	\$17,877,822	\$14,245,516	\$709,617	\$4,337,401
TOTAL AVAILABLE REVENUE	\$897,211,693	\$401,708,618	\$348,944,294	\$71,714,700	\$52,035,871	\$4,786,921	\$18,021,289
PROPOSED BASE REVENUES	\$725,236,086	\$322,924,533	\$287,331,111	\$56,732,432	\$39,528,967	\$4,302,332	\$14,416,710
PROPOSED OTHER OPER REVENUE	\$208,229,606	\$96,025,495	\$75,033,754	\$17,877,822	\$14,245,516	\$709,617	\$4,337,401
TOTAL PROPOSED ANNUAL REVENUE	\$933,465,693	\$417,098,021	\$361,747,530	\$74,610,254	\$53,774,483	\$5,011,950	\$18,754,111
INCREASE TO BASE RATES	\$33,784,657	\$15,389,403	\$12,803,236	\$2,895,555	\$1,738,613	\$225,029	\$732,822
BASE RATE PERCENT INCREASE	4.89%	5.00%	4.66%	5.38%	4.60%	5.52%	5.36%
INCREASE OTHER OPER REVENUE	\$2,469,343	\$2,209,367	\$213,430	\$86	\$12	\$38,465	\$7,983
TOTAL INCREASE TO RATES	\$36,254,000	\$17,598,771	\$13,016,665	\$2,895,641	\$1,738,625	\$263,494	\$740,805
TOTAL REVENUE PERCENT INCREASE	4.04%	4.38%	3.73%	4.04%	3.34%	5.50%	4.11%

Schedule GEG-02

TYPICAL RESIDENTIAL BILL ANALYSIS

RESIDENTIAL RATE R-01	PRESENT RATES*		TEP PROPOSED		RUCO PROPOSED	
All Months: Customer Charge per Month	\$4.90		\$9.00		\$6.50	
Summer Energy Charge First 500 kWh	0.090921		0.079062		0.074144	
Summer Energy Charge, Next 3,000 kWh	0.090921		0.107062		0.094144	
Summer Energy Charge, All Over 3,000 kWh	0.090921		0.117062		0.104144	
Winter Charge First 500 kWh	0.078970		0.077062		0.064144	
Winter Energy Charge, Next 3,000 kWh	0.078970		0.097062		0.084144	
Winter Energy Charge, All Over 3,000 kWh	0.078970		0.107062		0.094144	
RESIDENTIAL BILL COMPARISONS						
Monthly Electric Bills at Different Usage Levels						
Residential Service - R-01 Summer						
May-October						
	KWH USED	PRESENT MONTHLY COST	RUCO PROPOSED MONTHLY COST	RUCO PROPOSED MONTHLY INCREASE	RUCO PROPOSED MONTHLY % INCREASE	
	250	\$27.63	\$25.04	\$(2.59)	-9.39%	
	500	\$50.36	\$43.57	\$(6.79)	-13.48%	
	1,000	\$95.82	\$90.64	\$(5.18)	-5.40%	
	2,000	\$186.74	\$184.79	\$(1.95)	-1.05%	
	3,500	\$323.12	\$326.00	\$2.88	0.89%	
	5,000	\$459.51	\$482.22	\$22.72	4.94%	
Residential Service - R-01 Winter						
November-April						
	250	\$24.64	\$22.54	\$(2.11)	-8.55%	
	500	\$44.39	\$38.57	\$(5.81)	-13.10%	
	1,000	\$83.87	\$80.64	\$(3.23)	-3.85%	
	2,000	\$162.84	\$164.79	\$1.95	1.20%	
	3,500	\$281.30	\$291.00	\$9.71	3.45%	
	5,000	\$399.75	\$432.22	\$32.47	8.12%	

