

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

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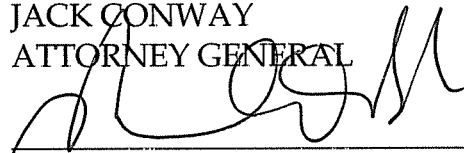
In the Matter of:

APPLICATION OF LOUISVILLE GAS )  
AND ELECTRIC COMPANY FOR AN ) CASE NO. 2009-00549  
ADJUTMENT OF BASE RATES )

**ATTORNEY GENERAL'S PRE-FILED TESTIMONY**

Comes now the intervenor, the Attorney General of the Commonwealth of Kentucky, by and through his Office of Rate Intervention, and files the following testimony in the above-styled matter.

Respectfully submitted,  
JACK CONWAY  
ATTORNEY GENERAL



---

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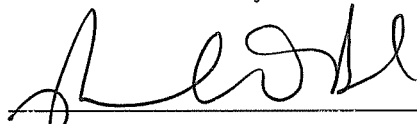
*Certificate of Service and Filing*

Counsel certifies that an original and ten photocopies of the foregoing were served and filed by hand delivery to Jeff Derouen, Executive Director, Public Service Commission, 211 Sower Boulevard, Frankfort, Kentucky 40601; counsel further states that true and accurate copies of the foregoing were mailed via First Class U.S. Mail, postage pre-paid, to:

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this 23<sup>rd</sup> day of April, 2010



Assistant Attorney General

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

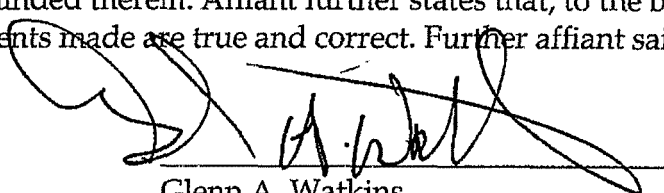
In the Matter of:

APPLICATION OF LOUISVILLE GAS )  
AND ELECTRIC COMPANY FOR AN ) CASE NO. 2009-00549  
ADJUTMENT OF BASE RATES )

AFFIDAVIT OF GLENN A. WATKINS

Commonwealth of Virginia )  
)  
)

Glenn A. Watkins, being first duly sworn, states the following: The prepared Pre-Filed Direct Testimony, and the Schedules and Appendix attached thereto constitute the direct testimony of Affiant in the above-styled case. Affiant states that he would give the answers set forth in the Pre-Filed Direct Testimony if asked the questions propounded therein. Affiant further states that, to the best of his knowledge, his statements made are true and correct. Further affiant saith not.

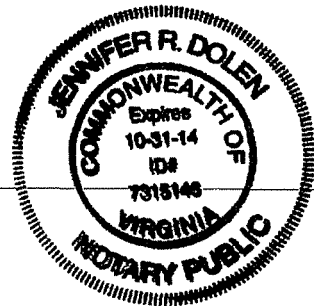
  
Glenn A. Watkins

SUBSCRIBED AND SWORN to before me this 19<sup>th</sup> day of April, 2010.

  
NOTARY PUBLIC

My Commission Expires: 10-13-14

Registration No: 7315146



**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF:**

**APPLICATION OF LOUISVILLE GAS AND )**  
**ELECTRIC COMPANY FOR AN ) CASE NO. 2009-00549**  
**ADJUSTMENT OF ITS ELECTRIC AND )**  
**GAS BASE RATES )**

**PREPARED DIRECT TESTIMONY AND SCHEDULES**  
**OF**  
**GLENN A. WATKINS**  
**ON BEHALF OF THE**  
**KENTUCKY OFFICE OF THE ATTORNEY GENERAL**

**APRIL 23, 2010**

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1  
2  
3 **I. INTRODUCTION**

4 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

5 A. My name is Glenn A. Watkins. My business address is James Center III, 1051  
6 East Cary Street, Suite 601, Richmond, VA 23219.

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am a Principal and Senior Economist with Technical Associates, Inc., which is  
9 an economic and financial consulting firm with offices in Richmond, Virginia.

10  
11 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

12 A. I am testifying on behalf of the Office of Rate Intervention of the Kentucky Office  
13 of Attorney General ("OAG").

14  
15 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS.**

16 A. Except for a six-month period during 1987 in which I was employed by Old  
17 Dominion Electric Cooperative as its forecasting and rate economist, I have been  
18 employed by Technical Associates continuously since 1980.

19 During my career at Technical Associates, I have conducted marginal and  
20 embedded cost of service, rate design, cost of capital, and load forecasting studies  
21 involving numerous electric, gas, water/wastewater, and telephone utilities, and have  
22 provided expert testimony in Alabama, Arizona, Georgia, Kansas, Kentucky, Maine,  
23 Maryland, Massachusetts, Michigan, North Carolina, New Jersey, Ohio, Illinois,  
24 Pennsylvania, Vermont, Virginia, South Carolina, Washington, and West Virginia. I  
25 hold an M.B.A. and B.S. in economics from Virginia Commonwealth University. I am a  
26 member of several professional organizations as well as a Certified Rate of Return  
27 Analyst. A more complete description of my education and experience is provided in my  
28 Schedule GAW-1 to my testimony.

29  
30 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

1 A. Technical Associates has been retained by the OAG to evaluate the  
2 reasonableness of Louisville Gas & Electric Company's ("LG&E" or "Company")  
3 proposed electric weather normalization adjustment, electric and natural gas class cost of  
4 service studies (CCOSS), proposed distribution of revenues by class, and residential  
5 electric and natural gas rate designs. The purpose of my testimony, therefore, is to  
6 comment on LG&E's proposals on these issues and to present my findings and  
7 recommendations based on the results of the studies I have undertaken on behalf of the  
8 OAG.

9  
10 **II. ELECTRIC WEATHER NORMALIZATION**

11  
12 **Q. IS LG&E PROPOSING A WEATHER NORMALIZATION ADJUSTMENT FOR**  
13 **ITS ELECTRIC OPERATIONS IN THIS CASE?**

14 A. Yes. Consistent with LG&E's last several rate increase applications, the  
15 Company is proposing a weather normalization adjustment for this case.

16  
17 **Q. HAS THIS COMMISSION EVER APPROVED AN ELECTRIC WEATHER**  
18 **NORMALIZATION ADJUSTMENT?**

19 A. To the best of my knowledge, this Commission has not approved an electric  
20 weather normalization adjustment.

21  
22 **Q. WHAT EFFECT DOES LG&E'S PROPOSED ELECTRIC WEATHER**  
23 **NORMALIZATION HAVE ON ITS REQUESTED INCREASE?**

24 A. In this particular rate case, LG&E's proposed electric weather normalization has  
25 the effect of reducing its requested revenue increase. That is, as a result of Mr. Seelye's  
26 proposed methodology and analysis, he concludes that actual test year sales and revenues  
27 were less than what would be expected under a more normal weather pattern.  
28 Specifically, Mr. Seelye's proposed weather adjustment results in an increase to test year  
29 revenue of \$5.751 million and an increase to variable expenses of \$1.899 million. The  
30 net effect of Mr. Seelye's weather adjustment is to increase test year operating income,  
before income taxes of \$3.252 million.



1 Q. DO YOU AGREE WITH MR. SEELYE'S PROPOSED ELECTRIC WEATHER  
2 NORMALIZATION ADJUSTMENT?

3 A. No.

4  
5 Q. PLEASE EXPLAIN.

6 A. Although a portion of Residential and Commercial electricity usage is sensitive to  
7 temperature for heating and cooling, over the course of an entire year short term  
8 increased sales (due to colder than average temperatures in winter and warmer than  
9 average temperatures in summer) are generally offset by short-term weather conditions in  
10 the opposite direction. Furthermore, and unlike weather sensitive natural gas sales that  
11 are entirely weather dependent for heating load, electricity serves both heating and  
12 cooling (air conditioning) load. As such, even if a winter is somewhat milder than  
13 normal (and heating sales are less than expected), the following summers are often  
14 somewhat more severe than normal (and cooling sales are more than expected). Under  
15 these conditions, an electric utility's energy sales are evened out over the course of an  
16 entire year. For this reason, many, if not most, state utility Commissions do not  
17 recognize weather normalization for ratemaking purposes.

18 In this case, Mr. Seelye has developed a methodology that evaluates whether  
19 individual monthly sales are greater than or less than an outside band of weather  
20 normalcy. If an individual month's expected heating degree days (HDD) or cooling  
21 degree days (CDD) fall outside of Mr. Seelye's band of what would be expected under  
22 relatively normal weather conditions, that month's sales are adjusted upward or  
23 downward.

24 The flaw in Mr. Seelye's logic is that each month's analysis and determination of  
25 weather normalcy is independent and mutually exclusive of all other months within the  
26 same heating or cooling season.

27 Mr. Seelye's Exhibit 15 shows how his monthly sales adjustments are determined.  
28 Using Mr. Seelye's definition of LG&E's cooling season running from May 1 through  
29 October 31 as an example, we see that the month of May is evaluated to determine if that  
30 single month's weather pattern was outside of a band of normal weather. In this instance,  
31 the weather in May 2009 was not deemed to be abnormally warm (outside the band of

normalcy), such that no adjustment was made to actual May sales. The same was true for June, August, and September 2009. However, Mr. Seelye determined that the month of July 2009 was cooler than normal (and outside of his normalcy band) so this month's sales were adjusted upward. Although Mr. Seelye's mutually exclusive analysis is conducted on a month by month basis, one could also apply the same logic on a weekly, daily, or even hourly basis.

The flaw in using any of the sub-sets (partial periods) of an entire heating or cooling season is that while a short-term period may fall outside of Mr. Seelye's weather normalcy band such as more severe weather than expected the remaining sub-sets (partial periods) within the same overall heating or cooling season may have been somewhat milder than average and hence not subject to adjustment. However, when these somewhat milder sub-sets (partial periods) are consolidated, we find that the entire heating or cooling season overall cannot be said to be abnormal. For example, consider the following hypothetical example: suppose July was abnormally cool and its weather pattern (CDD) fell outside of Mr. Seelye's band of normalcy. Also assume that June, August, and September were just marginally warmer than average such that these month's did not fall outside of the normalcy bands. Even though the total cooling degree days over the entire summer period (cooling season) were the same as the historical average (cooler July, yet somewhat warmer June, August and September), Mr. Seelye's approach would result in a weather adjustment (an increase to sales) simply because one month of the entire season was beyond a range of normal weather.

**Q. WHAT WAS THE ACTUAL COOLING SEASON EXPERIENCE DURING THE TEST YEAR?**

A. Mr. Seelye defines LG&E's cooling season as May through October. I disagree with the inclusion of May and October for reasons that I will explain later. For the test year months of June through September (2009), the 30-year average cooling degree days are 1,360. The standard deviation of this 30-year average, is 202. As such, using Mr. Seelye's banding approach of defining a range of normal weather, a normal weather range is between 1,158 CDDs and 1,562 CDD. The actual cooling degree days during the June through September 2009 (test-year) period were 1,142 which is 16 CDD beyond

1 the “normal” band. As such, one may conclude that the test year cooling season was just  
2 slightly cooler (milder) than the range of expected normal weather. However, the above  
3 determination is only true by accepting the subjective banding definition of plus or minus  
4 one standard deviation from the thirty-year average. What this means is that about 68%  
5 of observations are expected to fall within the plus or minus one standard deviation and  
6 would be considered as the limits of normalcy. The remaining 32% would be considered  
7 “abnormal” under Mr. Seelye’s approach. Although there are no established parameters  
8 as to exactly what percentage should be considered to fall within an expected normal  
9 range, extremes are often defined as those that are expected to occur less than 5% of the  
10 time. This 5% level of significance is by statistical definition approximately plus or  
11 minus two standard deviations. As such, if the definition of normal weather is expanded  
12 from 68% (plus or minus one standard deviation) to 95% (plus or minus two standard  
13 deviations) we see that the test year experience falls well within the band of normalcy.

14 It is not my intention to question whether one or two standard deviations are  
15 appropriate, but rather that Mr. Seelye’s pre-selected definition of one standard deviation  
16 results in the test year being considered just slightly beyond his range of normalcy. In  
17 my opinion, this minor difference is not reason for this Commission to alter its long  
18 standing practice of not considering weather adjustments for electric utilities.

19  
20 **Q. MR. SEELYE INCLUDED THE MONTHS OF MAY AND OCTOBER AS**  
21 **COOLING SEASON MONTHS. SHOULD THESE MONTHS BE INCLUDED AS**  
22 **“COOLING MONTHS”?**

23 **A.** No. These months are considered shoulder months. Days in May and October  
24 can be cool or fairly warm such that these months are comprised of heating degree days  
25 and cooling degree days. As such, heating and air conditioning loads are not predictable  
26 in May and October. To illustrate, consider Mr. Seelye’s Exhibit 15. On average, May  
27 has 72 HDDs throughout the month and 123 CDDs. Similarly, October is historically  
28 comprised of 221 HDDs and only 40 CDDs. Indeed, October tends to have significantly  
29 more heating load than air conditioning load.  
30

1  
2  
3 **III. ELECTRIC CLASS COST OF SERVICE**

4 **Q. PLEASE EXPLAIN THE CONCEPT OF A CLASS COST OF SERVICE STUDY**  
5 **(“CCOSS”).**

6 A. First, I note that there are two general types of cost of service studies used for  
7 public utility ratemaking: marginal cost studies; and embedded, fully allocated cost  
8 studies. LG&E has utilized a traditional embedded cost of service concept in this case for  
9 purposes of establishing its overall retail revenue requirement, as well as for its class cost  
10 of service study (“CCOSS”). As such, I will limit my explanation to embedded class cost  
11 of service studies.

12 Embedded cost of service studies are often referred to as fully allocated cost  
13 studies. This is because the vast majority of an electric utility’s plant investment serves  
14 all customers, and the majority of expenses are incurred in a joint manner such that these  
15 costs cannot be specifically attributed to any individual customer or group of customers.  
16 To the extent that certain costs can be specifically attributable to a particular customer (or  
17 group of customers), these costs are often directly assigned in a CCOSS. However, the  
18 vast majority of LG&E’s Production, Transmission, and Distribution plant and expenses  
19 are incurred jointly to serve all (or most) customers. These joint costs are then allocated  
20 to rate classes. It is generally recognized that to the extent possible, joint costs should be  
21 allocated to classes based on the concept of cost causation; i.e., costs are allocated based  
22 on specific factors that cause costs to be incurred by the utility. Although cost analysts  
23 generally strive to abide by the concept of cost causation to the greatest extent practical,  
24 some costs (particularly overhead costs), cannot be attributed to specific exogenous  
25 factors and must be subjectively assigned or allocated to rate classes. With regards to  
26 those costs in which cost causation can be attributed, cost of service experts often  
27 disagree as to what is the most cost causative factor; e.g., peak demand, energy usage,  
28 number of customers, etc.

29 **Q. PLEASE EXPLAIN HOW CCOSS RESULTS SHOULD BE USED IN THE**  
30 **RATEMAKING PROCESS.**

1 A. Although there are certain principles used by all cost of service analysts, there are  
2 often significant disagreements on the specific factors that drive certain costs. These  
3 disagreements can and do arise as a result of the quality of data and level of detail  
4 available from financial records, as well as *fundamental differences* in opinions regarding  
5 the design or cost causation factors that should be considered to properly allocate costs to  
6 rate schedules or customer classes. Furthermore, and as mentioned earlier, cost causation  
7 factors cannot be realistically ascribed to some costs such that subjective decisions are  
8 required. In this regard, two different cost studies conducted for the same utility and  
9 time period can, and often do, yield different results. As such, regulators should consider  
10 CCOSS results as one of many tools in assigning revenue responsibility.

11  
12 **Q. PLEASE EXPLAIN HOW YOU PROCEEDED WITH YOUR ANALYSIS OF**  
13 **LG&E'S CCOSS.**

14 A. The process in which I conducted my analysis in this case was identical to how I  
15 evaluate all CCOSSs. First, I reviewed the structure and organization of the Company's  
16 CCOSS sponsored by Mr. Seelye. Once the basic structure was understood, I reviewed  
17 the accuracy and completeness of the primary drivers (allocators) used to assign costs to  
18 rate schedules and classes. Next, I reviewed Mr. Seelye's selection of allocators to  
19 specific rate base, revenue and expense accounts. Finally, I adjusted certain aspects of  
20 the Company's study to better reflect cost causation and cost incidence by rate schedule  
21 and customer class.

22  
23 **Q. DID YOU FIND THE COMPANY'S STUDY TO BE MATHEMATICALLY**  
24 **ACCURATE?**

25 A. Yes. Perhaps the most fundamental requirement of an embedded CCOSS is that  
26 the sum of the parts (classes) must equal the whole (system). This is true with respect to  
27 the allocation of financial accounts, as well as the various allocation factors.  
28 Furthermore, certain costs previously allocated are carried forward for other purposes  
29 such as for the development of composite or internal allocators and for the assignment of  
30 income taxes. In all regards, I found Mr. Seelye's CCOSS to be mathematically  
accurate.

1 **Q. DID YOUR EXAMINATION RESULT IN ANY DISAGREEMENTS WITH THE**  
2 **ASSUMPTIONS OR METHODOLOGIES USED BY MR. SEELYE?**

3 A. Yes. Although I have two material disagreements with Mr. Seelye's CCOSS, my  
4 ultimate findings are not significantly different from Mr. Seelye's, with the possible  
5 exception of the lighting classes.  
6

7 **Q. PLEASE PROVIDE A SUMMARY OF MR. SEELYE'S AND YOUR CCOSS**  
8 **FINDINGS.**

9 A. The following is a summary comparison of Mr. Seelye's and my class rates of  
10 return at current rates:

Class	Class ROR At Current Rates	
	Seelye	Watkins
Residential	3.19%	4.01%
General Service	9.12%	9.89%
PS-Primary	4.86%	4.01%
PS-Secondary	6.62%	6.06%
CTOD-Primary	4.47%	2.67%
CTOD-Secondary	4.42%	3.57%
ITOD-Primary	3.31%	1.69%
ITOD-Secondary	5.27%	3.90%
RTS-Transmission	2.91%	1.47%
Sp. Contract-Ft. Knox	-0.16%	-0.48%
Sp. Contract-Water Companies	-0.34%	-1.44%
Lighting-RLS & LS	8.88%	7.43%
Lighting-LE	3.38%	-2.72%
Lighting-Traffic	4.25%	-0.21%
Total Company	4.77%	4.77%

24  
25 **Q. PLEASE OUTLINE THE TWO MATERIAL DISAGREEMENTS YOU HAVE**  
26 **WITH MR. SEELYE'S CCOSS.**

27 A. The two substantial disagreements that I have with Mr. Seelye are his "Modified  
28 Base-Intermediate-Peak" method used to allocate generation costs and his classification  
29 of distribution facilities between customer-related and demand-related portions.  
30

1           **A.     Generation**

2  
3     **Q.     YOU INDICATE THAT ONE OF YOUR DISAGREEMENTS WITH MR.**  
4           **SEELYE IS HIS USE OF WHAT HE REFERS TO AS A MODIFIED BASE-**  
5           **INTERMEDIATE-PEAK METHOD TO ALLOCATE GENERATION COSTS.**  
6           **ARE THERE OTHER METHODOLOGIES WHICH MAY BE USED TO**  
7           **ALLOCATE GENERATION- RELATED PLANT AND EXPENSES?**

8     A.           Yes. There are several demand allocation methods utilized in the electric  
9           industry. The current National Association of Regulatory Utility Commissioners  
10          (“NARUC”) Electric Utility Cost Allocation Manual discusses at least thirteen embedded  
11          demand allocation methods, while Dr. James Bonbright noted the existence of at least 29  
12          demand allocation methods in his treatise, Principles of Public Utilities Rates.

13  
14     **Q.     WHY DO SO MANY GENERATION ALLOCATION METHODS EXIST FOR**  
15           **THE ELECTRIC INDUSTRY?**

16     A.           Utilities design and build generation facilities to meet the energy and demand  
17           requirements of their customers on a collective basis. Because of this, and the physical  
18           laws of electricity, it is impossible to determine which customers are being served by  
19           which facilities. As such, production facilities are joint costs; i.e., used by all customers.  
20           Because of this commonality, production-related costs are not directly known for any  
21           customer or customer group and must somehow be allocated.

22           If all customer classes used electricity at a constant rate throughout the year, there  
23           would be no disagreement as to the proper assignment of generation-related costs: all  
24           analysts would agree that energy usage in terms of kWh would be the proper approach to  
25           reflect cost causation and cost incidence. However, such is not the case in that LG&E  
26           experiences periods (hours) of much higher demand during certain times of the year and  
27           across various hours of the day. Moreover, all customer classes do not contribute in  
28           equal proportions to these varying demands placed on the generation system. To  
29           complicate matters, the electric utility industry is somewhat unique in that there is a  
30           distinct energy/capacity trade-off relating to generation costs. That is, utilities design  
          their mix of production facilities (generation and power supply) to minimize the total

1 costs of energy and capacity, while also ensuring there is enough available capacity to  
2 meet peak demands. The trade-off occurs between the level of fixed investment per unit  
3 of capacity (KW) and the variable cost of producing a unit of output (kWh). Coal and  
4 nuclear units require high capital expenditures resulting in large investments per KW,  
5 whereas smaller units with higher variable production costs generally require  
6 significantly less investment per KW. Due to varying levels of demand placed on the  
7 system over the course of each day, month, and year there is a unique optimal mix of  
8 production facilities for each utility that minimizes the total cost of capacity and energy;  
9 i.e., its cost of service.

10 Therefore, as a result of the energy/capacity cost trade-off, and the fact that the  
11 service requirements of each utility are unique, many different allocation methodologies  
12 have evolved in an attempt to equitably allocate joint production costs to individual  
13 classes.

14  
15 **Q. PLEASE EXPLAIN.**

16 A. Total production costs vary each hour of the year. Theoretically, energy and  
17 capacity costs should be allocated to classes each and every hour of the year. This would  
18 result in 8,760 hourly allocations during non-leap years. Although such an analysis is  
19 certainly possible with today's technology, the time and cost necessary for such an  
20 undertaking would likely exceed the additional benefits obtained over simpler methods.  
21 This is because the analyst does not know precise class loads each and every hour, and  
22 subjective decisions must still be made regarding the assignment of fixed investment  
23 (capacity costs) to individual hours. With this practical constraint in mind, each method  
24 has its strengths and weaknesses regarding its reasonableness in reflecting cost causation  
25 as well as the cost and effort required to produce a study.