* Includes CTC Charges. All columns also include DSM Charges

RESIDENTIAL RATE DESIGN AND RUCO RECOMMENDED REQUIRED REVENUE

Description	Billing Determinants	Rates and Charges	Base Revenue Calculated
RESIDENTIAL - R01 - FROZEN			
Customers (Single-Phase)	4,102,937	\$6.50	\$26,669,088
Customer (Three-Phase)	3,804	12.5	47,550
Summer			
1st 500 kWhs	157,191,445	0.062974	9,898,976
3,000 kWhs	1,944,859,708	0.082974	161,372,810
3,501 kWhs and above	140,610,250	0.092974	13,073,099
Winter			
1st 500 kWhs	280,753,681	0.052974	14,872,648
3,000 kWhs	1,095,328,529	0.072974	79,930,516
3,501 kWhs and above	21,914,549	0.082974	1,818,338
Total kwhs	3,640,658,163	Average per kWh	0.084513
TOTAL BUNDLED REVENUE			\$307,683,024
RESIDENTIAL WATER HEATING - R-02			
Customers	28,728		
1st 100 kWhs - is a customer charge	2,472,456	0.0606527	149,961
All kWhs	2,788,089	0.0606527	169,105
Total kwhs	5,260,545		\$319,066
TOTAL BUNDLED REVENUE			\$319,066
RESIDENTIAL TIME OF USE - R-21 - ELIMINATED - REPLACED BY NEW TIME OF USE - R-70N			
Customers	34,512	\$6.50	224,328
Summer On Peak			
1st 500 kWhs	60,039	0.0985061	5,914
3,000 kWhs	5,382,124	0.1185061	637,815
3,501 kWhs and above	906,035	0.1285061	116,431
Summer Off Peak			
1st 500 kWhs	169,990	0.0257561	4,378
3,000 kWhs	15,238,671	0.0457561	697,262
3,501 kWhs and above	2,565,301	0.0557561	143,031
Summer Shoulder Peak			
1st 500 kWhs	61,896	0.0561469	3,475
3,000 kWhs	5,548,583	0.0761469	422,508
3,501 kWhs and above	934,057	0.0861469	80,466
Winter On Peak			
1st 500 kWhs	251,797	0.0738277	18,590
3,000 kWhs	8,069,797	0.0938277	757,171
3,501 kWhs and above	285,025	0.1038277	29,594
Winter Off Peak			
1st 500 kWhs	384,503	0.0148277	5,701
3,000 kWhs	12,322,860	0.0298277	367,563
3,501 kWhs and above	435,244	0.0398277	17,335
Total kwhs	52,615,922	Average per kWh	0.0671196
TOTAL BUNDLED REVENUE			3,531,561

RESIDENTIAL RATE DESIGN AND RUCO RECOMMENDED REQUIRED REVENUE

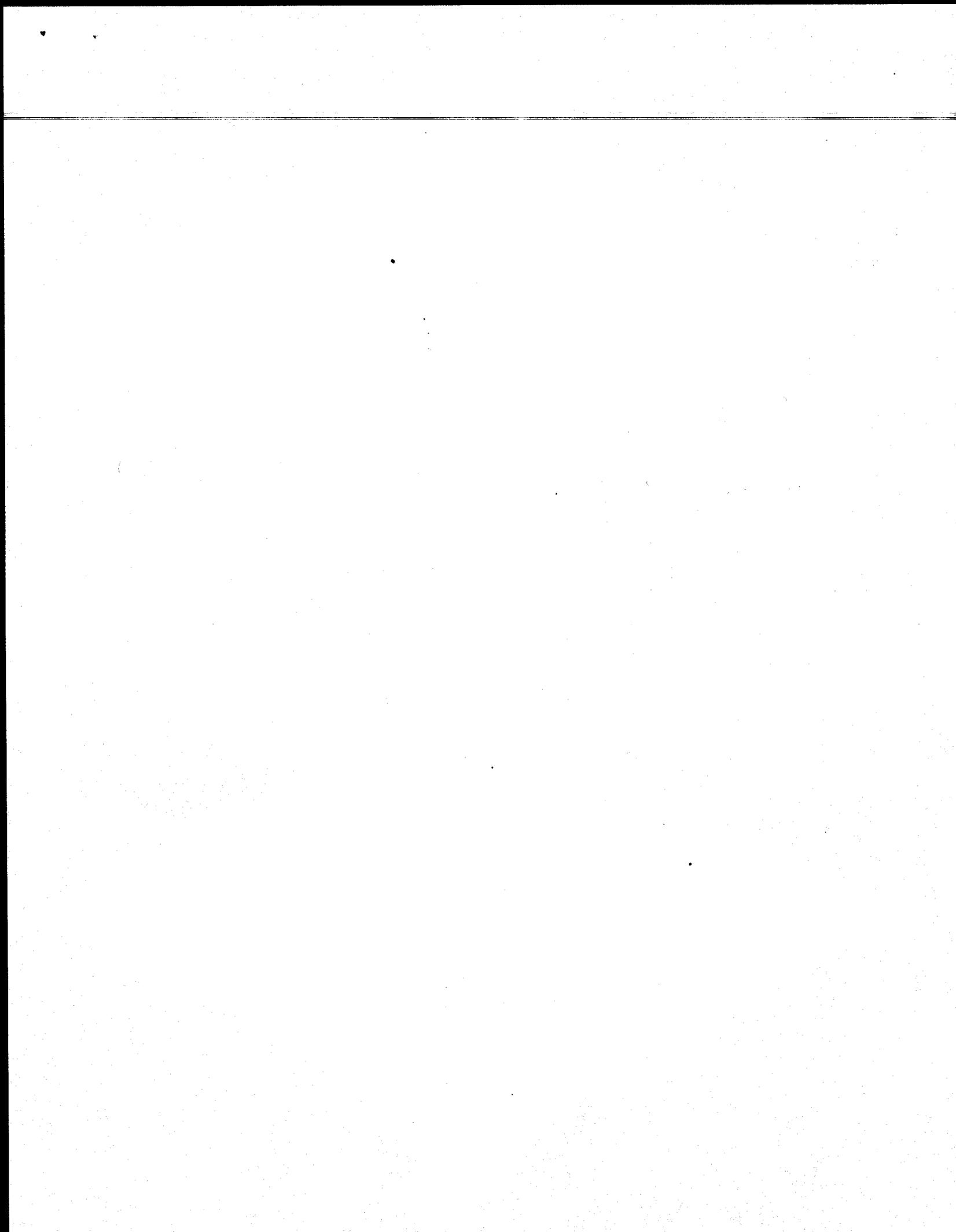
Description	Billing Determinants	Rates and Charges	Base Revenue Calculated
RESIDENTIAL TIME OF USE - R70 - ELIMINATED - REPLACED BY NEW TIME OF USE - R70N			
Customer Charge	50,748	\$6.50	329,862
Summer On Peak			
1st 500 kWhs	201,083	0.0985061	19,808
3,000 kWhs	8,188,982	0.1185061	970,444
3,501 kWhs and above	922,065	0.1285061	118,491
Summer Off Peak			
1st 500 kWhs	451,493	0.0257561	11,629
3,000 kWhs	18,386,781	0.0457561	841,308
3,501 kWhs and above	2,070,319	0.0557561	115,433
Summer Shoulder Peak			
1st 500 kWhs	186,158	0.0561469	10,452
3,000 kWhs	7,581,163	0.0761469	577,282
3,501 kWhs and above	853,625	0.0861469	73,537
Winter On Peak			
1st 500 kWhs	857,727	0.0738277	63,324
3,000 kWhs	9,151,895	0.0938277	858,701
3,501 kWhs and above	247,258	0.1038277	25,672
Winter Off Peak			
1st 500 kWhs	1,258,707	0.0148277	18,664
3,000 kWhs	13,430,319	0.0298277	400,596
3,501 kWhs and above	362,849	0.0398277	14,451
Total kWhs	64,150,421	Average per kWh	0.0693628
TOTAL BUNDLED REVENUE			4,449,655
TOTAL BUNDLED REVENUE NEW R70N			7,981,216
SPECIAL RESIDENTIAL ELECTRIC SERVICE - R-201A - FROZEN			
Customers (Single-Phase)	86,138	\$6.50	559,900
Mid-Summer			
1st 500 kWhs	777,880	0.0503978	39,203
3,000 kWhs	27,076,790	0.0703978	1,906,147
3,501 kWhs and above	2,295,440	0.0803978	184,548
Remaining Summer			
1st 500 kWhs	920,158	0.0403978	37,172
3,000 kWhs	21,183,679	0.0603978	1,279,448
3,501 kWhs and above	790,638	0.0703978	55,659
Winter			
1st 500 kWhs	3,035,325	0.0353978	107,444
3,000 kWhs	34,712,462	0.0553978	1,922,995
3,501 kWhs and above	802,397	0.0653978	52,475
Total kWhs	91,594,770	Average per kWh	0.0670889
TOTAL BUNDLED REVENUE			6,144,992