26  
27 **Q. BRIEFLY DISCUSS THE STRENGTHS AND WEAKNESSES OF COMMON**  
28 **PRODUCTION COST ALLOCATION METHODOLOGIES.**

29 A. A brief description of the most common fully allocated cost methodologies and  
30 attendant strengths and weaknesses are as follows:



1                    **Single Coincident Peak (“1-CP”)** -- The basic concept underlying the 1-CP  
2 method is that an electric utility must have enough capacity available to meet its  
3 customers' peak coincident demand. As such, advocates of the 1-CP method reason that  
4 customers (or classes) should be responsible for fixed capacity costs based on their  
5 respective contributions to this peak system load. The major advantages to the 1-CP  
6 method are that the concepts are easy to understand, the analyses required to conduct a  
7 CCOSS are relatively simple, and the data requirements are significantly less than some  
8 of the more complex methods.

9                    The 1-CP method has several shortcomings, however. First, and foremost, is the  
10 fact that the 1-CP method totally ignores the capacity/energy trade-off inherent in the  
11 electric utility industry. That is, the sole criterion for assigning one hundred percent of  
12 fixed capacity costs is the classes' relative contributions to load during a single hour of  
13 the year. This method does not consider, in any way, the extent to which customers use  
14 these facilities during the other 8,759 hours of the year. This may have severe  
15 consequences because a utility's planning decisions regarding the amount and type of  
16 generation capacity to build and install is predicated not only on the maximum system  
17 load, but also on how customers demand electricity throughout the year, i.e., load  
18 duration. To illustrate, if a utility had a peak load of 15,000 MW and its actual optimal  
19 generation mix included an assortment of nuclear, coal, hydro, combined cycle and  
20 combustion turbine units, the total cost of capacity is significantly higher than if the  
21 utility only had to consider meeting 15,000 MW for 1 hour of the year. This is because  
22 the utility would install the cheapest type of plant, (i.e., peaker units) if it only had to  
23 consider one hour a year.

24                    There are two other major shortcomings of the 1-CP method. First, the results  
25 produced with this method can be unstable from year to year. This is because the hour in  
26 which a utility peaks annually is largely a function of weather. Therefore, annual peak  
27 load depends on when severe weather occurs. If this occurs on a weekend or holiday,  
28 relative class contributions to the peak load will likely be significantly different than if  
29 the peak occurred during a weekday. The other major shortcoming of the 1-CP method is  
30 often referred to as the "free ride" problem. This problem can easily be seen with a  
31 summer peaking utility that peaks about 5:00 p.m. Because street lights are not on at this

1 time of day, this class will not be assigned any capacity costs at all and enjoy a free ride  
2 on the assignment of generation costs that this class requires.

3 **Summer and Winter Coincident Peak (“S/W Peak”)** -- The S/W Peak method  
4 was developed because some utilities’ annual peak load occurs in the summer during  
5 some years and in the winter during others. Because customers' usage and load  
6 characteristics may vary by season, the S/W Peak attempts to recognize this  
7 characteristic. This method is essentially the same as the 1-CP method except that two  
8 hours of load are considered instead of one. This method has essentially the same  
9 strengths and weaknesses as the 1-CP method, and in my opinion, is only marginally  
10 more reasonable than the 1-CP method.

11 **Twelve Monthly Coincident Peak (“12-CP”)** -- Arithmetically, the 12-CP  
12 method is essentially the same as the 1-CP method except that class contributions to each  
13 monthly peak are considered. Although the 12-CP method bears little resemblance to  
14 how utilities design and build their systems, the results produced by this method better  
15 reflect the cost incidence of a utility’s generation facilities.

16 Most electric utilities have distinct seasonal load patterns such that there are high  
17 system peaks during the winter and summer months, and significantly lower system  
18 peaks during the spring and autumn months. By assigning class responsibilities based on  
19 their respective contributions throughout the year, consideration is given to the fact that  
20 utilities will call on all of their resources during the highest peaks, and only use their  
21 most efficient plants during lower peak periods. Therefore, the capacity/energy trade-off  
22 is implicitly considered to a small extent under this method.

23 The major shortcoming of the 12-CP method is that accurate load data is required  
24 by class throughout the year. This generally requires a utility to maintain on-going load  
25 studies. However, once a system to record class load data is in place, the administration  
26 and maintenance of such a system is not overly cumbersome for larger utilities.

27 **Peak and Average (“P&A”)** -- The various P&A methodologies rest on the  
28 premise that a utility's actual generation facilities are placed into service to meet peak  
29 load and serve consumers demands throughout the entire year. Hence, the P&A method  
30 assigns capacity costs partially on the basis of contributions to peak load and partially on  
31 the basis of consumption throughout the year. Although there is not universal agreement

1 on how peak demands should be measured or how the weighting between Peak and  
2 Average demands should be performed, many P&A studies use class contributions to  
3 coincident-peak demand for the "peak" portion, while some studies weight the Peak and  
4 Average loads based on the system coincident load factor and others give equal weight to  
5 energy usage and peak demand.

6 The major strengths of the P&A method are that an attempt is made to recognize  
7 the capacity/energy trade-off in the assignment of fixed capacity costs, and that data  
8 requirements are minimal.

9 Although the recognition of the capacity/energy trade-off is admittedly arbitrary  
10 under the P&A method, most other allocation methods also suffer to some degree of  
11 arbitrariness.

12 **Average and Excess ("A&E")** -- The A&E method also considers both peak  
13 demands and energy consumption throughout the year. However, the A&E method is  
14 much different than the P&A method in both concept and application. The A&E method  
15 recognizes class load diversity within a system, such that all classes do not call on the  
16 utility's resources to the same degree, at the same times. Mechanically, the A&E method  
17 weights average and excess demands based on system coincident load factor. Individual  
18 class "excess" demands represent the difference between the class non-coincident peak  
19 demand and its average annual demand. The classes' "excess" demands are then summed  
20 to determine the system excess demand. Under this method, it is important to distinguish  
21 between coincident and non-coincident demands. This is because if coincident, instead  
22 of non-coincident, demands are used when calculating class excesses, the end result will  
23 be exactly the same as that achieved under 1-CP method.

24 Although the A&E method bears virtually no resemblance to how generation  
25 systems are designed, this method can produce fair and reasonable results for many  
26 utilities. This is because no class will receive a free-ride under this method, and because  
27 recognition is given to average consumption as well as to the additional costs imposed by  
28 not maintaining a perfectly constant load.

29 A potential shortcoming of this method is that customers that only use power  
30 during off-peak periods will be overburdened with costs. Under the A&E method, off-  
31 peak customers will be assigned a higher percentage of capacity costs because their non-

1 coincident load factor may be very low even though they call on the utility's resources  
2 only during less costly off-peak periods.

3 **Equivalent Peaker ("EP")** -- The EP method combines certain aspects of  
4 traditional embedded cost methods with those used in forward-looking marginal cost  
5 studies. The EP method often relies on planning information in order to classify  
6 individual generating units as energy- or demand-related and considers the need for a mix  
7 of base load intermediate and peaking generation resources.

8 The EP method has substantial intuitive appeal in that base load units that operate  
9 with high capacity factors are allocated largely on the basis of energy consumption with  
10 costs shared by all classes based on their usage, while peaking units that are seldom used  
11 and only called upon during peak load periods are allocated based on peak demands to  
12 those classes contributing to the system peak load. However, this method requires a  
13 significant amount of data.

14 **Base-Intermediate-Peak ("BIP")** -- The BIP method is an accepted allocation  
15 approach that attempts to recognize the capacity/energy trade-off that actually exists  
16 within a utility's portfolio of generation assets. A utility's base load units tend to run  
17 during all (or most) periods of the year; i.e., both peak load periods as well as to satisfy  
18 energy requirements in the most efficient manner possible during minimum demand  
19 periods (e.g., during the middle of the night). Because base load units operate regardless  
20 of peak requirements, they are most appropriately classified as energy-related. At the  
21 opposite end of the spectrum are peaking units, such as combustion turbines. These units  
22 operate with high variable costs and are only utilized to help meet peak period demands.  
23 As such, peakers are classified as peak demand-related. Intermediate plants (e.g., many  
24 combined cycle units) are not as efficient as large base load plants but more efficient than  
25 peaking units. For this reason, Intermediate plants are not called upon (dispatched)  
26 during periods of minimum (base) load but are dispatched before, and more frequently,  
27 than peaker units. Therefore, Intermediate plants can be said to serve a dual purpose:  
28 partially energy-related and partially demand-related. Intermediate plants are typically  
29 classified as partially energy-related and partially demand-related based on their

1           respective capacity or availability factors.<sup>1</sup> In my opinion, the BIP method is an excellent  
2           cost allocation approach for many utilities as it captures the actual differences in the  
3           capacity/energy trade-off that exist across a utility's generation mix. The BIP method  
4           may not be appropriate for utilities that purchase the majority of their energy needs or for  
5           utilities with an inefficient mix of generating resources.  
6

7           **Q. MR. WATKINS, YOU HAVE DISCUSSED THE STRENGTHS AND**  
8           **WEAKNESSES OF THE MORE COMMON GENERATION ALLOCATION**  
9           **METHODOLOGIES. ARE ANY OF THESE METHODS CLEARLY INFERIOR**  
10           **IN YOUR VIEW?**

11           A.           Yes. In my opinion the 1-CP and seasonal CP (such as 4-CP) methods do not  
12           reasonably reflect cost causation for integrated electric utilities because these methods  
13           totally ignore the utilization of a utility's facilities. Perhaps the simplest way to explain  
14           this is to consider that the methodology selected is used to allocate Generation plant  
15           investment. Generation investment costs vary from a low of a few hundred dollars per  
16           KW of capacity for high running cost (energy cost) peakers to several thousand dollars  
17           per KW for base load nuclear facilities with low running costs. If a utility were only  
18           concerned with being able to meet peak load with no regard to running costs, it would  
19           simply install inexpensive peakers. Under such an unrealistic system design, plant costs  
20           would be much lower than in reality but running costs; i.e., variable fuel costs would be  
21           astronomical, and would result in a higher overall cost to serve customers. The 1-CP and  
22           seasonal CP methods totally ignore this very important fact.  
23

24           **Q. MR. SEELYE HAS USED WHAT HE REFERS TO AS A MODIFIED BIP**  
25           **METHOD TO ALLOCATE GENERATION COSTS. DID HE CALCULATE THE**  
26           **BIP METHOD IN A REASONABLE MANNER?**

27           A.           Mr. Seelye's Modified BIP method does not follow the generally accepted BIP  
28           approach, and in fact, I have never seen Mr. Seelye's method used in any other cases or  
29           utilities. However, I would be reluctant to say his approach is totally unreasonable.

---

<sup>1</sup> Capacity factor is the ratio of average utilization (output) over a year to peak hour output. Availability factor is the ratio of average utilization during periods when a unit is available for dispatch (i.e., excludes outages) to peak hour output.

Whereas Mr. Seelye's Modified BIP method does allocate a portion of generation facilities based on energy (34.89%) and a portion on peak demands (65.11%), his approach does not reflect the actual mix of supply resources utilized by LG&E. At this point, it should be noted that LG&E's and Kentucky Utilities' ("KU") generation resources are centrally dispatched. Both Mr. Seelye and I have recognized this combined central dispatch in our allocation studies. When I refer to LG&E's actual generation resources, I am referring to the joint resources of LG&E and KU and not the individual legal ownership of these plants for booking purposes.

The traditional BIP method is a supply-based approach that classifies generation plant between energy-related and demand-related; i.e., it considers the actual supply characteristics of a utility's generation portfolio. These supply based classifications are then allocated to classes based on demand-side criteria (kWh usage and KW peak demand).

Mr. Seelye's approach ignores the actual supply-side characteristics of EON's generation portfolio because it only considers relative differences in system usages and demands. In fact, given EON's retail customers combined usage and demand profiles, Mr. Seelye's approach would classify a utility's generation investment exactly the same regardless of its actual portfolio mix of plants. Mr. Seelye's classification would be identical if EON's portfolio mix was comprised entirely of base load units or entirely of peaking units. In my opinion, this assumption (or result) is not consistent with the intent of the BIP method. Namely, to recognize the capacity/energy tradeoff actually present in a system.

**Q. PLEASE EXPLAIN THE ACTUAL COMPOSITION OF EON'S GENERATION RESOURCES.**

A. With the addition of Trimble County Unit #2, EON's generation capacity will be about 9,600 MW. The following is a summary of this generation portfolio by Fuel Type:

Fuel	MW Capacity	% Of Total
Coal	6,998	73%
Gas/Oil	2,499	26%
Hydro	113	1%
Total	9,610	100%

As can be seen above, about 73% of EON's generation comes from very low cost coal plants. Furthermore, the combined LG&E and KU peak native load is about 6,550 MW, which is lower than the capacity of EON's coal plants. This is especially relevant for cost allocation purposes since EON's coal plants tend to be base load plants in nature. That is, they operate with low variable operating expenses per unit (KWH) and have very high availability factors in the 80% to 90% range. This actual mix of generation assets is dissimilar to most electric utilities in the United States which rely on a much higher percentage of intermediate (high variable cost) plants primarily utilizing natural gas for fuel. Indeed, Kentucky ratepayers and shareholders alike are very fortunate to have an abundance of low cost electric energy resources.

**Q. DOES MR. SEELYE'S COST ALLOCATION METHODOLOGY REFLECT THE FACT THAT EON'S GENERATION PORTFOLIO IS COMPRISED PRIMARILY OF BASE LOAD UNITS?**

A. No.

**Q. PLEASE EXPLAIN HOW YOU CONDUCTED YOUR TRADITIONAL BIP METHOD.**

A. During the discovery phase of this proceeding, LG&E provided the order of economic dispatch for each of its generation units.<sup>2</sup> With this information, along with generating plant information provided in EON's 2008 Integrated Resource Plan ("IRP"), such as fuel type, nameplate capacity (MW), annual KWH generation, capacity factors, and availability factors, I was able to separate each generation unit into Base,

<sup>2</sup> Economic Order of dispatch is based on variable running costs. That is, the unit with the lowest running costs (primarily fuel) per unit of KWH output is dispatched first, followed by the next least expensive generation facility, and so forth.

1 Intermediate, Peak, or Hydro. Base load units are classified as 100% energy-related as  
2 they are designed and utilized to meet energy requirements throughout the year; i.e., they  
3 are low-cost units that serve energy needs and are not installed to meet short time period  
4 peak load requirements. Conversely, peak load (peaker) units are classified as 100%  
5 demand-related because of their high cost of output; i.e., they are dispatched and utilized  
6 only to meet peak load requirements. Intermediate plants operate at higher variable costs  
7 per unit than base load units yet are considerably less costly to operate than peak units,  
8 and are dispatched during periods of Intermediate demand (higher than base load but  
9 lower than peak period loads). I have followed the industry practice of classifying these  
10 units between energy and peak demand based on each facility's capacity factor. Finally, I  
11 have classified EON's Hydro facilities as 100% energy-related as they are run of the river  
12 or flood control facilities and have little or no ability to reliably meet peaking  
13 requirements.

14 The results of my BIP generation classification is presented in my Schedule  
15 GAW-2. My BIP generation classification study results in the following aggregate  
16 generation classification:

17	Energy-related:	82.12%
18	Demand-related:	17.88%

19  
20 **Q. IN HIS REBUTTAL TO YOUR CCROSS FINDINGS IN LG&E'S 2008 RATE**  
21 **CASE (CASE NO. 2008-000252), MR. SEELYE INDICATED THAT HE COULD**  
22 **NOT RECALL EVER SEEING COST OF SERVICE STUDIES THAT**  
23 **ALLOCATE SUCH A LARGE PERCENTAGE (82%) OF PRODUCTION AND**  
24 **TRANSMISSION CAPACITY COSTS ON THE BASIS OF ENERGY. ARE YOU**  
25 **AWARE OF OTHER UTILITY STUDIES WITH SIMILARLY HIGH**  
26 **PRODUCTION AND TRANSMISSION PLANT ENERGY CLASSIFICATIONS?**

27 **A.** Yes. Electric energy produced in the Pacific Northwest is comprised of a high  
28 percentage of base load hydro generation (primarily from the Columbia River System) as  
29 well as significant contributions from very large coal facilities in Western Montana  
30 (Colstrip, MT). As a result of this disproportionate mix of base load generation, all of the  
31 major investor-owned utilities in this region classify the vast majority of generation and



1 transmission rate base (capacity costs) as energy-related. In its 2009 rate case, Puget  
2 Sound Energy sponsored class cost of service study classified its generation and  
3 transmission assets as 79% energy and 21% demand. Avista's developed 2009 study  
4 classified generation assets as 76% energy-related, and PacifiCorp's 2009 CCOSS  
5 classified generation rate base as 88% energy-related.<sup>3</sup>  
6

7 **Q. HOW DO THESE LOW ENERGY COST ELECTRIC UTILITIES IN THE**  
8 **PACIFIC NORTHWEST RELATE TO THE COAL DOMINATED**  
9 **GENERATION MIX OF EON?**

10 A. What is important to understand is that neither the Pacific Northwest utilities nor  
11 EON are "typical" U.S. utilities in terms of generation mix. Ratepayers and shareholders  
12 are fortunate to reap the benefit of low energy cost generation for each of these utilities.  
13 All ratepayers benefit from the low cost energy produced from their respective base load  
14 dominated utility. In turn, all ratepayers should share in the costs required to provide this  
15 low cost energy in a proportionate and fair manner. Remembering that base load units  
16 have a much higher capacity cost per KW than less efficient peaker units, all ratepayers  
17 should proportionately share in the fixed costs associated with those base load units that  
18 make low cost energy possible. In other words, it is not reflective of cost causation nor is  
19 it fair for all customers to reap the benefits of low variable cost output (energy KWH) yet  
20 ask certain groups of customers to pay a disproportionate share of the fixed capacity costs  
21 that make this low cost energy possible. In my opinion, and as evidenced from the actual  
22 cost structure of EON's generation facilities, Mr. Seelye's 35% energy classification does  
23 not adequately reflect cost causation nor reasonably assign costs to classes proportionate  
24 to the benefits received.  
25

26 **Q. WHAT ARE THE CLASS RATES OF RETURN ON RATE BASE AT CURRENT**  
27 **RATES UTILIZING YOUR TRADITIONAL BIP METHOD TO CLASSIFY**  
28 **GENERATION PLANT?**

---

<sup>3</sup> Puget Sound Energy, Washington Utilities and Transportation Commission ("WUTC") Docket No. UE-090704; Avista, WUTC Docket No. UE-090134; and, PacifiCorp, WUTC Docket No. UE-090205.

A. Individual class rates of return utilizing the traditional BIP classification method, compared to Mr. Seelye's Modified BIP are presented below. It should be noted that the following OAG results only reflect adjustments to generation and production costs, they do not reflect my other CCOSS adjustments that I will also explain in my testimony:

Class	OAG Traditional BIP	Seelye Modified BIP
Residential	3.66%	3.19%
General Service	10.09%	9.12%
PS-Primary	4.38%	4.86%
PS-Secondary	-6.50%	6.62%
CTOD-Primary	3.00%	4.47%
CTOD-Secondary	-3.94%	4.42%
ITOD-Primary	-1.97%	3.31%
ITOD-Secondary	-4.32%	5.27%
RTS-Transmission	1.47%	2.91%
Sp. Contract-Ft. Knox	-0.24%	-0.16%
Sp. Contract-Water Companies	-1.23%	-0.34%
Lighting-RLS & LS	7.10%	8.88%
Lighting-LE	-2.50%	3.38%
Lighting-Traffic	-0.27%	4.25%
Total Company	4.77%	4.77%

**B. Distribution**

**Q. AS WE MOVE DOWNSTREAM FROM GENERATION THROUGH TRANSMISSION TO THE DISTRIBUTION SYSTEM, HOW HAS MR. SEELYE ASSIGNED DISTRIBUTION COSTS TO RATE SCHEDULES AND CUSTOMER CLASSES?**

A. Mr. Seelye has allocated Distribution plant and expenses partially on the basis of number of customers and partially on the basis of peak demand. I concur with Mr. Seelye's selection of customer and demand allocators for Distribution plant. However, there is often controversy regarding the portion of Distribution plant that should be allocated on number of customers and the portion that should be allocated on demand. This separation between customer-related and demand-related Distribution plant is referred to as the classification of Distribution plant.

1 **Q. PLEASE EXPLAIN THE TERM "CLASSIFICATION OF DISTRIBUTION**  
2 **PLANT."**

3 A. In the broadest sense, an embedded CCOSS is undertaken using a three-tiered  
4 approach. First, costs are functionalized as Production, Transmission, Distribution,  
5 General, and/or customer. These functionalized costs are then classified as energy,  
6 demand, or customer-related. Finally, classified costs are then allocated to individual  
7 classes. With respect to the classification of Distribution plant, it is generally recognized  
8 that there are no energy-related costs. That is, the distribution system is designed to meet  
9 localized peak demands. However, largely as a result of differences in customer densities  
10 throughout a utility's service area, electric utility Distribution plant often is classified as  
11 partially demand-related and partially customer-related.

12  
13 **Q. WHY IS THE CLASSIFICATION OF DISTRIBUTION PLANT IMPORTANT IN**  
14 **CCOSS ANALYSES?**

15 A. The classification of Distribution plant may be the single most important factor  
16 affecting class rates of return. To illustrate the importance of this issue, consider the  
17 Residential class: whereas this class may account for only 40% to 50% of peak demand,  
18 it is responsible for a much higher percentage of the number of customers. Therefore,  
19 given the level of investment associated with Distribution plant, wide variations in class  
20 rates of return can result from different customer/demand classifications.

21  
22 **Q. WHY ARE THE DIFFERENCES IN CUSTOMER DENSITIES IMPORTANT IN**  
23 **THE ASSIGNMENT OF DISTRIBUTION COSTS TO INDIVIDUAL CLASSES?**

24 A. Possibly the best way to answer this question is by way of example. Consider two  
25 different electric utilities: one similar to LG&E with urban, suburban, and rural service  
26 areas and one similar to Consolidated Edison Company, which is mainly urban. With  
27 respect to the utility with a rural service area, many miles of conductors and associated  
28 plant must be installed in order to serve the demands of relatively few customers.  
29 Conversely, many more customers are served on a per mile basis for the urban utility.  
30 For the urban utility, it may be fair and reasonable to allocate Distribution plant solely on  
the basis of peak demands. However, with respect to the utility with a rural service area,

1 such an allocation may be unfair if some classes are located mainly in urban or suburban  
2 areas, while other classes of customers are located in urban, suburban, and rural areas.  
3 As a result, many utilities classify Distribution plant as partially demand- related and  
4 partially customer-related. In this manner, a portion of Distribution plant is allocated  
5 based on a peak demand, and a portion allocated based on number of customers.  
6

7 **Q. HOW DOES ONE DETERMINE HOW MUCH DISTRIBUTION PLANT**  
8 **SHOULD BE CLASSIFIED AS DEMAND-RELATED AND HOW MUCH AS**  
9 **CUSTOMER-RELATED?**

10 A. Once the decision is made that Distribution plant should be allocated considering  
11 both peak demand and number of customers, there are two generally accepted methods  
12 for determining the portions or percentages that should be allocated on each basis. These  
13 two methods are known as the minimum size and zero-intercept approaches. Under both  
14 methods, a study is conducted for each major plant account within the distribution  
15 system. That is, each account is studied and assigned its own customer and demand  
16 components.