RESIDENTIAL RATE DESIGN AND RUCO RECOMMENDED REQUIRED REVENUE

Description	Billing Determinants	Rates and Charges	Base Revenue Calculated
TIME OF USE - R-201B - ELIMINATED - REPLACED BY TIME OF USE - R-201BN			
Customers	6,353	\$6.50	41,297
Mid-Summer On Peak			
1st 500 kWhs	10,690	0.0793978	849
3,000 kWhs	465,009	0.0993978	46,221
3,501 kWhs and above	65,778	0.0893978	5,880
Mid-Summer Off Peak			
1st 500 kWhs	27,686	0.0493978	1,368
3,000 kWhs	1,204,357	0.0693978	83,580
3,501 kWhs and above	170,363	0.0593978	10,119
Mid-Summer Shoulder Peak			
1st 500 kWhs	10,730	0.0593978	637
3,000 kWhs	466,759	0.0793978	37,060
3,501 kWhs and above	66,026	0.0693978	4,582
Remaining Summer On Peak			
1st 500 kWhs	17,072	0.0693978	1,185
3,000 kWhs	304,717	0.0893978	27,241
3,501 kWhs and above	33,731	0.0793978	2,678
Remaining Summer Off Peak			
1st 500 kWhs	42,591	0.0393978	1,678
3,000 kWhs	760,187	0.0593978	45,153
3,501 kWhs and above	84,149	0.0493978	4,157
Remaining Summer Shoulder Peak			
1st 500 kWhs	15,916	0.0493978	786
3,000 kWhs	284,073	0.0693978	19,714
3,501 kWhs and above	31,446	0.0593978	1,868
Winter On Peak			
1st 500 kWhs	63,699	0.0643978	4,102
3,000 kWhs	1,178,335	0.0843978	99,449
3,501 kWhs and above	199,932	0.0743978	14,874
Winter Off Peak			
1st 500 kWhs	92,114	0.0543978	5,011
3,000 kWhs	1,703,963	0.0743978	126,771
3,501 kWhs and above	289,116	0.0643978	18,618
Total kWhs	7,588,438	Average per kWh	0.0797106
TOTAL BUNDLED REVENUE			604,879

RESIDENTIAL RATE DESIGN AND RUCO RECOMMENDED REQUIRED REVENUE

Description	Billing Determinants	Rates and Charges	Base Revenue Calculated
TIME OF USE - R-201C - ELIMINATED - REPLACED BY TIME OF USE - R-201CN			
Customers	2,560	\$6.50	16,641
Mid-Summer On Peak			
1st 500 kWhs	3,123	0.077036	241
3,000 kWhs	148,154	0.096636	14,317
3,501 kWhs and above	10,826	0.086836	940
Mid-Summer Off Peak			
1st 500 kWhs	8,752	0.047636	417
3,000 kWhs	415,151	0.067236	27,913
3,501 kWhs and above	30,336	0.057436	1,742
Mid-Summer Shoulder Peak			
1st 500 kWhs	3,343	0.057436	192
3,000 kWhs	158,596	0.077036	12,218
3,501 kWhs and above	11,589	0.067236	779
Remaining Summer On Peak			
1st 500 kWhs	12,795	0.067236	860
3,000 kWhs	100,676	0.086836	8,742
3,501 kWhs and above	6,384	0.077036	492
Remaining Summer Off Peak			
1st 500 kWhs	36,182	0.037836	1,369
3,000 kWhs	284,699	0.057436	16,352
3,501 kWhs and above	18,054	0.047636	860
Remaining Summer Shoulder Peak			
1st 500 kWhs	13,494	0.047636	643
3,000 kWhs	106,176	0.067236	7,139
3,501 kWhs and above	6,733	0.057436	387
Winter On Peak			
1st 500 kWhs	44,725	0.062336	2,788
3,000 kWhs	332,541	0.081936	27,247
3,501 kWhs and above	77,285	0.072136	5,575
Winter Off Peak			
1st 500 kWhs	64,398	0.052536	3,383
3,000 kWhs	478,820	0.072136	34,540
3,501 kWhs and above	111,281	0.062336	6,937
Total kWhs	2,484,111	Average per kWh	0.0775785
TOTAL BUNDLED REVENUE			192,714
TOTAL 201A,B, and C			6,942,585
TOTAL PROPOSED RESIDENTIAL BASE REVENUE			\$322,925,890



APPENDIX A

RESUME OF GLEN GREGORY

EDUCATION:

Masters of Arts, Economics, University, of Oklahoma, 1980
Bachelor of Arts, University of Oklahoma, 1975

CREDENTIALS:

Certified Rate of Return Analyst, 1996

EXPERIENCE

- Independent Utility Regulation Consultant 5 years
- Manager, Senior Analyst (utility regulation),
- Oklahoma Corporation Commission 21 years

Independent Consultant, July 2003 to the present.

Mr. Gregory specializes in public utility issues, such as cost of capital, cost of service, rate design and other public utility issues.

Oklahoma Corporation Commission, November 1982 to July 2003.

Manager, Senior Analyst - Public Utility Division - Mr. Gregory specialized in the areas of rate design, cost allocation, and financial analysis for cost of capital and rate of return. Mr. Gregory was also substantially involved in preparation of reports and testimony regarding competitive bidding, utility deregulation, utility merger activities, evaluation of state and Federal restructuring proposals and a variety of other energy-related and regulatory issues. As a Certified Rate of Return Analyst, Mr. Gregory was the primary representative of the Division in the area of cost of capital analysis for both electric and gas utilities. Mr. Gregory was responsible for supervision of all cost of service studies, many rate cases for electric, gas, and water utilities. All positions held at the Commission required that Mr. Gregory provide expert testimony and be able to defend it under cross-examination. Mr. Gregory managed the Division's Economic and Research Unit. Mr. Gregory was also very active in the supervision and training of others in my assigned areas of responsibility. Mr. Gregory worked closely with corporate representatives, exchanged information, methodologies, and negotiated settlements.

Listing of Experience of Glen Gregory Related to Capital Cost, Cost-of-Service, Rate Design, Pricing and Energy-Related Issues

Entergy Arkansas, 2007 – Participated as an expert witness on behalf of the commercial customers before the Arkansas Public Service Commission in this general rate case to address capital cost, rate design and jurisdictional issues for the purpose of setting prospective cost-of-service based rates. Project completed in August 2007.

Public Service Company of Oklahoma, 2007 (Cause No. PUD 06-285) – Participated as an expert witness on behalf of the industrial consumers before the Oklahoma Corporation Commission in PSO's general rate case application to address rate design and jurisdictional issues for the purpose of setting prospective cost-of-service based rates.