17 The minimum size method rests on the premise that the minimum, or smallest  
18 size, installed equipment makes up the distribution network to connect customers to the  
19 distribution system, and that all larger sizes of equipment serve peak demands. In  
20 practice, the cost per unit of the smallest sized installed equipment is determined. This  
21 minimum cost per unit is then multiplied by the total number units in the system to arrive  
22 at a total customer amount. The total customer amount is then divided by the total cost  
23 for the account to determine the customer percentage. As the compliment, one minus the  
24 customer percentage equals the demand percentage.

25 The zero-intercept method is similar to the minimum size method, except for the  
26 determination of the minimum cost per unit. The zero-intercept method recognizes that  
27 even the smallest installed piece of equipment has a demand component, because it too is  
28 designed and installed to meet the peak load placed on that equipment. The zero-  
29 intercept method attempts to arrive at the "theoretical" cost of a piece of plant or  
30 equipment capable of carrying zero load. This is accomplished using statistical  
regression techniques whereby the per unit costs of various sizes of equipment are

determined and a best fitting line is fitted into an equation form. The point at which the fitted line intersects the cost axis at zero size is called the zero-intercept. The zero-intercept cost then serves as the minimum, or zero size, cost per unit.

**Q. IS ONE METHOD PREFERRED OVER THE OTHER?**

A. In general, I prefer to use the zero-intercept method when possible and appropriate. However, as with most aspects of ratemaking where there is not a universally accepted formula, each approach has its advantages and disadvantages. The major criticisms I have regarding the minimum size method is that this method tends to overstate the customer percentage because even the smallest installed size is used to meet some level of peak demand. The primary weaknesses of the zero-intercept method are that more data and a good working knowledge of statistical linear regression analyses are required, and sometimes there is no strong correlation between costs and sizes (capacity) of distribution equipment.

**Q. HOW APPROPRIATE IS EITHER METHOD FROM A DESIGN OR OPERATIONAL PERSPECTIVE?**

A. First and foremost, the classification of Distribution plant as partially customer-related and partially demand-related results from the view that the allocation of these plant items based solely on peak demands would not be equitable to some classes. I emphasize this point, because many analysts "lose sight of the forest for the trees". When classifying individual accounts within Distribution plant, analysts sometimes ignore how a distribution system is actually designed and constructed.

There are three major factors the analyst should keep in mind when classifying Distribution plant. First, there are often alternatives across plant and equipment. For example, the need for a particular transformer may be erased if a larger size conductor is used. Alternatively, fewer and smaller poles may be required if lighter conductors are used. Second, and more importantly, is the fact that purchasing economies are usually present. For example, there are dozens of various types of overhead conductors manufactured. However, due to purchasing economies, a utility may only purchase a few different sizes of conductor. This may result in some "over capacity", yet, the total

1 installed cost is less than if every segment of the system is optimally designed. Third,  
2 most components of the distribution system are somewhat oversized for other reasons  
3 such as safety, reliability, current looping and growth uncertainty.

4 Although, these three factors are reflective of how distribution systems are  
5 actually designed and installed, neither the minimum size nor the zero-intercept method  
6 account for these factors. In fact, the presence of these three factors can seriously skew  
7 the results of either method. If the weakness is not captured or recognized, inequitable  
8 class allocations may result.

9  
10 **Q. HOW DID MR. SEELYE CLASSIFY DISTRIBUTION PLANT BETWEEN**  
11 **CUSTOMER-RELATED AND DEMAND-RELATED COMPONENTS?**

12 A. My Seelye claims to have conducted a zero-intercept analysis to develop  
13 customer/demand classifications for distribution Overhead lines, underground lines, and  
14 transformers. I take exception to Mr. Seelye's reference to his proposed classifications as  
15 a "zero-intercept" derived study, and I disagree with his approach.

16  
17 **Q. PLEASE EXPLAIN HOW AN INDUSTRY ACCEPTED ZERO-INTERCEPT**  
18 **STUDY IS CONDUCTED.**

19 A. Under accepted industry practices, which are well documented in various cost  
20 allocation manuals,<sup>4</sup> the zero-intercept method is very straight-forward. First, various  
21 types of equipment are separated by capacity size and type. Next, historical accounting  
22 costs are trended by vintage year to reflect cost differences over time. For each size and  
23 type of equipment, the total dollars and total units (feet or number of units) are  
24 considered as well as the capacity (size) of each type of equipment. Because the overall  
25 objective is to estimate the cost of a "zero-size" piece of equipment, total costs are  
26 divided by total units (feet or unit) for each type of equipment to derive an average cost  
27 per foot or per unit. A regression model is then developed based on the following general  
28 form:

29 
$$\text{cost/unit} = a + b (\text{size})$$

---

<sup>4</sup> See for example the National Association of Regulatory Utility Commissions ("NARUC") Electric Utility Cost Allocation Manual, 1992, pages 92 through 94.

1 The resulting intercept (a) produces the estimated cost per unit of a “zero-size” piece of  
2 equipment. This estimated zero-size cost per unit is then multiplied by the total units in  
3 the system to estimate a zero-size total cost. The ratio of total zero size costs to trended  
4 total actual costs represents the percentage of zero-size equipment and serves as the  
5 customer percentage.

6 The above industry standard is in stark contrast to Mr. Seelye’s method presented  
7 in his Seelye Exhibits 25, 26, and 27. Mr. Seelye refers to his approach as a “weighted  
8 regression analysis.” Although this “weighted regression analysis” is a clever arithmetic  
9 exercise, it violates theoretical statistical principles of linear regression and skews his  
10 results. Moreover, on page 91 of his direct testimony, Mr. Seelye states:

11 “Like most electric utilities, the feet of conductors and number of  
12 transformers on LG&E’s system is not uniformly distributed over all sizes  
13 of wire and transformer. For this reason, it was necessary to use a  
14 weighted regression analysis, instead of a standard least-squares analysis,  
15 in the determination of the zero intercept.”  
16

17 It is interesting that Mr. Seelye finds LG&E’s system to be typical of other utilities, yet,  
18 his approach varies dramatically from the industry practice that has been used by  
19 countless utilities, commissions, and analysts for decades.

20 To understand the bias in Mr. Seelye’s “weighted regression analysis,” we must  
21 fully understand the mathematical model he derives. Using Overhead Conductors as an  
22 example, consider Mr. Seelye’s analysis presented in his Exhibit 25. Although not shown  
23 in his exhibit, Mr. Seelye’s equation for Overhead Conductors is:

$$24 \quad (\text{cost per foot} \times \text{feet}^{0.5}) = 0 + 0.75697(\text{feet}^{0.5}) + 0.00366(\text{size} \times \text{feet}^{0.5})$$

25 Notice that the equation’s true intercept is forced to zero. However, if capacity is set to  
26 zero, the second term  $[0.00366(\text{size} \times \text{feet}^{0.5})]$  becomes zero. If we then ask what is the  
27 cost for a foot of a zero size conductor we see that  $\text{feet}^{0.5} = 1^{0.5} = 1$ , such that the cost for  
28 one foot becomes \$0.75697. This is the zero-intercept used by Mr. Seelye.

29 To illustrate the bias in Mr. Seelye’s analysis, consider the following hypothetical  
30 example of his approach for a system “not uniformly distributed over all sizes of wire”:  
31  
32  
33

Total Cost	Cost Per Foot (y)	Capacity (x)	Feet (n)	$y(n^{0.5})$	$n^{0.5}$	$x(n^{0.5})$
\$350.00	3.50	2.00	100	35	10.00	20.00
250.00	5.00	4.00	50	35.355339	7.07	28.28
62,500.00	6.25	6.00	10,000	625	100.00	600.00
164.00	8.20	8.00	20	36.671515	4.47	35.78
\$99.50	9.95	10.00	10	31.464663	3.16	31.62

Under the correct, and accepted zero-intercept method, the following regression equation results:

$$\text{cost/feet} = 1.75 + 0.805(\text{size})$$

Therefore, a zero-size cost is estimated to be \$1.75 per foot. Using the same data, the following equation is produced using Mr. Seelye's approach:

$$\text{cost per foot} \times \text{feet}^{0.5} = 0 + 1.9815(\text{feet}^{0.5}) + 0.7120(\text{size} \times \text{feet}^{0.5})$$

Mr. Seelye's approach results in a zero cost per foot of \$1.9815 as compared to the industry accepted cost per foot of \$1.75.

**Q. WHAT ARE THE RESULTS OF MR. SEELYE'S CLASSIFICATION OF DISTRIBUTION PLANT?**

A. Mr. Seelye classifies distribution plant as follows:

Account	Percentage	
	Customer	Demand
Overhead Conductors	54.45%	45.55%
Underground Conductors	30.81%	69.19%
Line Transformers	45.67%	54.33%

**Q. HAVE YOU UNDERTAKEN AN INDEPENDENT ANALYSIS OF THE CLASSIFICATION OF ELECTRIC DISTRIBUTION PLANT FOR LG&E?**

A. Yes. I have taken a traditional zero-intercept approach to the analyses of LG&E Accounts 365 (Overhead Conductors), 367 (Underground Conductors), and 368 (Line



1 Transformers). In my analyses, I have relied on Mr. Seelye's account data provided in  
2 Seelye Exhibits 25, 26 and 27, except for one significant revision.

3  
4 **Q. PLEASE DISCUSS THE SIGNIFICANT REVISION YOU HAVE**  
5 **INCORPORATED IN YOUR ZERO-INTERCEPT ANALYSES OF ACCOUNTS**  
6 **365, 367 AND 368.**

7 A. In his regression formulations of "average cost" as a function of "size," Mr.  
8 Seelye's representation of "size" for the units of plant is a physical measurement  
9 (circular-mils). As an example, with regard to Account 365 (Overhead Conductors), Mr.  
10 Seelye's representation of the "size" of 1/0 Conductor and 2/0 Conductor is, respectively,  
11 105.6 and 133.1. These are the physical sizes of the conductor and not the load carrying  
12 capacity of these wires. While I have used Mr. Seelye's 21 categories of LG&E's  
13 various sizes and types of overhead conductors; e.g., average cost, quantity, etc., I have  
14 not used Mr. Seelye's representation of "size" in my analyses. I have used the electrical  
15 load capability (ampacity) of each size and type of overhead conductor.

16  
17 **Q. WHY HAVE YOU INCORPORATED THE CAPACITY (AMPACITY) RATHER**  
18 **THAN SIMPLY THE SIZE OF CONDUCTORS IN YOUR ANALYSES?**

19 A. The purpose of the zero-intercept analysis is to calculate the average cost of a zero  
20 load conductor in order to evaluate the customer portion as I have discussed previously.  
21 In my zero-intercept analyses, therefore, I have incorporated the ampacity (capacity or  
22 load capability) of LG&E's overhead conductors, rather than merely the physical size of  
23 these conductors.

24  
25 **Q. HAVE YOU INCORPORATED THIS AMPACITY OR LOAD CAPABILITY IN**  
26 **ALL OF YOUR ZERO-INTERCEPT ANALYSES?**

27 A. Yes. I have incorporated an ampacity measurement for each of the overhead  
28 conductors and underground conductors and KVA capacity for line transformers in my  
29 zero-intercept analyses.

1 **Q. PLEASE PROVIDE A COMPARISON OF THE RESULTS OF YOUR ZERO-**  
2 **INTERCEPT ANALYSES TO THAT OF MR. SEELYE'S.**

3 A. The following table summarizes the results of my analyses and that of Mr. Seelye  
4 for LG&E's three electric distribution accounts for which classification analyses were  
5 performed:

	<u>Customer Portion</u>		<u>Demand Portion</u>	
	<u>Watkins</u>	<u>Seelye</u>	<u>Watkins</u>	<u>Seelye</u>
8 Account 365				
9 (Overhead Conductors)	26%	54%	74%	46%
10 Account 367				
11 (Underground Conductors)	19%	31%	81%	69%
12 Account 368				
13 (Transformers)	46%	46%	54%	54%

14  
15 The details supporting my classification of distribution plant are provided in my Schedule  
16 GAW-3 which consists of three pages.

17  
18 **Q. DO YOU HAVE ANY OTHER COMMENTS REGARDING ZERO-INTERCEPT**  
19 **ANALYSES OF LG&E'S DISTRIBUTION PLANT ACCOUNTS?**

20 A. Yes. While I have used the account data presented by Mr. Seelye, as I discussed  
21 above, I question why the data Mr. Seelye used for his Overhead Conductors (Account  
22 365) and Underground Conductors (Account 367) analyses are exactly the same for  
23 LG&E and KU, and different for Line Transformers (Account 368). The data used for  
24 the analyses clearly should be different between LG&E and KU, and in fact, the data  
25 were different data presented in the last case.

26  
27 **Q. WHAT ARE YOUR CCOSS RESULTS USING THESE CUSTOMER/DEMAND**  
28 **CLASSIFICATIONS?**

29 A. My recommended distribution plant classifications coupled with a traditional BIP  
30 approach to classify generation resources are reflected in my recommended CCOSS. The  
31 detail of this CCOSS is provided in my Schedule GAW-4 and are summarized below:

Class	ROR At Current Rates	
	OAG Recommended	Seelye
Residential	4.01%	3.19%
General Service	9.89%	9.12%
PS-Primary	4.01%	4.86%
PS-Secondary	6.06%	6.62%
CTOD-Primary	2.67%	4.47%
CTOD-Secondary	3.57%	4.42%
ITOD-Primary	1.69%	3.31%
ITOD-Secondary	3.90%	5.27%
RTS	1.47%	2.91%
Sp. Contract-Ft. Knox	-0.48%	-0.16%
Sp. Contract-Water Companies	-1.44%	-0.34%
Lighting-RLS & LS	7.43%	8.88%
Lighting-LE	-2.72%	3.38%
Lighting-Traffic	-0.21%	4.25%
Total Company	4.77%	4.77%

As can be seen above, although there are some differences in individual class rates of return, our studies produce relatively similar results.

**IV. ELECTRIC CLASS REVENUE INCREASE DISTRIBUTION**

**Q. HOW DOES MR. SEELYE PROPOSE TO ASSIGN LG&E'S PROPOSED OVERALL \$94.6 MILLION INCREASE ACROSS RATE CLASSES?**

A. Mr. Seelye proposes to assign the Company's overall requested revenue increase to individual classes on an equal percentage basis. That is, all rate classes would receive the same percentage increase in revenue responsibility (12.2%).

**Q. IS MR. SEELYE'S PROPOSED CLASS REVENUE DISTRIBUTION REASONABLE?**

A. Yes, given the fairly narrow range of achieved class rates of return under my CCOSS as well as under Mr. Seelye's analysis, an across the board (equal percentage) increase is fair and reasonable. In this regard, it should be remembered that allocated

1 cost of service results are not surgically precise and should, therefore, serve only as a  
2 guide in evaluating class revenue responsibility.

3  
4 **V. NATURAL GAS CLASS COST OF SERVICE**

5  
6 **Q. HAVE YOU EXAMINED MR. SEELYE'S NATURAL GAS CLASS COST OF  
7 SERVICE STUDY?**

8 A. Yes.

9  
10 **Q. WHAT METHODOLOGY DID MR. SEELYE USE FOR PURPOSES OF HIS  
11 NATURAL GAS CCROSS?**

12 A. Mr. Seelye used what is known as the Peak Responsibility method to allocate  
13 Mains costs. Furthermore, Mr. Seelye separated LG&E's Mains into "high pressure" and  
14 "low pressure" systems. Finally, Mr. Seelye classified both high pressure and lower  
15 pressure Mains as partially customer-related and partially demand-related. In short, Mr.  
16 Seelye has allocated Mains investment costs based partially on customer counts and  
17 partially on contributions to estimated design day demand.

18  
19 **Q. DO YOU HAVE ANY MAJOR DISAGREEMENTS WITH MR. SEELYE'S  
20 NATURAL GAS CCROSS?**

21 A. Yes.

22  
23 **Q. PLEASE OUTLINE YOUR DISAGREEMENTS.**

24 A. I disagree with Mr. Seelye's use of the Peak Responsibility method to allocate  
25 distribution Mains (low and high pressure).

26  
27 **Q. PLEASE EXPLAIN PEAK RESPONSIBILITY METHOD.**

28 A. The Peak Responsibility method is similar in concept to the 1-CP method  
29 previously discussed for the electric industry. The major difference is that whereas the 1-  
30 CP electric method is generally based on actual loads and demands, the Peak  
1 Responsibility method is based on estimated loads at design day temperatures. In other

1 words, design day demands are not known historical loads, but rather estimated class  
2 demands under the most extreme weather conditions.

3  
4 **Q. IS THERE A METHOD THAT IS PREFERRED OVER THE PEAK**  
5 **RESPONSIBILITY METHOD FOR LG&E'S NATURAL GAS OPERATIONS?**

6 A. Yes. The Peak and Average method is far superior for LG&E's natural gas  
7 operations.

8  
9 **Q. PLEASE EXPLAIN WHY THE PEAK AND AVERAGE METHOD IS**  
10 **PREFERRED.**

11 A. There are several reasons why the Peak and Average Method is preferred and why  
12 the Peak Responsibility method is not appropriate for LG&E. The first is the recognition  
13 of how and why natural gas consumers are customers of LG&E. Customers connect to  
14 LG&E's system in order to meet their natural gas needs throughout the year. Indeed, the  
15 Company's Mains are utilized each and every day of the year and recognition of annual  
16 usage (throughput) is a logical basis for cost assignment.

17 Another shortcoming of the Peak Responsibility method using design day demand  
18 is that the "design day" is a moving target over time. That is, whereas natural gas Mains  
19 are planned and installed to serve customers in excess of fifty years into the future, design  
20 day demand (as used by Mr. Seelye) is a function of the mix, usage per customer, and  
21 number of customers today. In addition LG&E's commercial customers have obviously  
22 changed over the last few decades. Yet, Mr. Seelye assumes the entire Company system  
23 was optimally designed and installed to meet today's mix and level of customers.

24  
25 **Q. HAVE YOU CONDUCTED A CLASS COST OF SERVICE STUDY THAT**  
26 **UTILIZES THE PEAK AND AVERAGE METHOD?**

27 A. Yes. I have accepted all other aspects (allocators and classifications) of Mr.  
28 Seelye's natural gas CCOSS except for his use of the Peak Responsibility method. It  
29 should be noted that while I disagree conceptually with Mr. Seelye that any portion of  
30 distribution Mains should be classified as partially customer related, I have accepted his

classification since his recommended customer percentages of Mains are relatively small.<sup>5</sup>

**Q. PLEASE PRESENT THE RESULTS OF YOUR NATURAL GAS CCOSS UTILIZING THE PEAK AND AVERAGE METHOD.**

A. The following is a summary of class rates of return at current rates utilizing my recommended Peak and Average method to allocate distribution Mains. Also provided are Mr. Seelye's results using his Peak Responsibility method.

Class	ROR at Current Rates	
	OAG Peak & Average	Seelye Peak Responsibility
RSG	4.53%	3.90%
CGS	7.61%	7.01%
IGS	4.28%	4.36%
AAGS	3.27%	16.85%
FT	2.32%	25.71%
SP	1.25%	25.05%
Total Company	5.06%	5.06%

The details of my recommended natural gas CCOSS are provided in my Schedule GAW-5.

**VI. NATURAL GAS CLASS REVENUE DISTRIBUTION**

**Q. PLEASE DESCRIBE LG&E'S PROPOSED DISTRIBUTION OF ITS REQUESTED OVERALL NATURAL GAS REVENUE INCREASE TO INDIVIDUAL CUSTOMER CLASSES.**

A. LG&E witness Seelye presents the Company's proposed distribution of requested \$22.59 million revenue increase to customer classes. A summary of Mr. Seelye's proposed natural gas revenue increase for each customer class is shown below. Note, that the percentage increases reflect increases to Base (non-gas) rates.

<sup>5</sup> Mr. Seelye customer percentage of high pressure mains is 6.97% while high customer percentage of low pressure mains is 14.82%.

Rate Class	Current Base Rate (Non-Gas) Revenue	LG&E Proposed Natural Gas Increases (\$000)	
		Amount	Percent
<u>Sales:</u>			
Residential (RGS)	\$76,545	\$16,197	21.2%
Commercial (CGS)	\$27,700	\$5,362	19.4%
Industrial (IGS)	\$1,759	\$363	20.4%
As-Available (AAGS)	\$198	\$0	0%
<u>Transportation:</u>			
Firm Transportation (FT)	\$4,364	\$0	0%
<u>Special Contracts:</u>			
Intra-Company	\$7,381	\$665	21.8%
Special Contract A	\$263	\$0	0%
Special Contract B	\$179	\$0	0%
<b>Total LG&amp;E</b>	<b>\$118,448</b>	<b>\$22,588</b>	<b>19.1%</b>

**Q. ARE MR. SEELYE’S PROPOSED CLASS REVENUE INCREASES REASONABLE?**

A. When all factors are considered, I do not object to Mr. Seelye’s class revenue increases. Although the results of my CCOSS indicate that the Transportation and Special Contract customers are providing significantly lower rates of return than other classes, Mr. Seelye’s study indicates exactly the opposite; i.e., these classes are over contributing. Notwithstanding the differences in our CCOSS results, Mr. Seelye also claims that there is a potential for by-pass for transportation and Special Contract customers if their rates are increased.

While Mr. Seelye provides no evidence as to whether any of these customers have a realistic ability to by-pass the LG&E system, I acknowledge that this is a valid concern when a real potential for by-pass exists. Mr. Seelye indicates that a natural gas transmission pipe runs through LG&E’s service area. However, this is in no way indicative of any customers having a realistic ability to by-pass LG&E. In order for an end user to by-pass its local distribution gas company, it must secure easements and/or rights of way to run a service lateral (pipe) to the transmission pipeline. Even if such

1 easements and/or rights of way can be secured, the transmission pipeline must agree to a  
2 new interconnection point. Finally, and perhaps most importantly, the distance between  
3 the end-user and the transmission pipeline must be close enough such that the capital  
4 costs to the customer constructing a service line make such a project economically viable.  
5 For some Industrial end-users whose facilities are adjacent to transmission pipelines, by-  
6 pass is a rather simple and economically viable alternative. However, as the distance  
7 between the end-user and transmission pipeline increases, the realistic threat of by-pass  
8 decreases. In this regard, I recommend that in its next case LG&E present detailed  
9 evidence of any specific customer's potential for by-pass, if special price considerations  
10 are requested for that customer.

11 In agreeing to accept Mr. Seelye's recommendation for no increase to  
12 Transportation and Special Contract customers in this case, I recommend that even if  
13 these customers' revenue were increased, the corresponding required increase to other  
14 customers would be de minimus in percentage terms. As such, I do not object to Mr.  
15 Seelye's proposed revenue increase allocation in this case, with the caveats noted for  
16 future rate cases.

17  
18 **VII. RESIDENTIAL RATE DESIGN**

19  
20 **Q. DOES LG&E PROPOSE ANY SIGNIFICANT CHANGES TO ITS ELECTRIC  
21 AND GAS RESIDENTIAL RATE STRUCTURES?**

22 A. Yes. LG&E proposes to substantially change its electric Residential base rate  
23 structure from a largely volumetric basis to a largely fixed fee charge per month basis.  
24 That is, whereas LG&E currently collects approximately 15% of its non-fuel base rate  
25 revenue from fixed monthly customer charges, (85% from energy charges) its proposed  
26 changes to rate design would collect approximately 33% of non-fuel base rate revenues  
27 from fixed customer charges. In order to accomplish this shift in revenue collection,  
28 LG&E proposes to increase its monthly electric Residential customer charge from \$5.00  
29 to \$15.00 and at the same time, reduce its base rate energy charge from 6.7140¢ per  
30 KWH to 6.6100¢ per KWH.



1 With regard to LG&E Residential natural gas rates, the Company proposes to  
2 collect 100% of its distribution (non-gas margin) revenue from fixed monthly charges  
3 thereby eliminating the variable usage (per MCF) component of its rates.  
4

5 **Q. MR. WATKINS, HAVE YOU IDENTIFIED A COMMON OBJECTIVE IN**  
6 **LG&E'S RESIDENTIAL RATE DESIGN PROPOSALS?**

7 A. Yes. It is clear from the testimony of Mr. Seelye that the primary objective of  
8 LG&E's Residential rate design is to guarantee revenue collection and profitability  
9 associated with fixed monthly customer charges. Indeed, as stated on page 39 of his  
10 direct testimony, Mr. Seelye claims that "by recovering its fixed distribution [gas] costs  
11 through a fixed monthly charge, the Company would be severing the relationship  
12 between its natural gas delivery revenue and its sales of natural gas.  
13

14 **Q. WHY DOES LG&E DESIRE MORE ELECTRIC AND ALL NATURAL GAS**  
15 **RESIDENTIAL REVENUE RECOGNITION FROM CUSTOMER CHARGES?**

16 A. Fixed monthly customer charges represent guaranteed revenue to LG&E. This  
17 guarantee of revenue obviously reduces the risk of LG&E's operations and provides  
18 much more assurances of net income available to shareholders.  
19

20 **Q. OTHER THAN DECOUPLING THE LINK BETWEEN PROFITABILITY AND**  
21 **VOLUMETRIC SALES, DOES MR. SEELYE PROVIDE OTHER**  
22 **JUSTIFICATIONS FOR HIS PROPOSAL TO COLLECT SUBSTANTIALLY**  
23 **MORE OF ITS ELECTRIC RESIDENTIAL AND 100% OF ITS GAS**  
24 **RESIDENTIAL BASE RATE REVENUES FROM FIXED MONTHLY**  
25 **CHARGES?**

26 A. Yes. Mr. Seelye provides two underlying reasons for his partial electric, and total  
27 natural gas, revenue decoupling rate design proposals. Mr. Seelye claims that traditional  
28 volumetric based rate design provides a disincentive for the Company to promote  
29 conservation and because of the high percentage of fixed cost inherent in providing  
30 electric and natural gas service, prices (rate design) should reflect the Company's  
1 relationship between fixed and variable costs.

1 **Q. IS LG&E CURRENTLY COMPENSATED FOR ITS CONSERVATION**  
2 **EFFORTS?**

3 A. Yes. LG&E currently has a Demand Side Management surcharge for both  
4 electric and natural gas service, which compensates the Company for its conservation  
5 program costs. In fact, not only is LG&E compensated for its costs to administer  
6 conservation efforts, it is also allowed an extra profit incentive over and above the costs  
7 of its DSM programs and compensation for its lost sales.  
8

9 **Q. NOTWITHSTANDING LG&E'S RECENT DSM INCENTIVES AND**  
10 **ATTENDANT RATE RIDERS, HAVE RESIDENTIAL CUSTOMERS BEEN**  
11 **USING ELECTRICITY AND NATURAL GAS IN A MORE EFFICIENT**  
12 **MANNER OVER THE LAST COUPLE OF DECADES?**

13 A. Absolutely. Virtually all Residential electric and natural gas appliances are much  
14 more energy efficient than they were even ten years ago. As a result, the average  
15 Residential energy consumption per appliance has been declining steadily over the last  
16 decade or two. These market-based conservation measures have prevailed in spite of the  
17 so-called "disincentives" to conserve energy resources as alluded to by Mr. Seelye.  
18

19 **Q. DOES THE LONG-TERM DECLINE IN THE RESIDENTIAL AVERAGE**  
20 **USAGE PER CUSTOMER SUPPORT THE NEED FOR GUARANTEED**  
21 **REVENUE RECOVERY?**

22 A. No. While LG&E's electric and natural gas declining usage per appliance is  
23 similar to that experienced by other utilities, LG&E's Residential rates (prices) have  
24 reflected this decline in usage in every rate case. Secondly, there is no doubt that both  
25 Residential electric usage per appliance and total natural gas usage per customer have  
26 been declining over the last ten to twenty years; this declining use has been true for  
27 LG&E as well as the electric and natural gas industry in general. Indeed, this change in  
28 usage is nothing new to LG&E or the industry.  
29

**Q. HAVE THE ELECTRIC AND NATURAL GAS UTILITY INDUSTRIES BEEN ABLE TO REMAIN FINANCIALLY VIABLE OVER THE YEARS ABSENT A FIXED CHARGE RATE DESIGN?**

A. Yes. For decades the pricing structure of electric and natural gas LDC's have been largely volume based. These industries have remained viable and have achieved at the very least, respectable returns on their investments with this volumetric based rate structure. For example, faced with declining Residential usages per customer and largely volumetric rate structures, the Value Line group of natural gas utility companies have achieved the following average rates of return on common equity each year since 2000:

Year	Value Line Natural Gas Utility Rate of Return on Common Equity <u>a/</u>
2000	12.4%
2001	12.8%
2002	12.3%
2003	12.1%
2004	11.2%
2005	12.0%
2006	12.4%
2007	11.6%
2008	11.8%
2009	12.4%
<u>10-yr. Avg.</u>	<u>12.1%</u>

a/ Calculated per Schedule GAW-6.

Similarly, the electric utility industry has achieved the following annual rates of return:

Year	Value Line Electric Utility Rate of Return on Common Equity <u>a/</u>
2000	11.3%
2001	12.2%
2002	8.4%
2003	9.5%
2004	9.9%
2005	10.4%
2006	11.0%
2007	11.2%
2008	10.3%
2009	9.6%
10-yr. Avg.	10.3%

a/ Calculated per Schedule GAW-7.

As such while it is true that the electric and natural gas industries have been faced with declining usages per appliance or customer due to improvements in appliance efficiency, earnings (with revenue calculated largely from volumetric based prices) have been achieved at high levels. These high earnings are largely a result of periodic rate increases, cost savings from technological advances, and economies of scale due to mergers.

**Q. DOES LG&E'S PROPOSAL TO COLLECT A SUBSTANTIAL PORTION OF ITS ELECTRIC NON-FUEL REVENUE AND 100% OF ITS RESIDENTIAL NATURAL GAS MARGIN REVENUE FROM FIXED MONTHLY CHARGES COMPORT WITH THE ECONOMIC THEORY OF COMPETITIVE MARKETS OR THE ACTUAL PRACTICES OF SUCH COMPETITIVE MARKETS?**

A. No. The most basic tenet of competition is that prices determined through a competitive market ensure the most efficient allocation of society's resources. Because public utilities are generally afforded monopoly status under the belief that resources are better utilized without the duplication of the fixed facilities required to serve consumers, a fundamental goal of regulatory policy is that regulation should serve as a surrogate for

1 competition to the greatest extent practical.<sup>6</sup> As such, the pricing policy for a regulated  
2 public utility should mirror those of competitive firms to the greatest extent practical.

3  
4 **Q. PLEASE BRIEFLY DISCUSS HOW PRICES ARE GENERALLY STRUCTURED**  
5 **IN COMPETITIVE MARKETS.**

6 A. Economic theory tells us that efficient price signals result when prices are equal to  
7 long-run marginal costs. It is well known that in the long-run all costs are variable and,  
8 hence, efficient pricing results from the incremental variability of costs even though a  
9 firm's short-run cost structure may include a high level of sunk or "fixed" costs or be  
10 reflective of excess capacity. Indeed, competitive market-based prices are generally  
11 structured based on usage, i.e. volume based pricing.

12  
13 **Q. PLEASE EXPLAIN HOW THIS THEORY OF COMPETITIVE PRICING**  
14 **SHOULD BE APPLIED TO REGULATED PUBLIC UTILITIES, SUCH AS**  
15 **LG&E.**

16 A. Due to LG&E's investment in system infrastructure, there is no debate that many  
17 of its short-run costs are fixed in nature. However, as discussed above, efficient  
18 competitive prices are established based on long-run costs, which are entirely variable in  
19 nature.

20 Marginal cost pricing only relates to efficiency. This pricing does not attempt to  
21 always address fairness or equity. From a perspective of fair and equitable pricing of a  
22 regulated monopoly's products and services, it is generally agreed that payments for a  
23 good or service should be in accordance with the benefits received. In this regard, those  
24 that receive more benefits should pay more in total than those who receive fewer  
25 benefits. With respect to electric and natural gas usage, the volume of consumption is  
26 the most direct, and in my opinion the best indicator of benefits received, such that  
27 volumetric pricing promotes the fairest pricing mechanism to customers and to the  
28 utility.

29 The above philosophy is, and has been, the belief of economists, regulators, and  
30 the marketplace for many years. As an illustration, consider utility industry pricing in its

---

<sup>6</sup> James C. Bonbright, et al Principles of Public Utility Rates at 141 (2d ed. 1988).

1 infancy (1800s). In the beginning, customers paid a fixed monthly fee and consumed as  
2 much of the utility commodity/service as they desired (usually water). It soon became  
3 apparent that the fixed monthly fee rate schedule was inefficient and unfair. Utilities  
4 soon began metering their commodity/service and charging only for the amount actually  
5 consumed. In this way, consumers receiving more benefits from the utility than others  
6 paid more in total for the utility service because they used more of the commodity.

7 Furthermore, virtually every capital intensive industry is faced with a high  
8 percentage of fixed costs in the short-run. This includes the manufacturing and  
9 transportation industries. Prices for competitive products and services in these industries  
10 are invariably established on a volumetric basis, including those that were once  
11 regulated; e.g., motor transportation, airline travel, and rail service.

12 Accordingly, the position of Mr. Seelye that LG&E's fixed costs should be  
13 recovered through fixed monthly charges, in my view, is incorrect since pricing should  
14 reflect long-run cost incidence wherein all costs are variable or volumetric in nature, and  
15 that users requiring more of LG&E's products and services pay more than customers who  
16 use less of these products and services.

17  
18 **Q. DOES LG&E'S PROPOSAL TO COLLECT A SUBSTANTIALLY GREATER**  
19 **PORTION OF ITS ELECTRIC RESIDENTIAL REVENUES AND 100% OF ITS**  
20 **NATURAL GAS MARGIN REVENUES FROM FIXED MONTHLY CUSTOMER**  
21 **CHARGES COMPORT WITH PROPER RATEMAKING PRINCIPLES?**

22 A. No. Perhaps the most highly regarded, and certainly the most commonly used  
23 reference to ratemaking principles is Dr. James Bonbright's treatise entitled Principles of  
24 Public Utility Rates. With regard to the collection of revenue solely (or largely) through  
25 a fixed customer charge, Dr. Bonbright states:

26 . . . there remains a choice as to the unit of service to which the uniform  
27 rate shall be applied. Among a variety of alternatives, three receive  
28 closest consideration: a uniform charge per customer; a uniform charge  
29 per unit of energy (kilowatt-hour); and a uniform charge per unit of the  
30 customer's maximum monthly kilowatt demand.

31 **Uniformity of charge per customer (say, \$10 per month for any**  
32 **desired quantity of service) has charm in avoiding metering costs.**  
33 **Nevertheless, it is soon rejected because of its utter failure to**

1 recognize either cost differences or value-of-service differences  
2 between large and small customers. [Page 396] [Emphasis added].  
3  
4

5 **Q. MR. SEELYE CHARACTERIZES LG&E’S PROPOSED NATURAL GAS RATE**  
6 **DESIGN AS A “STRAIGHT-FIXED VARIABLE” RATE DESIGN. IS IT**  
7 **CORRECT TO CHARACTERIZE THIS RATE STRUCTURE AS STRAIGHT-**  
8 **FIXED VARIABLE?**

9 A. No. The straight-fixed variable (SFV) term was coined and adopted by the FERC  
10 in its famous Order 636 in which fixed pipeline costs are recovered through demand  
11 charges. The concepts of demand charges and customer charges are entirely different.  
12 First, demand charges vary by customer based on their self determined contract  
13 entitlements to pipeline capacity. Although a customer’s demand charges are fixed  
14 during a given year, each pipeline shipper (often LDCs) determines its own level of  
15 contract demand that can and do vary from year to year. As such, the total pipeline  
16 demand charges incurred by individual customers vary tremendously based on the size  
17 and needs of each customer. Such is not the case with fixed customer charges since small  
18 residential customers pay the same as large residential customers regardless of the  
19 demands placed on the system.

20 Another fundamental difference between a demand charge based rate structure  
21 (i.e., true straight-fixed variable) and a fixed customer charge rate structure is that  
22 customers purchasing pipeline capacity under the SFV method have the ability to shed  
23 unwanted (unneeded) demand charge costs through capacity release to other users.  
24 Obviously such revenue (cost) shifting is not possible under a fixed customer charge rate  
25 structure.  
26

27 **Q. PLEASE EXPLAIN WHY THE FERC ADOPTED ITS STRAIGHT-FIXED**  
28 **VARIABLE RATE DESIGN IN ITS ORDER 636.**

29 A. FERC Order 636 had two primary goals. The first was to enhance gas  
30 competition at the wellhead by completely unbundling the merchant and transportation

1 functions of pipelines.<sup>7</sup> The second goal was to encourage the increased consumption of  
2 natural gas in the United States. In the introductory statement of the Order, the FERC  
3 stated:

4 “The Commission’s intent is to further facilitate the unimpeded operation  
5 of market forces to stimulate the production of natural gas . . . . [and  
6 thereby] contribute to reducing our Nation’s dependence upon imported  
7 oil . . . .” [Order at 8].  
8

9 With specific regard to the SFV rate design adopted in Order 636, the FERC stated:

10 “Moreover, the Commission’s adoption of SFV should maximize pipeline  
11 throughput over time by allowing gas to compete with alternate fuels on a  
12 timely basis as the prices of alternate fuels change. The Commission  
13 believes it is beyond doubt that it is in the national interest to promote the  
14 use of clean and abundant gas over alternate fuels such as foreign oil.  
15 SFV is the best method for doing that” [Order at 128-129].  
16

17 **Q. HOW DOES FERC’S OBJECTIVE TO INCREASE NATURAL GAS**  
18 **CONSUMPTION USING THE SFV RATE DESIGN COMPORT WITH THE**  
19 **LDC INDUSTRY’S CLAIMED SOCIETAL NEED FOR REVENUE**  
20 **DECOUPLING AND GUARANTEED REVENUE RECOVERY?**

21 A. The FERC’s objective for SFV is diametrically in opposition to a major claimed  
22 need for revenue decoupling and/or guaranteed revenue recovery. That is, the LDC  
23 industry claims that because retail rates have been historically volumetric based, there has  
24 been a disincentive for LDCs to promote conservation or encourage reduced consumption  
25 of natural gas. As is clearly discussed in the FERC Order, the price signal that results  
26 from SFV pricing is meant to promote additional natural gas consumption, not reduce  
27 consumption. A rate structure, therefore, that is based on a fixed monthly customer  
28 charge sends an even stronger price signal to consumers to use more natural gas. Indeed,  
29 a rate structure comprised of fixed monthly customer charges is even more at odds with  
30 conservation and efficient pricing than a demand charge based (true SFV such as the one  
31 adopted by the FERC) rate structure. Whereas a demand charge rate does recognize  
32 relative customer size and allows customers to decide how much service is desired,

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<sup>7</sup> Federal Energy Regulatory Commission, Docket Nos. RM91-11-001 and RM87-34-065, Order No. 636, page 7.



1 coupled with the ability to shed revenue responsibility (through capacity release), such  
2 characteristics are not present or possible with fixed customer charge pricing.

3  
4 **Q. IN CASE IT IS NOT OBVIOUS, WHY DO SFV AND FIXED CUSTOMER**  
5 **CHARGE RATE STRUCTURES PROMOTE ADDITIONAL CONSUMPTION?**

6 A. These rate structures promote consumption because the consumers' price of  
7 incremental consumption is de minimus, or at the very least, less than what an efficient  
8 price structure would otherwise be. As discussed in its Order 636, the FERC's adoption  
9 of the SFV pricing method was a result of national policy (primarily that of Congress) to  
10 promote the additional use of domestic natural gas by promoting additional interruptible  
11 (and incremental firm) gas usage. Furthermore, when Order 636 was issued, the electric  
12 industry was actively promoting the need for additional natural gas supplies at lower  
13 prices to fuel the need for additional capacity and movement away from its reliance on  
14 coal and nuclear generation. As such, the FERC's SFV pricing mechanism greatly  
15 reduced the price of incremental (additional) natural gas consumption thereby  
16 significantly increasing the demand for, and use of, natural gas in the United States  
17 subsequent to 1992 (when Order 636 was issued).

18  
19 **Q. MR. WATKINS, A CUSTOMER'S TOTAL ELECTRIC OR NATURAL GAS**  
20 **BILL IS COMPRISED OF A BASE RATE COMPONENT AND A FUEL OR GAS**  
21 **COMMODITY COST COMPONENT. FUEL AND GAS COSTS ARE**  
22 **VOLUMETRICALLY PRICED AND REPRESENT THE MAJORITY OF A**  
23 **CUSTOMER'S BILL. DOES THE VOLUMETRIC PRICING OF FUEL OR GAS**  
24 **COSTS OVERSHADOW THE NEED FOR A PROPER PRICING SIGNAL**  
25 **FROM BASE RATES?**

26 A. No. The rationale of the SFV pricing approach escapes me as an economist and  
27 policy advisor. This notion implies that even though marginal rates may be inefficiently  
28 structured, this error is acceptable due to other aspects within a customer's bill. To me,  
29 this argument is no more plausible than establishing rates that provide for clearly  
30 excessive monopolistic profits under the notion that the additional cost to consumers only  
31 represents a small portion of their energy bills and/or cost of living.

1 **Q. EARLIER IN YOUR TESTIMONY YOU EXPLAINED THAT VOLUMETRIC**  
 2 **PRICING PREDOMINATES IN COMPETITIVE MARKETS. IS THERE ANY**  
 3 **DATA OR EXPERIENCE REGARDING THE PRICING OF FIXED PUBLIC**  
 4 **UTILITY SERVICES THAT HAVE RECENTLY BEEN DEREGULATED?**

5 A. Yes. There is a limited amount of data available. Retail electric competition for  
 6 generation services exists in several states. Invariably, customer choice for generation  
 7 supply is volumetrically priced. However, competition in electric generation alone does  
 8 not necessarily provide a good apples-to-apples comparison with bundled electric service  
 9 or natural gas LDC distribution base rates.

10 However, Texas has implemented total retail electric competition for consumers  
 11 for most of the States' ratepayers, including distribution service. Under the Texas model,  
 12 consumers select their electricity provider for all bundled electric services including  
 13 generation, transmission, distribution and metering. The customers' selected service  
 14 provider supplies all services from the generator to the meter box. Electric providers  
 15 compete for customers and are free to set their own prices and pricing structure.

17 **Q. HOW ARE COMPETITIVE RESIDENTIAL ELECTRIC RATES STRUCTURED**  
 18 **IN TEXAS?**

19 A. Every electric service provider in Texas has a volumetric component within their  
 20 rate structure. With regard to Residential fixed monthly customer charges, there are three  
 21 different pricing structures: those with no fixed monthly charge; those that have a  
 22 minimum bill amount; and, those with traditional fixed monthly customer charges  
 23 (regardless of consumption). The following is a summary of the rate structures regarding  
 24 customer charges for the 30 providers that offer competitive residential electric service in  
 25 Texas:

	<u>Number Of Providers</u>	<u>Percentage Of Providers</u>
No fixed charge	4	13%
Fixed charge waived with usage threshold	11	37%
<u>Traditional fixed monthly customer charge</u>	<u>15</u>	<u>50%</u>
Total	30	100%

1 Of the 15 providers that utilize a traditional fixed monthly customer charge the minimum  
2 charge is \$2.15 per month, the maximum customer charge is \$11.69 per month, with an  
3 average customer charge of \$6.24 per month. The details supporting these amounts are  
4 provided in my Schedule GAW-8.

5 From this data, half of the providers have maintained the traditional fixed monthly  
6 customer charge, an eighth of the companies have abandoned fixed charge pricing  
7 altogether, and somewhat more than a third of the providers waive any fixed fees once a  
8 minimum level of consumption (KWH) is achieved.<sup>8</sup> The conclusions that can be drawn  
9 from this data are:

- 10 (1) half of the competitive service providers (15) have abandoned traditional  
11 fixed customer charge pricing in favor of no customer charges at all or  
12 waiver of such with reasonably low levels of consumption;
- 13  
14 (2) of the 15 providers that continue to utilize a traditional fixed monthly  
15 customer charge, variable energy charges recover more than just  
16 generation and transmission (i.e., they include a substantial portion of  
17 distribution) costs as the maximum customer charge is only \$11.69 with  
18 an average customer charge of \$6.24; and,
- 19 )  
20 (3) no competitor relies on fixed customer charge pricing for the majority of  
21 its revenue.  
22

23 From this data and analysis, it is clear that when prices for a service identical to LG&E's  
24 electric operations and similar to LG&E's natural gas operations are established based on  
25 competition and determined by the market (customers and sellers), the resulting rate  
26 structure is similar to that found for most other competitive goods and services, i.e.,  
27 predominantly based on volumetric pricing, and not fixed charge pricing.  
28

29 **Q. HAS MR. SEELYE CONDUCTED AN ANALYSIS OF COSTS THAT HE**  
30 **CONTENDS SHOULD BE CONSIDERED IN DEVELOPING THE**  
31 **RESIDENTIAL CUSTOMER CHARGE FOR ELECTRIC SERVICE?**

32 A. Yes.  
33

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<sup>8</sup> As indicated in the notes to Schedule GAW-8 customer charges are waived with a minimum monthly usage of 500 KWH or 1,000 KWH. For purposes of comparison, LG&E's average residential customer usage is about 1,000 KWH per month.