Southwestern Public Service Company, 2006 (PUCT 32766) – Performed analysis, research regarding shared services, jurisdictional allocation, and other revenue requirement matters concerning this SPS rate case to be heard before the Public Utility Commission of Texas on behalf of various Texas municipal cities.

ATMOS Energy - Mid-Tex Gas, 2006 (GUD 9676) – Performed analysis, research regarding shared services, jurisdictional allocation, and other revenue requirement matters concerning this rate case to be heard before the Railroad Commission of Texas on behalf of various Texas municipal cities.

Oklahoma Gas & Electric Co., 2005 (PUD 200500151) – Participated as an expert witness on behalf of the industrial consumers before the Oklahoma Corporation Commission in OG&E's general rate case application to address capital cost, rate design and jurisdictional issues for the purpose of setting prospective cost-of-service based rates. Project completed in December 2005.

Oklahoma Natural Gas Company (“ONG”), 2005 (PUD 200300610) - Participated as an expert witness on behalf of the Attorney General of the State of Oklahoma before the Oklahoma Corporation Commission in this general rate case to address capital cost, rate design and jurisdictional issues for the purpose of setting prospective cost-of-service based rates. Project completed in August 2005.

Public Service Company of Oklahoma (“PSO”), 2004 (PUD 200300076) – Participated as an expert witness on behalf of the Oklahoma Industrial Energy Consumers of the State of Oklahoma before the Oklahoma Corporation Commission in this general rate case to address capital cost, rate design and jurisdictional issues for the purpose of setting prospective cost-of-service based rates. Project completed in July 2004.

CenterPoint Energy Arkla (“Arkla”), 2004 (PUD 200400187) – Participated as an expert witness on behalf of the Attorney General of the State of Oklahoma before the Oklahoma Corporation Commission in this general rate case to address capital cost, rate design and jurisdictional issues for the purpose of setting prospective cost-of-service based rates. Project completed in December 2004.

Oklahoma Gas & Electric Company (“OG&E”), 2004 (PUD 200300226) – Participated as an expert witness on behalf of the Oklahoma Industrial Energy Consumers before the OCC to address capital cost issues.

Oklahoma Natural Gas Company ("ONG"), 2003 (PUD 200300617) - Participated as an expert witness on behalf of the Staff of the State of Oklahoma before the OCC in this application of ONG to recover certain cost related to service lines, uncollectible accounts, etc.. Negotiate tariff and cost-of-service issues in settlement discussion.

Public Service Company of Oklahoma ("PSO"), 2003 (PUD 200200754) - Performed analysis, research and writing assistance to prepare written testimony on behalf of the Oklahoma Industrial Energy Consumers (OIEC) regarding a review of PSO's Fuel Adjustment Clause for the year 2001.

Arkansas Louisiana Gas Company ("Arkla"), 2002 (PUD 200200166) - Participated as an expert witness on behalf of the PUD before the OCC in this general rate case application to address capital cost. Oversaw the work of outside consultants regarding various revenue requirement and rate design issues for the purpose of setting prospective cost-of-service based rates. Negotiated tariff and cost-of-service issues in settlement discussion.

The Empire District Electric Company., 2003 (PUD 200300121) - Supervised the work of OCC staff filing testimony on behalf of the PUD before the OCC in this general rate case application regarding various revenue requirement and rate design issues for the purpose of setting prospective cost-of-service based rates. Negotiated tariff and cost-of-service issues in settlement discussion.

Lawton Cogeneration L.L.C., 2002 (PUD 200200038) - Performed analysis, research and writing assistance to prepare written testimony on behalf of the PUD regarding a review of avoided cost as required by Federal law and the Power Sale Agreement submitted by Lawton for OCC approval.