1 **Q. DO YOU AGREE WITH MR. SEELYE'S CUSTOMER COST ANALYSIS?**

2 A. No.

3  
4 **Q. PLEASE EXPLAIN.**

5 A. Mr. Seelye estimates LG&E's monthly electric Residential customer "cost" to be  
6 \$15.80. However, Mr. Seelye's analysis includes a significant level of distribution,  
7 administrative, general, and other overhead costs. Electric utilities are in the business of  
8 providing electric energy to customers. Administrative, general and other overhead costs  
9 are a normal cost of business for any enterprise and should be recovered based on the  
10 level of service provided (i.e., on a volumetric basis). That is, these costs are incurred in  
11 the provision of services rendered. As such, these costs should be recovered in relation to  
12 the level of services provided.

13  
14 **Q. HOW ARE ADMINISTRATIVE, GENERAL AND OVERHEAD EXPENSES**  
15 **TYPICALLY RECOVERED IN COMPETITIVE MARKETS?**

16 A. As discussed previously, the pricing structures in competitive markets are  
17 predominately volumetrically priced. This volumetric pricing recovers all of a business's  
18 costs: fixed; variable; administrative; general; overhead; profit; etc.

19  
20 **Q. NOTWITHSTANDING THE EFFICIENCY REASONS AS TO WHY**  
21 **REGULATION SHOULD SERVE AS A SURROGATE FOR COMPETITION,**  
22 **ARE THERE OTHER RELEVANT ASPECTS TO THE PRICING STRUCTURES**  
23 **IN COMPETITIVE MARKETS VIS A VIS THOSE OF REGULATED**  
24 **UTILITIES?**

25 A. Yes. In competitive markets, consumers, by definition, have the ability to choose  
26 various suppliers of goods and services. Such is obviously not the case with regulated  
27 monopoly utilities. Consumers and the market have a clear preference for volumetric  
28 pricing. Utility customers are not so fortunate in that the local utility is a monopolist.  
29 The only reason utilities are able to achieve pricing structures with high fixed monthly  
30 charges is due to their monopoly status. In my opinion, this is a critical consideration in  
1 establishing utility pricing structures. That is, competitive markets and consumers in the

1 U.S. have demanded volumetric based prices for generations: a regulated utility's pricing  
2 structure should not be allowed to counter the collective wisdom of markets and  
3 consumers simply because of its market power.  
4

5 **Q. HAVE YOU CONDUCTED AN ANALYSIS OF THE COSTS THAT SHOULD BE**  
6 **CONSIDERED IN DETERMINING LG&E'S RESIDENTIAL CUSTOMER**  
7 **CHARGES FOR ELECTRIC AND NATURAL GAS SERVICE?**

8 A. Yes. As I discussed earlier, there is no doubt that the majority of LG&E's non-  
9 fuel or non-gas costs are fixed in the short-run and that efficient, competitive pricing  
10 dictates volumetric pricing. However, traditional ratemaking has recognized a minimum  
11 level of fixed customer charges to reflect the direct costs of maintaining a customer's  
12 account. These direct customer costs include the Company's investment in meters and  
13 service lines as well as the operating expenses associated with meter reading, customer  
14 service, accounting and customer records and collections. I have conducted a traditional  
15 direct customer cost analysis for LG&E which is presented in my Schedules GAW-9  
16 (Electric) and GAW-10 (Gas). These studies indicate a monthly LG&E customer cost of  
17 \$3.58 per month for electric service and \$6.86 for natural gas service.  
18

19 **Q. WHAT ARE YOUR RECOMMENDATIONS REGARDING LG&E'S**  
20 **RESIDENTIAL CUSTOMER CHARGES?**

21 A. Although my customer cost analyses indicate that reductions to LG&E's electric  
22 and natural gas customer charges are warranted, in the interest of gradualism and rate  
23 continuity I recommend that LG&E's current Residential electric and natural gas  
24 customer charges be maintained at the current levels of \$5.00/mth for electric service and  
25 \$9.50/mth for natural gas service.  
26

27 **Q. DOES THIS COMPLETE YOUR TESTIMONY?**

28 A. Yes.

BACKGROUND & EXPERIENCE PROFILE  
**GLENN A. WATKINS**  
VICE PRESIDENT/SENIOR ECONOMIST  
TECHNICAL ASSOCIATES, INC.

**EDUCATION**

1982 - 1988	M.B.A., Virginia Commonwealth University, Richmond, Virginia
1980 - 1982	B.S., Economics; Virginia Commonwealth University
1976 - 1980	A.A., Economics; Richard Bland College of The College of William and Mary, Petersburg, Virginia

**POSITIONS**

Jul. 1995-Present	Vice President/Senior Economist, Technical Associates, Inc.
Mar. 1993-1995	Vice President/Senior Economist, C. W. Amos of Virginia
Apr. 1990-Mar. 1993	Principal/Senior Economist, Technical Associates, Inc.
Aug. 1987-Apr. 1990	Staff Economist, Technical Associates, Inc., Richmond, Virginia
Feb. 1987-Aug. 1987	Economist, Old Dominion Electric Cooperative, Richmond, Virginia
May 1984-Jan. 1987	Staff Economist, Technical Associates, Inc.
May 1982-May 1984	Economic Analyst, Technical Associates, Inc.
Sep. 1980-May 1982	Research Assistant, Technical Associates, Inc.

**EXPERIENCE**

**I. Public Utility Regulation**

- A. Costing Studies -- Conducted, and presented as expert testimony, numerous embedded and marginal cost of service studies. Cost studies have been conducted for electric, gas, telecommunications, water, and wastewater utilities. Analyses and issues have included the evaluation and development of alternative cost allocation methods with particular emphasis on ratemaking implications of distribution plant classification and capacity cost allocation methodologies. Distribution plant classifications have been conducted using the minimum system and zero-intercept methods. Capacity cost allocations have been evaluated using virtually every recognized method of allocating demand related costs (e.g., single and multiple coincident peaks, non-coincident peaks, probability of loss of load, average and excess, and peak and average).  
Embedded and marginal cost studies have been analyzed with respect to the seasonal and diurnal distribution of system energy and demand costs, as well as cost effective approaches to incorporating energy and demand losses for rate design purposes. Economic dispatch models have been evaluated to determine long range capacity requirements as well as system marginal energy costs for ratemaking purposes.
- B. Rate Design Studies -- Analyzed, designed and provided expert testimony relating to rate structures for all retail rate classes, employing embedded and marginal cost studies. These rate structures have included flat rates, declining block rates, inverted block rates, hours use of demand blocking, lighting rates, and interruptible rates. Economic development and special industrial rates have been developed in recognition of the competitive environment for specific customers. Assessed alternative time differentiated rates with diurnal and seasonal pricing structures. Applied Ramsey (Inverse Elasticity) Pricing to marginal costs in order to adjust for embedded revenue requirement constraints.

GLENN A. WATKINS

- C. Forecasting and System Profile Studies -- Development of long range energy (Kwh or Mcf) and demand forecasts for rural electric cooperatives and investor owned utilities. Analysis of electric plant operating characteristics for the determination of the most efficient dispatch of generating units on a system-wide basis. Factors analyzed include system load requirements, unit generating capacities, planned and unplanned outages, marginal energy costs, long term purchased capacity and energy costs, and short term power interchange agreements.
- D. Cost of Capital Studies -- Analyzed and provided expert testimony on the costs of capital and proper capital structures for ratemaking purposes, for electric, gas, telephone, water, and wastewater utilities. Costs of capital have been applied to both actual and hypothetical capital structures. Cost of equity studies have employed comparable earnings, DCF, and CAPM analyses. Econometric analyses of adjustments required to electric utilities cost of equity due to the reduced risks of completing and placing new nuclear generating units into service.
- E. Accounting Studies -- Performed and provided expert testimony for numerous accounting studies relating to revenue requirements and cost of service. Assignments have included original cost studies, cost of reproduction new studies, depreciation studies, lead-lag studies, Weather normalization studies, merger and acquisition issues and other rate base and operating income adjustments.

II. Transportation Regulation

- A. Oil and Products Pipelines -- Conducted cost of service studies utilizing embedded costs, I.C.C. Valuation, and trended original cost. Development of computer models for cost of service studies utilizing the "Williams" (FERC 154-B) methodology. Performed alternative tariff designs, and dismantlement and restoration studies.
- B. Railroads -- Analyses of costing studies using both embedded and marginal cost methodologies. Analyses of market dominance and cross-subsidization, including the implementation of differential pricing and inverse elasticity for various railroad commodities. Analyses of capital and operation costs required to operate "stand alone" railroads. Conducted cost of capital and revenue adequacy studies of railroads.

III. Insurance Studies

Conducted and presented expert testimony relating to market structure, performance, and profitability by line and sub-line of business within specific geographic areas, e.g. by state. These studies have included the determination of rates of return on Statutory Surplus and GAAP Equity by line - by state using the NAIC methodology, and comparison of individual insurance company performance vis a vis industry Country-Wide performance.

Conducted and presented expert testimony relating to rate regulation of workers compensation, automobile, and professional malpractice insurance. These studies have included the determination of a proper profit and contingency factor utilizing an internal rate of return methodology, the development of a fair investment income rate, capital structure, cost of capital.

Other insurance studies have included testimony before the Virginia Legislature regarding proper regulatory structure of Credit Life and P&C insurance; the effects on competition and prices resulting from proposed insurance company mergers, maximum and minimum expense multiplier limits, determination of specific class code rate increase limits (swing limits); and investigation of the reasonableness of NCCI's administrative assigned risk plan and pool expenses.

**GLENN A. WATKINS**

**IV. Anti-Trust and Commercial Business Damage Litigation**

Analyses of alleged claims of attempts to monopolize, predatory pricing, unfair trade practices and economic losses. Assignments have involved definitions of relevant market areas (geographic and product) and performance of that market, the pricing and cost allocation practices of manufacturers, and the economic performance of manufacturers' distributors.

Performed and provided expert testimony relating to market impacts involving automobile and truck dealerships, incremental profitability, the present value of damages, diminution in value of business, market and dealer performance, future sales potential, optimal inventory levels, fair allocation of products, financial performance; and business valuations.

**MEMBERSHIPS AND CERTIFICATIONS**

Member, Association of Energy Engineers (1998)  
Certified Rate of Return Analyst, Society of Utility and Regulatory Financial Analysts (1992)  
Member, American Water Works Association  
National Association of Business Economists  
Richmond Association of Business Economists  
National Economics Honor Society



EXPERT L. JNY  
PROVIDED BY  
GLENN A. WATKINS

YEAR	CASE NAME	PRE-FILED	JURISDICTION	DOCKET NO.	SUBJECT OF TESTIMONY
1985	SAVANNAH ELECT. & PWR CO.	YES	GA. PSC	3523U	SALES FORECAST, RATE DESIGN ISSUES
1980	CENTRAL MAINE PWR CO.	YES	ME. PUC	89-68	MARGINAL COST OF SERVICE
1990	COMMONWEALTH GAS SERVICES ( Columbia Gas)	YES	VA. SCC	PUE900034	CLASS COST OF SERVICE
1990	WARNER FRUJEHAUF	NO	U.S. BANKRUPTCY CT.	n/a	VALUE OF STOCK, COST OF CAPITAL
1991	W. VA. WATER	YES	WVA PSC	91-140-W-42T	RATE DESIGN
1992	S.C. WORKERS COMPENSATION	YES	SC DEPT OF INSUR	92-084	INTERNAL RATE OF RETURN
1992	GRASS V. ATLAS PLUMBING, et.al.	NO	RICHMOND CIRCUIT CT	n/a	DAMAGES, BREACH OF COVENANT NOT TO COMPETE (PROFFERED TEST)
1992	VIRGINIA NATURAL GAS	YES	VA SCC	PUE920031	JURISDICTIONAL & CLASS COST OF SERVICE
1992	ALLSTATE INSURANCE COMPANY (DIRECT)	YES	N.J. DEPT OF INSUR	INS 06174-92	COST ALLOCATIONS, PROFITABILITY
1992	ALLSTATE INSURANCE COMPANY (REBUTTAL)	YES	N.J. DEPT OF INSUR	INS 06174-92	COST ALLOCATIONS, PROFITABILITY
1993	MOUNTAIN FORD V FORD MOTOR COMPANY	NO	FEDERAL DISTRICT CT	n/a	VEHICLE ALLOCATIONS, INVENTORY LEVELS, INCREMENTAL PROFIT, & DAMAGES
1993	SOUTH WEST GAS CO.	YES	AZ. CORP COMM	U-1551-92-253	DIRECT: CLASS COST ALLOCATIONS
1993	SOUTH WEST GAS CO.	YES	AZ. CORP COMM	U-1551-92-253	SURREBUTTAL: CLASS COST ALLOCATIONS
1993	POTOMAC EDISON CO.	YES	VA. SCC	PUE930033	COST ALLOCATIONS, RATE DESIGN
1995	VIRGINIA AMERICAN WATER CO.	YES	VA. SCC	PUE950003	JURISDICTIONAL ALLOCATIONS
1995	NEW JERSEY AMERICAN WATER COMPANY	YES	N.J. B.P.U.	WR95040165	COST ALLOCATIONS, RATE DESIGN
1995	PIEDMONT NATURAL GAS COMPANY	YES	S.C. P.S.C.	95-715-G	COST ALLOCATIONS, RATE DESIGN, WEATHER NORMALIZATION
1995	CYCLE WORLD V. HONDA MOTOR CO.	NO	VA. DMV	None	MARKET PERFORMANCE, FINANCIAL IMPACT OF NEW DEALER
1996	HOUSE BILL # 1513	NO	VA. GEN'L ASSEMBLY	N/A	WATER / WASTEWATER CONNECTION FEES
1996	VIRGINIA AMERICAN WATER CO.	YES	VA. SCC	PUE960003	JURISDICTIONAL ALLOCATIONS
1996	ELIZABETHTOWN WATER CO.	YES	N.J. B.P.U.	WR95110557	COST ALLOCATIONS, RATE DESIGN
1996	ELIZABETHTOWN WATER CO.	NO	N.J. B.P.U.	WR95110557	SURREBUTTAL COST ALLOCATIONS, RATE DESIGN
1998	SOUTH JERSEY GAS CO.	YES	N.J. B.P.U.	GR96010032	CLASS COST OF SERVICE
1996	VIRGINIA LIABILITY INSURANCE COMPETITION	YES	VA. SCC	INS960164	COST ALLOCATIONS, INSURANCE PROFITABILITY
1996	SOUTH JERSEY GAS CO.	YES	N.J. B.P.U.	GR96010032	REBUTTAL - CLASS COST OF SERVICE
1996	HOUSE BILL # 1513	NO	VA. GEN'L ASSEMBLY	N/A	WATER / WASTEWATER CONNECTION FEES
1997	NISSAN V. CRUMPLER NISSAN	NO	VA. DMV	None	MARKET DETERMINATION & PERFORMANCE
1997	PHILADELPHIA SUBURBAN WATER CO. (DIRECT)	YES	PA. PUC	R-00973952	COST ALLOCATIONS, RATE DESIGN, RATE DISCOUNTS
1997	PHILADELPHIA SUBURBAN WATER CO. (REBUTTAL)	YES	PA. PUC	R-00973952	COST ALLOCATIONS, RATE DESIGN, RATE DISCOUNTS
1997	PHILADELPHIA SUBURBAN WATER CO. (SURREBUTTAL)	YES	PA. PUC	R-00973952	COST ALLOCATIONS, RATE DESIGN, RATE DISCOUNTS
1997	PHILADELPHIA SUBURBAN WATER CO. (SURREBUTTAL)	YES	VA. SCC	PUE970523	JURISDICTIONAL/CLASS ALLOCATIONS
1998	VIRGINIA ELECTRIC POWER COMPANY	YES	VA. SCC	PUE960296	CLASS COST OF SERVICE and TIME DIFFERENTIATED FUEL COSTS
1998	NEW JERSEY AMERICAN WATER COMPANY	YES	N.J. B.P.U.	WR98010015	CLASS COST OF SERVICE, RATE DESIGN, REVENUES
1998	AMERICAN ELECTRIC POWER COMPANY	YES	VA. SCC	PUE980296	CLASS COST OF SERVICE and TIME DIFFERENTIATED FUEL COSTS
1998	FREEMAN WROFUL DEATH	YES	FEDERAL DISTRICT CT.	98-596	REVENUE REQUIREMENT
1998	EASTERN MAINE ELECTRIC COOPERATIVE	YES	MAINE PUC	None	PRIMA FACIA RATES, LEVEL OF COMPETITION
1998	CREDIT LIFE/ AH RATE FILING	YES	VA. SCC	N/A	COST ALLOCATIONS, INSURANCE PROFITABILITY
1999	MILLER VOLKSWAGEN V. VOLKSWAGEN OF AMERICA	NO	VA. GEN'L ASSEMBLY	N/A	VEHICLE ALLOCATIONS/CSI
1999	COLUMBIA GAS OF VIRGINIA	YES	VA. DMV	PUE980287	RATE STRUCTURE
1999	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA. SCC	INS990165	WORKERS COMPENSATION RATES
1999	ROANOKE GAS	YES	VA. SCC	PUE980626	Rate Design/ Weather Norm
2000	PERSON-SMITH V. DOMINION REALTY	NO	RICHMOND CIRCUIT	n/a	LOST INCOME
2000	CREDIT LIFE/AH RATE FILING	YES	VA. SCC	None	PRIMA FACIA RATES, LEVEL OF COMPETITION
2000	UNITED CITIES GAS	YES	VA. SCC	n/a	Cost Allocations/ Rate Design
2001	VERMONT WORKERS COMPENSATION RATE CASE	YES	VT. INSURANCE COMM.	n/a	WORKERS COMPENSATION RATES
2001	SERRA CHEVROLET V. GENERAL MOTORS CORP.	NO	ALABAMA CIRCUIT CT.	98-2089	ECONOMIC DAMAGES
2001	VIRGINIA POWER ELECTRIC RESTRUCTURING	YES	VA. SCC	PUE000584	RATE Design (UNBUNDLING)
2001	AMERICAN ELECTRIC POWER RESTRUCTURING	YES	VA. SCC	PUE010011	RATE Design (UNBUNDLING)
2001	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA. SCC	INS010180	WORKERS COMPENSATION RATES
2002	PHILADELPHIA SUBURBAN WATER CO. (DIRECT)	YES	PA. PUC	R00016750	COST ALLOCATIONS AND RATE DESIGN
2002	HAROLD MORRIS PERSONAL INJURY	YES	FED. DIST CT (RICHMOND)	n/a	LOST WAGES
2002	PIEDMONT NATURAL GAS	YES	S.C. PSC	2002-68-G	REVENUE ROIMT, COST OF CAPITAL
2002	VIRGINIA AMERICAN WATER COMPANY	YES	VA. SCC	PUE-2002-00375	JURISDICTIONAL/CLASS ALLOCATIONS
2002	ROANOKE GAS COMPANY	YES	VA. SCC	PUE-2002-00373	WEATHER NORMALIZATION RIDER
2003	SOUTH CAROLINA ELECTRIC & GAS (ELECTRIC)	YES	S.C. PSC	2002-223-E	REVENUE ROIMT.
2003	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA. SCC	INS-2003-00157	WORKERS COMPENSATION RATES
2003	CREDIT LIFE/AH RATE FILING	YES	VA. SCC	None	PRIMA FACIA RATES, LEVEL OF COMPETITION
2003	ROANOKE GAS	YES	VA. SCC	PUE-2003-00425	WEATHER NORMALIZATION ADJUSTMENT RIDER

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YEAR	CASE NAME	PRE-FILED	JURISDICTION	DOCKET NO.	SUBJECT OF TESTIMONY
2003	SOUTHWESTERN VIRGINIA GAS CO.	YES	VA, SCC	PUE-2003-00426	WEATHER NORMALIZATION ADJUSTMENT RIDER
2004	SOUTH CAROLINA PIPELINE COMPANY	YES	S.C. PSC	2004-6-G	COST OF GAS AND INTERRUPT. SALES PROGRAM
2004	VIRGINIA AMERICAN WATER COMPANY	YES	VA, SCC	PUE-2003-00599	JURISDICTIONAL/CLASS ALLOCATIONS
2004	SOE&G FUEL CONTRACT	YES	S.C. PSC	2004-126-E	GAS CONTRACT FOR COMBINED CYCLE PLANT
2004	WASHINGTON GAS LIGHT	YES	VA, SCC	PUE-2003-00603	RATE DESIGN/WNA RIDER
2004	ATMOS ENERGY	YES	VA, SCC	PUE-2003-00507	RATE DESIGN/WNA RIDER
2004	SC&G RATE CASE (ELECTRIC)	YES	S.C. PSC	2004-178-E	COST OF CAPITAL/REV RQMT.
2004	MEDICAL MALPRACTICE LEGISLATION	NO	VA, GENERAL ASSEMBLY	N/A	INDUSTRY RESTRUCTURE/PROFITABILITY
2004	ATLAS HONDA v. HONDA MOTOR CO.	YES	VA, DMV	None	NEW DEALER PROTEST
2004	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA, SCC	INS-2004-00124	WORKERS COMPENSATION RATES
2004	NATIONAL FUEL GAS DISTRIBUTION	YES	PA, PUC	R00049856	COST ALLOCATIONS/ RATE DESIGN
2005	WASHINGTON GAS LIGHT	YES	VA, SCC	PUE-2005-00010	WEATHER NORMALIZATION ADJUSTMENT RIDER
2005	Serra Chevrolet	Yes	US, Federal Ct.	CV-01-P-2682-S	Dealer incremental profits and costs
2005	NEWTOWN ARTESIAN WATER	Yes	PA, PUC		REV. RQMT./ RATE STRUCTURE
2005	CITY OF BETHLEHEM WATER RATE CASE	YES	PA, PUC	INS-2005-00159	WORKERS COMPENSATION RATES
2005	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA, SCC	PUE-2005-00057	Revenue Requirement/ AW/ Regulation Plan
2005	Virginia Natural Gas	YES	VA, SCC	None	Dealer Impact analysis
2006	Olathe Hyundai v. Hyundai Motors of America	YES	KS, DMV	INS-2006-00013	Market Structure
2006	Virginia Credit Life & A&H Prima Facie Rates	YES	VA, SCC	PUE-2005-00088	Revenue Requirements/ Alt. Regulation Plan
2006	PPL Gas	YES	PA, PUC	R-00061398	COST ALLOCATIONS/ RATE DESIGN
2006	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA, SCC	INS-2006-00197	WORKERS COMPENSATION RATES
2007	Level of Private Pass. Auto Competition	YES	Ma. Dept of Insur	N/A	Private Pass Auto level of competition
2007	WASHINGTON GAS LIGHT	YES	VA, SCC	PUE-2006-00089	Cost Allocations/ Rate Design/ Alt. Regulation Plan
2007	Valley Energy	YES	PA, PUC	R-00072349	Cost of Capital/Rate Design
2007	Wallisboro Electric	YES	PA, PUC	R-00072350	Cost of Capital/Rate Design
2007	Citizens' Electric Of Lewisburg, Pa	YES	PA, PUC	R-00072348	Cost of Capital/Rate Design
2007	NCCI (WORKERS COMPENSATION INSURANCE)	YES	VA, SCC	INS-2007-00224	WORKERS COMPENSATION RATES
2007	Georgia Power	YES	GA, PSC	25060-U	Cost Allocations/Rate Design
2008	Columbia Gas of Pennsylvania	YES	PA, PUC	R-2008-2011621	Affiliate Transactions
2008	Greenway Toll Road Investigation	YES	VA, GENERAL ASSEMBLY	N/A	Cost Allocations/Rate Design
2008	Puget Sound Energy (Electric)	YES	Wa. UTC	UE-072300	Cost Allocations/Rate Design
2008	Puget Sound Energy (Gas)	YES	Wa. UTC	UE-072301	Cost Allocations/Rate Design
2008	Blue Grass Electric Cooperative	YES	Ky PSC	2008-00011	Cost Allocations/Rate Design
2008	Columbia Gas of Ohio	YES	OH PUC	08-72-GA-AIR, et. a	Cost Allocations/Rate Design
2008	Virginia Natural Gas	YES	VA, SCC	PUE-2008-00060	Nat'l Gas Conservation/ Revenue Decoupling
2008	Equitable Natural Gas	YES	PA, PUC	R-2008-2029325	Cost Allocations/Rate Design/ Discounted Rates
2008	LG&E (Natural Gas)	YES	Ky PSC	2008-000252	Cost Allocations/Rate Design/ Weather Normalization
2008	Kentucky Utilities	YES	Ky PSC	2008-00251	Cost Allocations/Rate Design/ Weather Normalization
2008	Pike County Natural Gas	YES	PA, PUC	R-2008-2046520	Cost Allocations/Rate Design
2008	Pike County Electric	YES	PA, PUC	R-2008-2046518	Cost Allocations/Rate Design
2008	Newtown Artesian Water	YES	PA, PUC	R-2008-2042283	Revenue Requirement
2009	Leesburg Water & Sewer	YES	Va. Circuit Ct.	Civil Action 42736	Revenue Requirement/ Excess Rates
2009	Central Penn Gas, Inc.	YES	PA, PUC	R-02008-2079675	Cost Allocation/Rate Design
2009	Penn Natural Gas, Inc.	YES	PA, PUC	R-2008-2079680	Cost Allocation/Rate Design
2009	Credit Life/ A&H reinsurance	YES	VA, SCC	n/a	Market Structure and Availability
2009	Fairfax County v. City of Falls Church Virginia	YES	Fairfax Circuit Ct. ( Va.)	CL-2008-16114	Water Revenue Requirement
2009	Avista Utilities ( Electric)	YES	Wa. UTC	UE-090134	Electric rate Design
2009	Avista Utilities ( Gas)	YES	Wa. UTC	UE-090135	Gas Rate design
2009	Columbia Gas of Kentucky	YES	Ky PSC	2009-00141	Cost Allocations/Rate Design
2009	NCCI (Workers Compensation Rates)	YES	VA, SCC	INS-2009-00142	Workers Compensation Rates
2009	Duke Energy of Kentucky (Gas)	YES	Ky, PSC	2009-00202	Rate Design
2009	Duke Energy Carolinas (Electric)	YES	NC UC	E7 Sub 909	Cost Allocations/Rate Design
2009	PacifiCorp	YES	Wa. UTC	UE-090205	Rate Design/Low Income
2009	Puget Sound Energy (Electric)	YES	Wa. UTC	UE-090704	Cost Allocations/Rate Design
2009	Puget Sound Energy (Gas)	YES	Wa. UTC	UG-090705	Cost Allocations/Rate Design
2010	Aqua Virginia, Inc.	YES	VA, SCC	PUE-2009-00059	Rate Design
2010	Philadelphia Gas Works	YES	PA, PUC	R-2009-2139984	Cost Allocations/Rate Design

Note: Does not include Expert Reports submitted to Courts or Regulatory agencies in which cases that settled prior to testimony. Testimony prior to 2003 may be incomplete.

**Schedule GAW-2**

**Kentucky Utilities and Louisville Gas & Electric  
Test Year Generation Statistics**

Generating Unit	Fuel	Generator Name/ID (MW)	Net MWH Produced	Generation Order	Total Gross Investment	Net Investment	Capacity Availability		B/PP	Pct Energy	Pct Demand	Net Investment	
							Factor Avg	Factor Avg				Energy	Demand
Mill Creek 1	Coal	366	2,060,877	1	\$163,196,129	-\$64,631,912	77.9	85.6	Base	100.00%	0.00%	\$54,631,912	\$0
Trimble County 1	Coal	568	3,559,440	2	\$607,594,315	\$342,381,617	89.6	90.1	Base	100.00%	0.00%	\$342,381,617	\$0
Mill Creek 4	Coal	544	3,568,774	3	\$504,316,481	\$251,798,310	81.3	87.5	Base	100.00%	0.00%	\$251,798,310	\$0
Mill Creek 3	Coal	433	2,768,598	4	\$277,074,472	\$129,748,881	81.2	89	Base	100.00%	0.00%	\$129,748,881	\$0
Mill Creek 2	Coal	356	2,084,795	5	\$124,822,261	\$43,236,558	70.9	86.3	Base	100.00%	0.00%	\$43,236,558	\$0
Ghent 2	Coal	556	2,362,899	7	\$193,971,163	\$77,347,614	69.7	82.4	Base	100.00%	0.00%	\$77,347,614	\$0
Ghent 1	Coal	557	2,950,195	8	\$483,607,411	\$271,158,395	84.2	87.9	Base	100.00%	0.00%	\$271,158,395	\$0
Ghent 4	Coal	556	2,941,478	9	\$393,801,651	\$208,887,124	83	85.1	Base	100.00%	0.00%	\$208,887,124	\$0
Cane Run 4	Coal	164	966,602	11	\$72,607,681	\$14,644,808	51.3	86.9	Base	100.00%	0.00%	\$14,644,808	\$0
Ghent 3	Coal	557	3,563,968	12	\$784,280,812	\$533,549,718	78	85.5	Base	100.00%	0.00%	\$533,549,718	\$0
Cane Run 6	Coal	222	1,350,253	13	\$141,803,002	\$29,847,094	51.2	84	Base	100.00%	0.00%	\$29,847,094	\$0
Cane Run 5	Coal	209	933,114	14	\$93,964,064	\$29,847,094	38.7	84.7	Intermediate	38.70%	61.30%	\$11,550,825	\$18,296,269
Green River 4	Coal	114	396,052	15	\$44,909,090	\$9,586,636	31.9	85.9	Intermediate	31.90%	68.10%	\$3,052,395	\$6,616,241
Green River 3	Coal	75	226,460	16	\$20,882,040	\$4,223,782	21.2	83	Intermediate	21.20%	78.80%	\$895,438	\$3,328,324
Brown 3	Coal	446	1,834,351	17	\$167,768,218	\$61,483,147	52.9	81.3	Intermediate	52.90%	47.10%	\$32,524,586	\$28,958,562
Brown 2	Coal	180	627,235	18	\$19,980,742	\$19,980,742	37.7	86	Intermediate	41.00%	59.00%	\$7,525,200	\$12,435,542
Brown 1	Coal	114	289,333	19	\$58,239,565	\$19,914,445	41	83.4	Intermediate	20.90%	79.10%	\$8,184,922	\$4,858,426
Trimble County 5	Gas	199	43,621	20	\$26,123,876	\$6,142,131	20.9	82.8	Peak	0.00%	100.00%	\$0	\$47,453,510
Trimble County 6	Gas	199	24,504	21	\$59,494,178	\$44,965,635	17.4	83.4	Peak	0.00%	100.00%	\$0	\$44,965,635
Trimble County 7	Gas	199	38,858	22	\$52,344,925	\$42,578,406	14.9	83.4	Peak	0.00%	100.00%	\$0	\$42,578,406
Trimble County 8	Gas	199	34,284	23	\$51,954,657	\$42,261,302	10.4	83.4	Peak	0.00%	100.00%	\$0	\$42,261,302
Trimble County 9	Gas	199	23,995	24	\$52,109,272	\$42,802,901	8.6	83.4	Peak	0.00%	100.00%	\$0	\$42,802,901
Trimble County 10	Gas	189	19,039	25	\$56,436,142	\$48,466,389	7.1	83.4	Peak	0.00%	100.00%	\$0	\$48,466,389
Brown 6	Gas, Oil	177	34,203	26	\$64,152,496	\$54,834,899	5.5	83.4	Peak	0.00%	100.00%	\$0	\$54,834,899
Brown 7	Gas, Oil	177	40,139	27	\$65,080,354	\$53,168,501	9	82.2	Peak	0.00%	100.00%	\$0	\$53,168,501
Brown 8	Gas, Oil	126	7,547	28	\$36,379,638	\$23,135,828	10.6	88.2	Peak	0.00%	100.00%	\$0	\$23,135,828
Brown 9	Gas, Oil	126	1,524	29	\$48,505,028	\$28,291,775	1.4	88	Peak	0.00%	100.00%	\$0	\$28,291,775
Brown 10	Gas, Oil	126	2,504	30	\$28,531,409	\$16,272,357	0.8	85.7	Peak	0.00%	100.00%	\$0	\$16,272,357
Brown 11	Gas, Oil	126	4,493	31	\$44,435,742	\$27,303,037	0.5	89.1	Peak	0.00%	100.00%	\$0	\$27,303,037
Brown 5	Gas	123	2,592	32	\$47,749,126	\$35,132,623	1.9	89.1	Peak	0.00%	100.00%	\$0	\$35,132,623
Paddy's Run 13	Gas	178	1,252	33	\$64,913,860	\$49,848,554	10.3	88.6	Peak	0.00%	100.00%	\$0	\$49,848,554
Paddy's Run 11	Gas, Oil	16	20	34	\$1,609,957	(\$28,342)	0.1	60	Peak	0.00%	100.00%	\$0	(\$28,342)
Cane Run 11	Gas, Oil	16	212	35	\$3,248,070	\$1,357,866	0.1	50	Peak	0.00%	100.00%	\$0	\$1,357,866
Paddy's Run 12	Gas	33	0	36	\$3,183,011	(\$213,388)	0.1	50	Peak	0.00%	100.00%	\$0	(\$213,388)
Zorn 1	Gas	18	231	37	\$1,899,048	(\$31,433)	0.1	50	Peak	0.00%	100.00%	\$0	(\$31,433)
Haeffling 1-3	Gas, Oil	63	-489	38	\$5,695,570	\$1,417,461	0.2	50	Peak	0.00%	100.00%	\$0	\$1,417,461
Dix Dam 1-3	Hydro	27	56,130	-	\$12,391,689	\$3,980,168	28.8	none	Hydro	100.00%	0.00%	\$3,980,168	\$0
Ohio Falls 1-8	Hydro	86	230,869	-	\$41,596,196	\$33,670,611	68.3	none	Hydro	100.00%	0.00%	\$33,670,611	\$0
Trimble County 2	Coal	838	Projected	Top 8	\$870,200,000	\$870,200,000	89.7	89.4	Base	100.00%	0.00%	\$870,200,000	\$0
Total		9610			\$3,597,525,357							\$2,954,364,889	\$17,889%

Source: KU Responses to AG 1-219 through AG1-222

Louisville Gas & Electric Co.  
Overhead Lines Classification

Exclude small Quantities

Size	Ampacity	Avg cost/ft	Quantity	Ln Avg cost/ft	Total Cost			
6	26.24	105	0.19	18421	-1.660731	3499.99		
4	41.74	140	0.24	89519	-1.427116	21484.56	Regression Output:	
2	66.36	184	0.67	971519	-0.400478	650917.73	Constant	-1.0112 0.3637823
1	83.69	212	1.31	88940	0.2700271	116511.4	Std Err of Y Est	0.6552882
1/0	105.6	242	1.38	39898	0.3220835	55059.24	R Squared	0.590519
2/0	133.1	276	1.44	713507	0.3646431	1027450.1	No. of Observations	14
3/0	167.8	315	1.6	1954687	0.4700036	3127499.2	Degrees of Freedom	12
4/0	211.6	357	1.63	112230	0.48858	182934.9	X Coefficient(s)	0.0033942
266	266	449	1.8	288794	0.5877867	519829.2	Std Err of Coef.	0.0008159
266.8	266.8	450	1.85	20263	0.6151856	37486.55		
300 MCM	300	492	3.57	9557	1.2725656	34118.49		
397 MCM	397	576	0.86	265460	-0.150823	228295.6		
500 MCM	500	690	6.95	7511	1.9387417	52201.45		
795 MCM	795	884	4	113204	1.3862944	452816		
				4,693,510		6,510,104	Intercept	0.3637823
							Q	4,693,510
							Zero load Cost	1,707,416
							Total Cost	6,510,104
							Pct Cust	26.23%

Ampacity Source: Southwire/ACSR

Louisville Gas & Electric Co.  
Underground Lines Classification

Excludes Small Quantities

	Size	Ampacity	Avg cost/ft	Quantity	Ln Avg cost/ft	Total Cost
12	6.53	20	0.17	102463	-1.771957	17418.71
6 Cu	26.24	65	0.31	147560	-1.171183	45743.6
2 Cu	66.36	115	1.4	807125	0.3364722	1129975
1	83.69	100	0.94	9181	-0.061875	8630.14
1/0	105.6	120	1.35	95476	0.3001046	128892.6
2/0 Cu	133.1	175	1.44	2768745	0.3646431	3986992.8
4/0 Cu	211.6	230	2	1164717	0.6931472	2329434
350 MCM Cu	350	310	2.92	20435	1.0715836	59670.2
1000 MCM	1000	445	10.5	10980	2.3513753	115290
				5126682		7822047.1

Regression Output:		Anti-log
Constant		-1.228544 0.2927183
Std Err of Y Est		0.479928
R Squared		0.8599632
No. of Observations		9
Degrees of Freedom		7
X Coefficient(s)	0.0083349	
Std Err of Coef.	0.0012713	
Intercept	0.2927183	
Q	5126682	
Zero load Cost	1500673.8	
Total Cost	7822047.1	
Pct Cust	19.19%	

Ampacity Source: National Electric Code Table 310-16

Louisville Gas & Electric Co.  
Transformer Classification

OH 1P  
Eliminate small Observations

Size	Quantity	total Cost	Avg Cost	Ln Avg cost/ft
15	1526	1549125	\$1,015.15	6.9227956
25	3191	4839002	\$1,516.45	7.3241294
37.5	2612	4456030	\$1,705.98	7.4418973
50	1903	4443475	\$2,334.98	7.7557604
75	611	1773189	\$2,902.11	7.9731932
100	408	1279833	\$3,136.85	8.050973
167	265	929949	\$3,509.24	8.1631552
10516	19270603			

Regression Output:

Constant	1223.7422
Std Err of Y Est	399.83394
R Squared	0.8446052
No. of Observations	7
Degrees of Freedom	5
X Coefficient(s)	16.090686
Std Err of Coef.	3.0866039
	12868873
	0.6677981

Pad 1 P

Size	Quantity	total Cost	Avg Cost	Ln Avg cost/ft
25	610	1155668	1894.5344	7.5467284
37.5	1509	3798390	2517.1571	7.8308854
50	2503	8797798	3514.9013	8.1647667
75	1791	5928607	3310.2217	8.1047704
100	556	2134604	3839.2158	8.2530234
150	174	1045866	6010.7241	8.7013005
167	139	662878	4768.9065	8.4698723
225	104	981881	9441.1635	9.1528345
7386	24505690			

Regression Output:

Constant	1132.5527
Std Err of Y Est	919.68546
R Squared	0.8739168
No. of Observations	8
Degrees of Freedom	6
X Coefficient(s)	31.629177
Std Err of Coef.	4.9046251
	8365034.5
	0.3413507

Pad 3 P

Size	Quantity	total Cost	Avg Cost	Ln Avg cost/ft
150	101	811424	8033.901	8.9914255
225	50	502613	10052.26	9.2155528
300	265	3252302	12272.838	9.4151438
500	143	2015204	14092.336	9.5533864
750	169	3363344	19901.444	9.8985476
1000	98	2386094	24347.898	10.100201
1500	53	1551916	29281.434	10.284709
2000	39	1714574	43963.436	10.691114
2500	32	1410663	44083.219	10.693834
950	17008134			

Regression Output:

Constant	6811.3849
Std Err of Y Est	2439.9074
R Squared	0.9725983
No. of Observations	9
Degrees of Freedom	7
X Coefficient(s)	16.215832
Std Err of Coef.	1.0287553
	6470815.7
	0.3804542

Use Linear	Pct	Total Cost	Weighted Pct
OH 1P	0.6677981	19270603	21.17%
Pad 1P	0.3413507	24505690	13.76%
Pad 3P	0.3804542	17008134	10.65%
Total		60784427	45.58%



Louisville Gas & Electric  
Electric Cost of Service Study  
(Summary)

Acct. No.	Account Description	Allocator	Total Systemwide RS	Residential GSS	Gen. Service GSS	Rate PS Primary	Rate PS Secondary	Rate CTO-D Primary	Rate CTO-D Secondary	Rate TPO-D Primary	Rate TPO-D Secondary	Rate RTS Transmission	Sp. Contract FL Knox	Sp. Contract Water Co.	St. Lighting RLS & LLS	St. Lighting LE	Traffic SL TLE
51	Adjustment to Remove FERC Hydropower Program Change		(\$157,155)	(\$59,091)	(\$19,902)	(\$3,709)	(\$33,614)	(\$4,399)	(\$5,123)	(\$20,099)	(\$5,528)	(\$2,977)	(\$743)	(\$1,228)	(\$46)	(\$50)	
22	Adjustment for Injuries and Damages		\$315,883	\$133,598	\$39,692	\$6,359	\$39,067	\$7,318	\$8,901	\$33,987	\$1,009	\$8,287	\$5,081	\$1,258	\$8,974	\$94	
22	Adjustment for Interest Rate Swap Amortization		\$205,788	\$87,563	\$26,015	\$4,174	\$38,714	\$4,927	\$5,834	\$22,276	\$662	\$5,432	\$3,330	\$824	\$5,882	\$62	
09	Adjustment to Correct Edison Electric Inhibit Invoice		\$62,735	\$26,602	\$7,924	\$1,279	\$11,847	\$1,510	\$1,786	\$6,834	\$202	\$1,677	\$1,020	\$253	\$1,752	\$19	
22	Adjustment for property tax expense		\$815,881	\$347,048	\$103,107	\$16,344	\$153,440	\$19,529	\$23,123	\$88,289	\$2,622	\$21,528	\$13,199	\$3,267	\$23,313	\$244	
1	Adjustment for EPCO settlement charges		\$300,368	\$326,239	\$112,783	\$21,945	\$195,816	\$26,511	\$30,114	\$31,060	\$3,358	\$34,278	\$17,269	\$4,532	\$8,603	\$326	
77	Refund Weather Normalized Electric Sales Margins		\$1,889,844	\$1,452,124	\$478,855	\$18,978	\$199,060	\$20,957	\$31,060	\$0	\$0	\$0	\$34,610	\$0	\$0	\$0	
25	Federal & State Income Tax Adjustment		(\$24,635,520)	(\$12,556,271)	(\$2,438,911)	(\$478,555)	(\$4,468,100)	(\$562,215)	(\$691,855)	(\$3,317,291)	(\$72,115)	(\$342,678)	(\$308,970)	(\$85,141)	(\$100,074)	(\$7,075)	
24	Prior income tax adjustments		\$155,889	(\$62,726)	(\$39,086)	\$67,790	(\$2,357)	(\$2,078)	(\$3,288)	(\$2,245)	(\$399)	\$309	\$454	\$217	(\$4,938)	\$28	
24	Adjustment for domestic production activities		\$2,841,448	\$1,078,263	\$671,790	\$45,736	\$862,240	\$35,713	\$38,098	\$38,583	\$6,850	(\$8,648)	(\$7,803)	(\$3,795)	\$85,219	(\$479)	
24	Adjustment for tax basis depreciation reduction		(\$1,289,897)	(\$314,207)	(\$320,367)	(\$21,811)	(\$17,001)	(\$17,001)	(\$27,706)	(\$3,400)	(\$3,267)	\$4,124	\$1,721	\$1,781	(\$40,640)	\$228	
22	Adjustment for Amortization of Investment Tax Credit		(\$87,882)	(\$37,435)	(\$11,122)	(\$1,785)	(\$16,551)	(\$2,107)	(\$2,494)	(\$9,523)	(\$2,322)	(\$3,322)	(\$1,424)	(\$352)	(\$2,515)	(\$26)	
22	Total Expense Adjustments		\$345,846	\$147,152	\$43,718	\$7,015	\$85,060	\$8,281	\$9,804	\$37,435	\$1,112	\$9,128	\$5,597	\$1,385	\$5,885	\$104	
	Total		(\$935,165)	\$7,270,179	\$1,701,810	(\$585,240)	(\$4,539,288)	(\$802,169)	(\$832,843)	(\$3,187,888)	(\$83,640)	(\$1,534,849)	(\$341,038)	(\$124,248)	\$1,885,388	(\$4,799)	\$11,943
	Total Operating Expenses		\$823,809,339	\$335,093,294	\$110,841,578	\$17,846,935	\$165,566,938	\$20,738,717	\$24,256,810	\$91,875,980	\$2,788,182	\$33,771,577	\$13,292,088	\$3,382,688	\$14,288,715	\$242,067	\$313,932
	Net Operating Income - Pro-Forma		\$30,882,701	\$32,386,348	\$23,780,630	\$1,585,580	\$27,787,382	\$1,225,911	\$1,937,232	\$3,510,717	\$239,832	\$751,072	(\$148,819)	(\$510,311)	\$3,843,359	(\$15,568)	(\$2,023)
	Net Cost Rate Base		\$807,852,888	\$240,972,450	\$80,817,438	\$389,699,329	\$45,889,907	\$54,220,821	\$207,482,762	\$8,145,724	\$50,828,344	\$30,954,691	\$7,877,754	\$53,178,529	\$572,888	\$843,010	
	Adjustment to Reflect Depreciation Reserve		(\$2,606,313)	(\$784,788)	(\$128,121)	(\$1,184,871)	(\$151,332)	(\$178,808)	(\$685,064)	(\$20,214)	(\$169,772)	(\$102,296)	(\$32,345)	(\$15,163)	(\$1,556)	(\$2,977)	
	Cash Working Capital		\$12,373,057	\$745,285	\$135,884	\$1,233,512	\$163,153	\$186,834	\$750,662	\$21,070	\$207,456	\$106,855	\$27,805	\$70,024	\$2,001	\$2,306	
	Adjusted Net Cost Rate Base		\$807,429,611	\$240,832,947	\$80,824,689	\$389,747,970	\$45,871,328	\$54,228,847	\$207,559,359	\$6,148,679	\$50,966,028	\$30,959,280	\$7,880,215	\$53,085,380	\$973,033	\$842,395	
	Rate of Return		4.77%	4.01%	9.89%	4.01%	6.09%	2.67%	3.57%	1.89%	3.90%	1.47%	-0.40%	-1.44%	7.43%	-2.72%	-0.21%