Arkansas Louisiana Gas Company., 2002 (PUD 200100586) - Participated as an expert witness on behalf of the PUD before the OCC regarding this application for approval of a transfer of Oklahoma assets as part of a corporate restructuring plan..

Enogex, Inc., 2001 (PUD 200000339) - Participated as an expert witness on behalf of the PUD before the OCC in this cause filed by Enogex seeking a determination from the OCC regarding the evaluation of ONG's competitive bid process.

Oklahoma Gas & Electric Co., 2000 (PUD 200000022) - Participated as an expert witness on behalf of the PUD before the OCC concerning OG&E's recovery of natural gas transportation cost from its affiliate Enogex, Inc.

Oklahoma Gas & Electric Co., 2002 (PUD 2001000455) - Participated as an expert witness on behalf of the PUD before the OCC in this general rate case application to address capital cost and rate design. Supervised and oversaw the work of PUD staff involved in various revenue requirement and rate design issues for the purpose of setting prospective cost-of-service based rates. Negotiate tariff and cost-of-service issues in settlement discussion.

Oklahoma Gas and Electric Company, 1996 (PUD 960000116) - Participated as an expert witness on behalf of the PUD before the OCC regarding capital cost and capital structure. Oversaw and supervised the work of the PUD witness regarding revenue, rate design, cost of service matters and tariffs. Sponsored testimony on OG&E's proposed Generation Efficiency Performance Rider (GEPR). Recommended modifications to the Company's proposed GEPR to bring it within the boundaries of an acceptable alternative ratemaking formula.

Oklahoma Gas and Electric Company, 1999 (PUD 990000417) – OG&E request for implementation of a performance based incentive plan. Participated as an expert witness and supervised other OCC staff filing testimony on behalf of the PUD before the OCC. Prepared information to inform the Commissioners in OCC Deliberations of matters regarding the application.

Oklahoma Natural Gas Company, 1998 – Participated as an expert witness in ONG's unbundling proceedings before the OCC. Sponsored written and oral testimony on behalf of the PUD to address the cost of ONG's unbundled upstream gas services.

Public Service Company of Oklahoma, 1997 (PUD 960000214) - Sponsored testimony before the OCC on behalf of the PUD regarding cost of capital and capital structure.

Oklahoma Natural Gas /Western Resources Merger, 1997 - Oversaw and supervised the work of the PUD witness assigned on behalf of the PUD before the OCC regarding the appropriateness of OCC approval of the merger and setting certain parameters to safeguard ratepayers from negative effects of the merger.

Oklahoma Gas and Electric Co., 1996 (CN PUD 960000116) - Sponsored testimony on behalf of the PUD for the purpose of determining the Company's cost of capital and capital structure. Oversaw and supervised the work of the PUD witness regarding revenue, rate design, cost of service matters and tariffs.

Arkansas Oklahoma Gas Company, 1997 (CN PUD 960000408) - Sponsored testimony before the OCC on behalf of the PUD regarding cost of capital and capital structure. Oversaw and supervised the work of the PUD witness regarding revenue, rate design, cost of service matters and tariffs.

Empire District Electric Company, 1994 (940000343) - Sponsored testimony before the OCC on behalf of the PUD regarding cost of capital and capital structure. Sponsored testimony before the OCC on behalf of the PUD regarding revenue, rate design, cost of service matters and tariffs.

Arkansas Louisiana Gas Company, 1993 (920001217) - Sponsored testimony before the OCC on behalf of the PUD regarding cost of capital and capital structure. Supervised the preparation of PUD testimony regarding revenue, rate design, cost of service matters and tariffs.

Oklahoma Natural Gas Company, 1993 - Sponsored and or supervised testimony of PUD staff before the OCC on behalf of the PUD regarding capital cost, revenue, rate design, cost of service matters and tariffs.

Oklahoma Gas and Electric Company, 1992 - Sponsored and or supervised testimony of PUD staff testimony before the OCC on behalf of the PUD regarding capital cost, revenue, rate design, cost of service matters and tariffs.