Acc'd No.	Account Description	Allocation	Total	Residential	Gen. Service	Rate P5	Rate P6	Rate CTD	Rate CTD	Rate TOD	Rate TOD	Rate RTS	Sp. Contract	Sp. Contract	St. Lighting	St. Lighting	Trans. Bl.	
		System	Rate R9	GIS	Primary	Secondary	Primary	Secondary	Primary	Secondary	Transmission	Ft. Knox	Wider Co.	RLS & LS	LE	TLE		
Accumulated Reserve for Depreciation																		
Production			51	\$1,192,208,431	\$425,765,056	\$143,831,839	\$76,721,935	\$242,955,594	\$31,698,557	\$36,912,231	\$144,817,622	\$4,088,807	\$9,881,059	\$71,450,828	\$5,357,449	\$8,845,105	\$334,689	\$362,621
Transmission			51	\$132,898,667	\$49,978,354	\$16,890,436	\$1,138,005	\$28,444,468	\$3,722,184	\$4,314,672	\$17,006,126	\$472,856	\$4,677,434	\$2,519,010	\$628,548	\$1,038,692	\$39,303	\$42,582
Distribution			53	\$397,104,732	\$327,886,149	\$49,448,660	\$4,098,125	\$4,948,633	\$4,676,614	\$6,186,998	\$19,519,027	\$807,389	\$6,610	\$3,180,676	\$729,234	\$3,610,662	\$12,609	\$42,037
General & Common Plant			64	\$89,985,313	\$38,327,485	\$11,270,240	\$1,820,894	\$16,933,512	\$2,493,310	\$2,545,424	\$9,715,212	\$288,714	\$2,364,995	\$1,492,596	\$358,479	\$2,297,225	\$16,947	\$40,130
Intangible Plant			64	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL ACCUMULATED RESERVE FOR DEPRECIATION				\$1,742,324,083	\$741,977,054	\$224,841,175	\$38,778,820	\$314,477,527	\$42,244,885	\$48,978,246	\$181,076,657	\$4,860,627	\$46,878,718	\$28,538,108	\$7,088,770	\$46,878,218	\$264,638	\$882,378
Net Utility Plant				\$2,131,822,334	\$897,048,382	\$299,481,072	\$49,228,795	\$401,082,265	\$51,042,025	\$89,494,818	\$230,752,757	\$8,852,488	\$89,288,879	\$34,487,041	\$8,038,093	\$89,031,401	\$888,632	\$1,094,887
Rate Base Adjustments and Working Capital																		
Working Capital Assets																		
Cash			67	\$70,028,892	\$27,814,523	\$8,275,459	\$1,889,171	\$14,437,951	\$1,919,311	\$2,189,870	\$8,798,482	\$46,935	\$2,431,586	\$1,235,444	\$328,914	\$820,747	\$23,433	\$27,026
Materials and Supplies			67	\$78,422,832	\$33,412,079	\$9,212,800	\$1,387,233	\$14,472,561	\$1,874,008	\$2,192,337	\$8,470,873	\$23,176	\$2,061,975	\$1,266,536	\$315,436	\$2,280,239	\$23,493	\$33,336
Prepayments			67	\$428,869	\$1,379,082	\$409,130	\$85,230	\$607,954	\$71,330	\$91,684	\$349,635	\$10,390	\$83,106	\$32,276	\$12,797	\$93,291	\$970	\$1,624
Wd/Costs Add Dealing Project			61	\$1,024,627	\$388,891	\$130,659	\$24,282	\$220,082	\$21,883	\$31,342	\$131,595	\$7,712	\$16,194	\$19,492	\$4,864	\$8,018	\$304	\$330
Sub-total				\$153,374,450	\$62,822,574	\$19,788,110	\$3,288,638	\$30,016,348	\$3,892,471	\$4,594,979	\$17,760,585	\$512,783	\$4,614,822	\$2,580,748	\$887,150	\$3,182,315	\$48,220	\$88,315
Other Rate Base Items																		
Less:																		
Accumulated Deferred Income Taxes			57	\$338,601,820	\$144,261,482	\$42,729,950	\$6,894,920	\$63,596,148	\$8,091,301	\$9,582,395	\$36,574,219	\$1,086,861	\$8,202,704	\$5,448,453	\$1,353,305	\$9,738,909	\$101,435	\$169,838
FAS 109 Deferred Income Taxes			67	\$37,261,382	\$15,500,794	\$4,717,497	\$755,563	\$7,009,697	\$891,840	\$1,056,191	\$4,031,285	\$119,796	\$981,274	\$607,744	\$149,164	\$1,075,647	\$11,180	\$18,720
Asset Retirement Obligations - No Assets			67	\$3,362,287	\$1,423,974	\$422,469	\$67,663	\$627,744	\$73,867	\$94,586	\$368,016	\$10,728	\$87,877	\$53,978	\$13,358	\$96,338	\$1,001	\$1,676
Asset Retirement Obligations - Regulatory Liabilities			67	\$370,629	\$161,286,511	\$88,927	\$16,243	\$132,137	\$16,812	\$19,910	\$75,922	\$2,259	\$18,498	\$11,362	\$3,812	\$30,277	\$211	\$353
Sub-total				\$378,562,090	\$161,286,511	\$47,850,889	\$7,663,204	\$71,101,452	\$9,046,197	\$10,713,263	\$40,890,528	\$1,215,127	\$9,293,338	\$6,113,813	\$1,519,015	\$10,910,607	\$113,465	\$189,881
Less:																		
Customer Advances			68	\$1,348,632	\$1,097,579	\$246,642	\$25,092	\$246,822	\$28,793	\$15,108	\$120,053	\$4,428	\$0	\$19,286	\$4,475	\$24,579	\$48	\$111
TOTAL RATE BASE				\$1,904,726,008	\$807,892,866	\$240,872,460	\$37,877,435	\$389,669,128	\$45,853,507	\$54,220,821	\$207,892,182	\$6,165,724	\$50,028,344	\$29,854,991	\$7,087,754	\$53,878,529	\$72,268	\$340,970





Louisville Gas & Electric  
Electric Cost of Service Study  
(Continued)

Acct. No.	Account Description	Allocator	Total System	Residential Rate RS	Gen. Service GSS	Rate PS Primary	Rate PS Secondary	Rate CTRD Primary	Rate CTRD Secondary	Rate TRD Primary	Rate TRD Secondary	Rate RTS Transmission	Sp. Contract P.L. Knox	Sp. Contract Water Co.	St. Lighting RLS & LS	St. Lighting LE	Traffic SL TLE	
	Regulatory Credits		51 (\$1,705,393)	(\$641,314)	(\$216,648)	(\$40,240)	(\$36,410)	(\$47,243)	(\$55,600)	(\$718,133)	(\$61,153)	(\$59,990)	(\$37,311)	(\$8,062)	(\$13,235)	(\$504)	(\$546)	
	Production		52 (\$1,467)	(\$352)	(\$188)	(\$35)	(\$314)	(\$41)	(\$48)	(\$189)	(\$5)	(\$25)	(\$28)	(\$7)	(\$11)	(\$0)	(\$0)	
	Transmission		53 (\$16,231)	(\$9,515)	(\$7,021)	(\$168)	(\$1,796)	(\$191)	(\$253)	(\$799)	(\$33)	(\$0)	(\$78)	(\$30)	(\$146)	(\$5)	(\$17)	
	Distribution		54 (\$1,189)	(\$307)	(\$150)	(\$24)	(\$223)	(\$29)	(\$34)	(\$128)	(\$4)	(\$31)	(\$19)	(\$5)	(\$34)	(\$0)	(\$1)	
	Common		55															
	Accretion Expense		56															
	Production		57	\$1,483,472	\$357,860	\$188,436	\$35,013	\$311,238	\$41,531	\$48,364	\$189,748	\$5,332	\$52,189	\$28,106	\$7,013	\$11,589	\$639	\$475
	Transmission		58	\$1,395	\$325	\$177	\$298	\$39	\$45	\$78	\$5	\$49	\$28	\$2	\$7	\$11	\$0	\$0
	Distribution		59	\$15,665	\$9,103	\$1,976	\$1,756	\$187	\$247	\$781	\$24	\$0	\$19	\$29	\$144	\$0	\$16	
	Common		60	\$1,163	\$466	\$147	\$218	\$28	\$33	\$126	\$4	\$1	\$5	\$2	\$4	\$0	\$1	
	Property Taxes & Other		61	\$7,885,577	\$2,347,457	\$377,789	\$3,501,545	\$45,980	\$87,882	\$2,016,666	\$59,832	\$49,118	\$30,417	\$74,671	\$51,589	\$21,589	\$5,420	\$1,214
	Authorization of Investment Tax Credit		62	\$1,881,222	\$790,218	\$255,299	\$312,019	\$44,703	\$72,911	\$1,884	\$3,986	\$49,408	\$17,409	\$30,417	\$7,479	\$21,481	\$57	\$23
	Gain on Disposition of Advancements		63	(\$69,274)	(\$38,138)	(\$1,448)	(\$1,579)	(\$1,579)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)	(\$1,884)
	Interest		64	\$48,922,810	\$20,592,602	\$6,131,765	\$9,147,387	\$1,194,939	\$1,378,823	\$5,267,711	\$158,089	\$1,286,067	\$70,259	\$194,986	\$1,397,639	\$14,524	\$24,067	\$24,067
	Other Expenses		65	\$88,643,878	\$38,714,564	\$8,877,898	\$1,395,908	\$12,240,317	\$1,847,811	\$1,530,487	\$7,450,905	\$221,083	\$1,821,042	\$1,113,709	\$276,688	\$1,840,864	\$20,568	\$34,700
	Total Other Expenses		66	\$88,643,878	\$38,714,564	\$8,877,898	\$1,395,908	\$12,240,317	\$1,847,811	\$1,530,487	\$7,450,905	\$221,083	\$1,821,042	\$1,113,709	\$276,688	\$1,840,864	\$20,568	\$34,700
	TOTAL EXPENSES		67	\$88,643,878	\$38,714,564	\$8,877,898	\$1,395,908	\$12,240,317	\$1,847,811	\$1,530,487	\$7,450,905	\$221,083	\$1,821,042	\$1,113,709	\$276,688	\$1,840,864	\$20,568	\$34,700
	Calculation of Taxable Income and Allocation of Income Taxes:																	
	Total Operating Revenue		68	\$386,481,762	\$382,097,680	\$197,184,376	\$20,622,875	\$189,708,423	\$23,737,046	\$28,229,215	\$102,394,431	\$3,197,444	\$28,722,557	\$14,005,841	\$3,519,708	\$16,551,893	\$24,400	\$308,881
	Operating Expenses		69	\$771,623,055	\$305,086,512	\$95,938,578	\$17,246,580	\$197,080,540	\$20,705,464	\$23,818,710	\$95,059,046	\$2,883,144	\$28,088,505	\$13,628,134	\$3,520,053	\$10,728,629	\$253,688	\$308,374
	Interest Expense		70	\$48,922,810	\$20,592,602	\$6,131,766	\$9,147,387	\$1,194,939	\$1,378,823	\$5,267,711	\$158,089	\$1,286,067	\$70,259	\$194,986	\$1,397,639	\$14,524	\$24,067	\$24,067
	Taxable Income		71	\$139,035,897	\$48,359,476	\$25,113,033	\$2,280,520	\$13,569,487	\$1,466,653	\$1,038,683	\$2,016,674	\$459,040	\$462,018	\$407,446	\$185,251	\$4,454,214	\$25,012	\$38,780
	Income Taxes		72	\$48,789,614	\$18,088,387	\$11,893,271	\$808,702	\$41,370,115	\$82,281	\$1,028,587	\$883,075	\$121,273	\$153,194	\$138,143	\$68,134	\$1,508,704	\$8,472	\$8,700





Louisville Gas & Electric  
Electric Cost of Service Study  
(Labor)

Acct No.	Account Description	Allocation System	Total		Rate PS Primary	Rate PS Secondary	Rate CTOD Primary	Rate CTOD Secondary	Rate TOD Primary	Rate TOD Secondary	Rate RTS	Sp. Contract	Sp. Contract	St. Lighting	St. Lighting	Trolley-St.
			Residential	Gen. Service												
6	999 INROOM AND INSTRUC LOAD MGMT	\$0	\$239,850	\$31,771	\$618	\$21,018	\$288	\$1,153	\$618	\$233	\$69	\$14	\$27	\$7,286	\$8	\$67
	910 MISCELLANEOUS CUSTOMER SERVICE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	911 DEMONSTRATION AND SELLING EXP	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	912 DEMONSTRATION AND SELLING EXP	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	913 WATER HEATER - HEAT PDMP PROGRAM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	915 MISCELLANEOUS CONTRACT	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	916 MISC SALES EXPENSE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Customer Service Labor Expense	\$734,475	\$581,363	\$77,008	\$861,240	\$8,059,873	\$1,017,486	\$1,188,144	\$4,646,439	\$137,789	\$1,232,587	\$676,256	\$172,171	\$554,372	\$12,613	\$20,532
	Sub-Total Labor Exp	\$43,742,295	\$19,774,754	\$53,866,658	\$861,240	\$8,059,873	\$1,017,486	\$1,188,144	\$4,646,439	\$137,789	\$1,232,587	\$676,256	\$172,171	\$554,372	\$12,613	\$20,532
	Administrative and General Expense	\$10,964,839	\$4,986,908	\$1,350,264	\$215,961	\$2,020,354	\$255,051	\$297,830	\$1,164,715	\$34,539	\$308,966	\$169,216	\$43,158	\$139,264	\$3,162	\$5,147
	920 ADMIN & GEN SALARIES	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	921 OFFICE SUPPLIES AND EXPENSES	(\$1,341,699)	(\$606,546)	(\$165,226)	(\$36,426)	(\$247,218)	(\$31,209)	(\$36,444)	(\$142,519)	(\$4,220)	(\$37,806)	(\$20,743)	(\$5,281)	(\$17,041)	(\$387)	(\$630)
	922 ADMIN EXPENSES TRANSFERRED - CREDIT	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	923 OUTSIDE SERVICES EMPLOYED	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	924 PROPERTY INSURANCE	\$42,291	\$19,119	\$5,208	\$833	\$7,792	\$984	\$1,149	\$4,692	\$133	\$1,192	\$634	\$166	\$337	\$12	\$20
	925 DAMAGES AND DAMAGES - INSURAN	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	926 EMPLOYEE BENEFITS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	928 REGULATORY COMMISSION FEES	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	929 MISCELLANEOUS GENERAL EXPENSES	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	930 REBTS AND LEASES	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	931 REBTS AND LEASES	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	932 MAINTENANCE OF GENERAL PLANT	\$2,758,776	\$1,175,465	\$348,714	\$55,845	\$218,107	\$65,917	\$78,066	\$297,956	\$8,455	\$72,520	\$44,550	\$11,025	\$79,548	\$826	\$1,384
	Total Administrative and General Expense	\$12,424,197	\$5,544,940	\$1,538,962	\$246,213	\$2,299,036	\$290,743	\$340,601	\$1,324,644	\$39,301	\$344,871	\$193,977	\$49,068	\$202,908	\$3,614	\$5,921
	Total Operation and Maintenance Expense	\$56,166,592	\$23,319,695	\$6,925,620	\$1,107,752	\$10,358,909	\$1,308,229	\$1,528,745	\$5,971,082	\$177,089	\$1,577,438	\$870,223	\$221,239	\$757,880	\$16,227	\$26,453
	Operation and Maintenance Expenses Less Franchise Power	\$56,166,592	\$23,319,695	\$6,925,620	\$1,107,752	\$10,358,909	\$1,308,229	\$1,528,745	\$5,971,082	\$177,089	\$1,577,438	\$870,223	\$221,239	\$757,880	\$16,227	\$26,453



Louisville Gas & Electric  
(Revenues)

Acct. No.	Account Description	Allocator	Total		Residential Rate R3	Gen. Service GSS	Rate P3 Primary	Rate P3 Secondary	Rate CTOD Primary	Rate CTOD Secondary	Rate ITOD Primary	Rate ITOD Secondary	Rate RTS Transmission	Sp. Contract Ft. Knox	Sp. Contract White Co.	St. Lighting RUS & LS	St. Lighting LE	Traffic SL TLE
			System	Rate R3														
<b>REVENUE</b>																		
74	Sales to Utility Consumers		\$783,347,033	\$307,974,525	\$112,545,511	\$15,994,645	\$138,911,598	\$18,287,716	\$21,999,815	\$77,266,680	\$2,303,294	\$19,755,000	\$10,433,529	\$2,592,630	\$14,660,336	\$177,965	\$243,818	
1	Intercompany Sales		\$110,077,228	\$39,710,695	\$12,727,658	\$2,658,910	\$23,833,821	\$3,226,743	\$3,665,379	\$14,894,693	\$408,662	\$4,172,194	\$2,101,931	\$351,667	\$1,047,170	\$39,624	\$38,362	
81	Off-System Sales		\$59,391,514	\$21,946,554	\$7,483,938	\$1,415,761	\$12,770,723	\$1,696,098	\$1,953,928	\$7,784,229	\$216,927	\$2,158,280	\$1,129,011	\$387,972	\$507,079	\$19,187	\$19,727	
1	Broken Purchases		(83,239)	(31,168)	(3404)	(778)	(701)	(959)	(109)	(388)	(12)	(125)	(862)	(316)	(331)	(31)	(31)	
1	Solded Swap Revenue		\$13,437,849	\$4,847,768	\$1,675,833	\$324,593	\$2,909,566	\$393,911	\$447,459	\$1,818,501	\$49,888	\$309,329	\$256,598	\$67,346	\$127,836	\$4,837	\$4,683	
1	Other Electric Revenue		(\$3,289,501)	(\$1,179,479)	(\$407,736)	(\$707,975)	(\$707,975)	(\$395,840)	(\$108,869)	(\$442,399)	(12,138)	(8123,922)	(\$62,431)	(\$16,385)	(\$31,103)	(\$1,177)	(\$1,159)	
79	Forbidden Discounts		\$5,060,755	\$3,952,450	\$746,971	\$112,640	\$228,694	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
80	Misc. Service Revenues		\$683,922	\$814,597	\$149,325	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
69	Rent From Electric Property		\$2,613,670	\$1,108,362	\$330,139	\$33,269	\$493,618	\$62,933	\$74,408	\$284,744	\$8,434	\$69,889	\$42,479	\$0	\$10,536	\$72,977	\$786	\$1,294
68	Other Electric Revenue		\$4,020,971	\$1,704,974	\$307,848	\$81,943	\$193,324	\$86,809	\$114,460	\$48,617	\$12,974	\$107,510	\$65,345	\$16,208	\$112,260	\$1,209	\$1,991	
74	Unbilled Revenue		\$2,871,000	\$1,128,313	\$472,291	\$50,157	\$397,677	\$58,781	\$82,743	\$290,605	\$9,415	\$74,500	\$39,241	\$9,751	\$51,139	\$689	\$917	
	<b>TOTAL REVENUE</b>		<b>\$958,481,752</b>	<b>\$382,037,690</b>	<b>\$137,144,375</b>	<b>\$20,622,875</b>	<b>\$199,796,423</b>	<b>\$23,737,048</b>	<b>\$28,229,215</b>	<b>\$102,334,431</b>	<b>\$3,197,444</b>	<b>\$26,722,657</b>	<b>\$14,905,641</b>	<b>\$3,815,708</b>	<b>\$16,851,693</b>	<b>\$243,100</b>	<b>\$308,681</b>	



Louisville Gas & Electric  
Electric Cost of Service Study  
(Allocator Amounts)

Alloc. No	Allocator Description	Total System	Residential		Gen. Service		Rate PS		Rate CTOD		Rate TOD		Rate FTS		Sp. Contract		Sp. Contract		St. Lighting		Turbine	
			Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS	Rate PS
81	CRS System Sales Allocator	59,391,514	21,946,554	7,485,838	1,415,781	12,770,723	1,686,088	1,853,828	7,794,229,219,927	0	2,158,380	1,129,014	287,972	507,079	19,487	19,737						
82	Rate Switching	30,674	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	BIP	424,405,654	242,460,021	52,819,848	6,852,287	58,990,544	7,882,305	8,445,823	22,794,742	1,049,694	0	0	0	0	0	0	0	0	0	0	0	0
84	Primary Dist Lines	80,427,968	55,998,745	14,534,631	7,713,070	0	0	0	0	189,212	0	0	0	0	0	0	0	0	0	0	0	0
85	Secondary Dist Lines	120,200,230	93,453,428	20,149,819	0	9,077,488	0	1,312,051	0	183,448	0	0	0	0	0	0	0	0	0	0	0	0
86	Dist Transformers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87																						
88																						
89																						

MEMO CRS System Sales Allocator

CRS System Sales Allocator	59,391,514	22,394,188	7,544,033	1,401,742	12,770,723	1,686,088	1,853,828	7,794,229,219,927	0	2,158,380	1,129,014	287,972	507,079	19,487	19,737						
Less: Adjustment to Realized Expenses	(25,419,000)	(9,141,028)	(3,149,000)	(842,063)	(5,488,385)	(748,771)	(843,742)	(3,528,844)	(94,071)	(880,477)	(483,848)	(128,989)	(241,051)	(9,121)	(8,891)						
Costs allocated on Energy	25,419,000	9,141,028	3,149,000	842,063	5,488,385	748,771	843,742	3,528,844	94,071	880,477	483,848	128,989	241,051	9,121	8,891						
Net Adjustment	0	387,842	69,995	(14,078)	(85,961)	(33,384)	(17,538)	(187,589)	(2,653)	(68,577)	(3,173)	(7,200)	(40,585)	(1,831)	8,719						





Louisville Gas & Electric  
Natural Gas Cost of Service Study  
(Summary)

Account Description	Allocator	Total	Residential	Commercial	Industrial	As Available	Firm	Special
			(RGS)	(CGS)	(IGS)	(AAGS)	Transportation Service (FT)	Contracts (SP)
<b>Revenues</b>								
Operating Revenues		\$418,890,260	\$273,733,052	\$126,407,695	\$10,424,199	\$2,836,844	\$4,119,691	\$1,368,778
Total Revenue Adjustments		(\$299,715,634)	(\$191,700,564)	(\$96,621,128)	(\$8,518,361)	(\$2,614,927)	(\$224,483)	(\$26,172)
<b>Total Adjusted Revenues</b>		<b>\$119,174,626</b>	<b>\$82,032,489</b>	<b>\$29,786,568</b>	<b>\$1,905,838</b>	<b>\$221,917</b>	<b>\$3,895,208</b>	<b>\$1,342,605</b>
<b>Expenses</b>								
Operation and Maintenance Expenses		\$29,143,381	\$19,217,822	\$7,242,224	\$578,282	\$65,813	\$1,456,298	\$582,942
Customer Accounting Expenses		\$13,152,228	\$11,849,305	\$1,148,514	\$88,643	\$6,127	\$57,189	\$2,451
Administrative & General Expenses		\$17,863,027	\$12,588,135	\$3,913,148	\$308,900	\$34,272	\$737,758	\$280,815
Depreciation and Amortization Expenses		\$20,081,022	\$14,840,512	\$3,783,447	\$264,491	\$40,492	\$845,951	\$306,129
Other Expenses (ITC amortization, Reg Credits, Accretion)		(\$167,322)	(\$117,875)	(\$35,297)	(\$2,635)	(\$374)	(\$8,163)	(\$2,979)
Other Taxes		\$5,819,250	\$4,128,282	\$1,234,060	\$97,949	\$11,705	\$250,813	\$86,440
<b>Total Operating Expenses</b>		<b>\$85,891,586</b>	<b>\$62,506,182</b>	<b>\$17,286,094</b>	<b>\$1,335,629</b>	<b>\$158,036</b>	<b>\$3,339,847</b>	<b>\$1,285,799</b>
<b>Pro-Forma Adjustments to Expenses</b>								
Eliminate DSM Expenses	47	(\$1,898,813)	(\$1,806,969)	(\$85,362)	\$0	(\$736)	(\$5,756)	\$0
Year-End Customer Adjustment	44	\$541,722	\$79,790	\$432,103	\$29,829	\$0	\$0	\$0
Depreciation Expenses	42	\$385,987	\$285,257	\$72,723	\$5,084	\$778	\$16,260	\$5,884
Labor Adjustment	41	\$209,494	\$148,619	\$44,426	\$3,526	\$421	\$9,029	\$3,472
Pensions/Post Retirement Benefits Adjmt.	42	\$73,706	\$58,166	\$14,829	\$1,037	\$159	\$3,316	\$1,200
Property Insurance Adjmt.	43	\$88,922	\$61,635	\$20,048	\$1,534	\$183	\$4,043	\$1,479
Liability Insurance Adjmt.	43	\$128,741	\$89,235	\$29,026	\$2,221	\$265	\$5,854	\$2,141
Eliminate Advertising Expenses	30	(\$149,398)	(\$103,672)	(\$35,766)	\$2,136	(\$284)	(\$5,327)	(\$1,933)
Rate Case Expenses	38	\$107,664	\$70,996	\$26,755	\$2,136	\$243	\$5,380	\$2,154
Retired Mainframe Adjmt.	43	(\$352,000)	(\$243,983)	(\$79,362)	(\$6,072)	(\$724)	(\$16,005)	(\$5,855)
2009 Winter Storm Adjmt.	45	\$33,538	\$20,494	\$8,245	\$691	\$117	\$2,918	\$1,073
Interest Rate Swap Amortization	43	\$53,039	\$36,763	\$11,956	\$915	\$109	\$2,412	\$882
Normalize 92% Injuries/Damages Adjmt. (See Func Assgn)	43	\$38,531	\$26,707	\$8,687	\$665	\$79	\$1,752	\$641
Adjustment to correct Edison Electric Invoice	43	(\$62,735)	(\$43,484)	(\$14,144)	(\$1,082)	(\$129)	(\$2,852)	(\$1,043)
Property Tax Adjmt.	43	(\$29,440)	(\$20,406)	(\$6,638)	(\$508)	(\$61)	(\$1,339)	(\$490)
Federal & State Income Tax Adjmt.	46	\$3,014,150	\$1,936,024	\$964,531	\$85,054	\$26,221	\$2,154	\$166
Prior Income tax true-ups & adjustments	40	(\$97,159)	(\$68,047)	(\$20,673)	(\$1,554)	(\$221)	(\$4,882)	(\$1,782)
Tax Basis depreciation reduction Adjmt.	43	\$232,125	\$160,894	\$52,335	\$4,004	\$477	\$10,554	\$3,861
		\$13,472	\$9,338	\$3,037	\$232	\$28	\$613	\$224
<b>Total Expense Adjustments</b>		<b>\$2,336,546</b>	<b>\$697,365</b>	<b>\$1,446,740</b>	<b>\$125,317</b>	<b>\$26,925</b>	<b>\$28,124</b>	<b>\$12,074</b>
<b>Net Income Before Income Taxes</b>		<b>\$30,946,494</b>	<b>\$18,828,941</b>	<b>\$11,053,734</b>	<b>\$444,893</b>	<b>\$36,956</b>	<b>\$517,237</b>	<b>\$64,732</b>
<b>Income Taxes</b>	23	\$6,084,288	\$3,418,876	\$2,617,820	\$82,503	\$3,929	(\$1,529)	(\$37,311)
<b>Net Operating Income (Pro-Forma)</b>		<b>\$24,862,206</b>	<b>\$15,410,066</b>	<b>\$8,435,914</b>	<b>\$362,390</b>	<b>\$33,027</b>	<b>\$518,766</b>	<b>\$102,043</b>
<b>Unadjusted Net Cost Rate Base</b>		<b>\$491,799,638</b>	<b>\$340,882,709</b>	<b>\$110,881,594</b>	<b>\$8,483,064</b>	<b>\$1,011,024</b>	<b>\$22,361,054</b>	<b>\$8,180,194</b>
Depreciation Adjustment	42	(\$385,987)	(\$285,257)	(\$72,723)	(\$5,084)	(\$778)	(\$16,260)	(\$5,884)
Cash Working Capital Adjustment	38	(\$94,673)	(\$62,430)	(\$23,527)	(\$1,879)	(\$214)	(\$4,731)	(\$1,894)
<b>Net Cost Rate Base</b>		<b>\$491,318,978</b>	<b>\$340,535,023</b>	<b>\$110,785,344</b>	<b>\$8,476,102</b>	<b>\$1,010,032</b>	<b>\$22,340,062</b>	<b>\$8,172,416</b>
<b>Rate of Return -- Pro-Forma</b>		<b>5.06%</b>	<b>4.55%</b>	<b>7.61%</b>	<b>4.28%</b>	<b>3.27%</b>	<b>2.32%</b>	<b>1.25%</b>

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Rate Base)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
<b>Plant-in-Service</b>									
<b>Underground Storage Plant</b>									
350-357	Underground Storage Plant	2	\$62,838,253	\$40,973,701	\$20,197,085	\$1,667,466	\$0	\$0	\$0
358	Asset Retire Obligations Gas Plant	2	\$520,992	\$339,713	\$167,454	\$13,825	\$0	\$0	\$0
	<b>Sub-total</b>		\$63,359,245	\$41,313,414	\$20,364,539	\$1,681,291	\$0	\$0	\$0
<b>Transmission Plant</b>									
365-371	Transmission	3	\$13,658,204	\$8,905,836	\$4,389,936	\$362,432	\$0	\$0	\$0
	Demand		\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Customer		\$13,658,204	\$8,905,836	\$4,389,936	\$362,432	\$0	\$0	\$0
	<b>Sub-total</b>		\$13,658,204	\$8,905,836	\$4,389,936	\$362,432	\$0	\$0	\$0
<b>Distribution Plant</b>									
374	Land and Land Rights	9	\$133,743	\$76,600	\$35,733	\$2,878	\$712	\$9,979	\$7,841
375	Structures and Improvements	9	\$701,947	\$402,031	\$187,546	\$15,103	\$3,737	\$52,376	\$41,154
376	Mains								
	<b>L/M Pressure</b>								
	Demand	49	\$211,603,955	\$120,221,575	\$57,990,023	\$5,078,514	\$785,095	\$20,508,128	\$7,020,620
	Customer	13	\$36,809,325	\$33,655,155	\$3,124,581	\$26,006	\$231	\$3,352	\$0
	<b>H Pressure</b>								
	Demand	48	\$33,075,872	\$17,384,411	\$8,484,997	\$744,004	\$201,888	\$4,193,580	\$2,066,992
	Customer	12	\$2,476,779	\$2,264,090	\$210,216	\$1,788	\$117	\$544	\$23
378	Meas. & Reg. Station Equip. - Gen.	9	\$9,160,306	\$5,246,449	\$2,447,449	\$197,088	\$48,762	\$683,502	\$537,056
379	Meas. & Reg. Station Equip. - City Gate	9	\$4,003,923	\$2,293,196	\$1,059,767	\$86,146	\$21,314	\$298,755	\$234,745
380	Services	14	\$138,086,721	\$127,087,686	\$10,777,475	\$100,389	\$33,831	\$81,554	\$5,785
381	Meters	15	\$34,911,864	\$26,447,911	\$6,758,765	\$396,597	\$113,515	\$1,130,352	\$64,724
382	Meter Installations	15	\$0	\$0	\$0	\$0	\$0	\$0	\$0
383	House Regulators	15	\$13,852,262	\$10,493,951	\$2,681,730	\$157,361	\$45,040	\$448,499	\$25,681
384	House Regulators Installations	15	\$0	\$0	\$0	\$0	\$0	\$0	\$0
385	Indust. Meas. & Reg. Station Equip.	15	\$155,769	\$118,005	\$30,156	\$1,770	\$506	\$5,043	\$289
387	Other Equipment	15	\$51,112	\$38,721	\$9,895	\$581	\$166	\$1,655	\$95
388	Asset Retire Obligations Gas Plant - City Gate	9	\$364	\$208	\$97	\$8	\$2	\$27	\$21
	<b>L/M Pressure</b>								
	Demand	49	\$22,657	\$12,872	\$6,209	\$544	\$84	\$2,196	\$752
	Customer	13	\$3,941	\$3,603	\$335	\$3	\$0	\$0	\$0
	<b>H Pressure</b>								
	Demand	48	\$3,542	\$1,862	\$909	\$80	\$22	\$449	\$221
	Customer	12	\$265	\$242	\$22	\$0	\$0	\$0	\$0
	<b>Sub-total</b>		\$485,054,347	\$345,748,568	\$93,815,905	\$6,808,859	\$1,255,022	\$27,419,993	\$10,006,000
<b>Other Plant-in-Service</b>									

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Rate Base)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
117	Gas Stored - Underground/Non-Current	7	\$2,139,990	\$1,417,390	\$667,855	\$54,744	\$0	\$0	\$0
301-303	Intangible Plant	34	\$1,187	\$836	\$250	\$19	\$3	\$58	\$21
389-399	General Plant	34	\$9,196,988	\$6,479,086	\$1,940,126	\$144,852	\$20,535	\$448,664	\$163,725
	Common Utility Plant	34	\$58,087,778	\$40,921,624	\$12,253,755	\$914,878	\$129,701	\$2,833,742	\$1,034,078
	Sub-total		\$69,425,943	\$48,818,936	\$14,861,987	\$1,114,492	\$150,239	\$3,282,464	\$1,197,824
<b>TOTAL PLANT-IN-SERVICE</b>			<b>\$631,497,739</b>	<b>\$444,786,754</b>	<b>\$133,432,368</b>	<b>\$9,967,075</b>	<b>\$1,405,262</b>	<b>\$30,702,456</b>	<b>\$11,203,824</b>
<b>Construction Work In Progress</b>									
	Underground Storage	7	\$4,142,848	\$2,743,953	\$1,292,914	\$105,980	\$0	\$0	\$0
	Transmission	8	\$1,250,818	\$828,461	\$390,360	\$31,998	\$0	\$0	\$0
	Distribution Mains								
	L/M Pressure								
	Demand	49	\$20,992,014	\$11,926,493	\$5,752,857	\$503,810	\$77,865	\$2,034,494	\$696,475
	Customer	13	\$3,651,642	\$3,338,735	\$309,972	\$2,580	\$23	\$333	\$0
	H Pressure								
	Demand	48	\$3,281,267	\$1,724,607	\$641,748	\$73,808	\$20,028	\$416,021	\$205,054
	Customer	12	\$245,707	\$224,607	\$20,854	\$177	\$12	\$54	\$2
	Other Distribution	35	\$18,893,204	\$13,467,147	\$3,654,195	\$265,210	\$48,884	\$1,068,028	\$389,741
	General	34	\$648,045	\$456,534	\$136,707	\$10,207	\$1,447	\$31,614	\$11,536
	Common	34	\$42,241,284	\$29,758,101	\$8,910,899	\$665,297	\$94,318	\$2,060,690	\$751,979
	Sub-total		\$95,346,829	\$64,468,638	\$21,310,505	\$1,659,067	\$242,597	\$5,611,233	\$2,054,788
<b>TOTAL GAS PLANT AT ORIGINAL COST</b>			<b>\$726,844,568</b>	<b>\$509,255,392</b>	<b>\$154,742,873</b>	<b>\$11,626,142</b>	<b>\$1,647,859</b>	<b>\$36,313,689</b>	<b>\$13,258,612</b>
<b>LESS</b>									
<b>Depreciation Reserve</b>									
	Underground Storage	7	\$32,445,945	\$21,490,087	\$10,125,841	\$830,017	\$0	\$0	\$0
	Transmission	8	\$12,204,475	\$8,083,452	\$3,808,814	\$312,209	\$0	\$0	\$0
	Distribution	35	\$174,352,614	\$124,279,201	\$33,722,094	\$2,447,442	\$451,117	\$9,856,107	\$3,596,653
	General and Intangible	34	\$6,203,552	\$4,370,273	\$1,308,654	\$97,705	\$13,852	\$302,633	\$110,436
	Common	34	\$26,723,610	\$18,826,224	\$5,637,409	\$420,895	\$59,670	\$1,303,679	\$475,734
	Sub-total		\$251,930,196	\$177,049,236	\$54,602,813	\$4,108,268	\$524,639	\$11,462,418	\$4,182,822
<b>Other Rate Base Items</b>									
	Customer Advances for Construction	36	\$7,485,292	\$5,331,504	\$1,429,252	\$105,538	\$18,111	\$439,611	\$161,276
	Accum. Deferred Income Taxes	34	\$48,874,215	\$34,430,862	\$10,310,132	\$769,765	\$109,129	\$2,384,269	\$870,059
	FAS 109 Deferred Income Taxes	34	\$4,053,496	\$2,855,603	\$855,095	\$63,842	\$9,051	\$197,745	\$72,160
	Asset Retirement Obligation - Net Assets	37	\$131,229	\$92,224	\$28,442	\$2,140	\$273	\$5,971	\$2,179
	Asset Retirement Obligation - Liabilities	37	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Asset Retirement Obligation - Regulatory Assets	37	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Louisville Gas & Electric  
Natural Gas Cost of Service Study  
(Rate Base)

Acct No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)	
	Asset Retirement Obligation - Regulatory Liabilities	37	(\$2,353,476)	(\$1,653,955)	(\$610,087)	(\$38,379)	(\$4,901)	(\$107,079)	(\$39,075)	
	Accum Depr. Reclassification	34	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
			\$58,190,756							
PLUS										
	Materials and Supplies	34	\$60,055	\$42,307	\$12,669	\$946	\$134	\$2,930	\$1,069	
	Prepayments	34	\$659,791	\$464,809	\$139,184	\$10,392	\$1,473	\$32,187	\$11,746	
	Gas Stored Underground	7	\$66,447,790	\$44,010,701	\$20,737,254	\$1,699,836	\$0	\$0	\$0	
	Cash Working Capital	38	\$7,908,386	\$5,214,973	\$1,965,259	\$156,923	\$17,859	\$395,183	\$158,188	
	Sub-total		\$75,076,022	\$49,732,791	\$22,854,366	\$1,868,097	\$19,466	\$430,300	\$171,003	
ADJUSTMENTS										
	Unamortized Debt	-	-	-	-	-	-	-	-	
	Regulatory	-	-	-	-	-	-	-	-	
	Customer Advances for Construction	-	-	-	-	-	-	-	-	
	Depreciation Adjustment	-	-	-	-	-	-	-	-	
			\$	\$	\$	\$	\$	\$	\$	
<b>NET COST RATE BASE</b>			<b>\$491,799,638</b>	<b>\$340,882,709</b>	<b>\$110,881,594</b>	<b>\$8,483,064</b>	<b>\$1,011,024</b>	<b>\$22,361,054</b>	<b>\$8,180,194</b>	

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Expenses)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Service (FT)	Special Contracts (SP)
<b>O &amp; M Expenses</b>									
807-813	<b>Procurement Expenses</b>								
	Demand	6	\$69,689	\$39,913	\$18,619	\$1,499	\$371	\$5,200	\$4,086
	Commodity	1	\$523,911	\$250,663	\$128,821	\$12,297	\$3,607	\$93,758	\$34,765
	<b>Sub-total</b>		\$593,600	\$290,577	\$147,440	\$13,797	\$3,978	\$98,958	\$38,851
814	<b>Storage Operating Expenses</b>								
	Operations Supervision and Engineer Demand	7	\$115,402	\$76,435	\$36,015	\$2,952	\$0	\$0	\$0
	Commodity	2	\$351,353	\$229,100	\$112,930	\$9,323	\$0	\$0	\$0
	Maps and Records	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	816 Well Expenses	7	(\$27,306)	(\$18,086)	(\$6,522)	(\$699)	\$-0	\$-0	\$-0
	817 Lines Expenses	7	\$530,675	\$351,485	\$165,615	\$13,575	\$0	\$0	\$0
	818 Compressor Station Exp - Payroll	2	\$1,549,437	\$1,010,311	\$498,011	\$41,116	\$0	\$0	\$0
	819 Compressor Station Fuel and Power	2	\$1,064,778	\$694,289	\$342,224	\$28,255	\$0	\$0	\$0
	820 Measurement of Regulator Station	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	821 Purification of Natural Gas	2	\$1,698,551	\$1,107,541	\$545,938	\$45,072	\$0	\$0	\$0
	823 Gas losses	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	824 Other Expenses	2	\$14,187	\$9,251	\$4,560	\$376	\$0	\$0	\$0
	825 Storage Well Royalties	7	\$42,906	\$28,418	\$13,390	\$1,098	\$0	\$0	\$0
	826 Rents	7	\$43,171	\$28,594	\$13,473	\$1,104	\$0	\$0	\$0
	<b>Sub-total</b>		\$5,383,154	\$3,517,336	\$1,723,644	\$142,174	\$0	\$0	\$0
830	<b>Storage Maintenance Expenses</b>								
	Maintenance Super and Eng. Demand	7	\$116,564	\$77,204	\$36,378	\$2,982	\$0	\$0	\$0
	Commodity	2	\$208,386	\$135,978	\$66,978	\$5,530	\$0	\$0	\$0
	831 Maintenance of Structures	7	\$580,151	\$384,254	\$181,056	\$14,841	\$0	\$0	\$0
	832 Maintenance of Reservoirs	7	\$172,608	\$114,324	\$53,868	\$4,416	\$0	\$0	\$0
	833 Maintenance of Lines	7	\$927,003	\$604,453	\$297,952	\$24,599	\$0	\$0	\$0
	834 Main of Compressor Station Equipment	2	\$52,410	\$34,713	\$16,356	\$1,341	\$0	\$0	\$0
	835 Main of Meas and Reg Sta. Equip	7	\$464,091	\$302,611	\$149,165	\$12,315	\$0	\$0	\$0
	836 Main of Purification Equip	2	\$52,201	\$34,575	\$16,291	\$1,335	\$0	\$0	\$0
	837 Main of Other Equipment	7	\$2,573,414	\$1,688,012	\$818,044	\$67,358	\$0	\$0	\$0
	<b>Sub-total</b>		\$2,573,414	\$1,688,012	\$818,044	\$67,358	\$0	\$0	\$0
850-867	<b>Transmission Expense</b>								
	Transmission Expense	8	\$1,040,622	\$689,240	\$324,761	\$26,621	\$0	\$0	\$0
	<b>Sub-total</b>		\$1,040,622	\$689,240	\$324,761	\$26,621	\$0	\$0	\$0

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Expenses)

Acct No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
<b>Distribution Expense</b>									
870	Operation Supr and Engr	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
871	Dist Load Dispatching	4	\$374,650	\$179,250	\$92,120	\$8,794	\$2,579	\$67,047	\$24,860
872	Compr. Station Labor and Exp.	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
873	Compr. Station Fuel and Power	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.01	Other Mains/Serv. Expenses	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.02	Leak Survey-Mains	36	\$3,368,434	\$2,399,214	\$643,173	\$47,493	\$8,150	\$197,828	\$72,575
874.03	Leak Survey - Service	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.04	Locate Main per Request	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.05	Check Stop Box Access	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.06	Patrolling Mains	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.07	Check/Grease Valves	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.08	Op. Odor Equipment	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.09	Locate and Inspect Valve Boxes	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
874.1	Cut Grass - Right of Way	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
875	Meas and Reg Station Exp. - General	9	\$644,897	\$369,357	\$172,303	\$13,875	\$3,433	\$48,119	\$37,809
876	Meas and Reg Station Exp. - Industrial	15	\$266,889	\$202,185	\$51,668	\$3,032	\$688	\$8,641	\$495
877	Meas and Reg Station Exp. - City Gate	9	\$186,285	\$106,692	\$49,772	\$4,008	\$992	\$13,900	\$10,922
878	Meter and House Reg. Expense	15	\$93,528	\$70,853	\$18,107	\$1,062	\$304	\$3,028	\$173
879	Customer Installation Expense	15	\$406,005	\$307,574	\$78,601	\$4,612	\$1,320	\$13,145	\$753
880	Other Expenses	35	\$3,029,079	\$2,159,139	\$585,864	\$42,520	\$7,837	\$171,233	\$62,486
881	Rents	35	\$9,718	\$6,927	\$1,880	\$136	\$25	\$549	\$200
	<b>Sub-total</b>		<b>\$8,379,485</b>	<b>\$5,801,192</b>	<b>\$1,693,487</b>	<b>\$125,533</b>	<b>\$25,508</b>	<b>\$523,491</b>	<b>\$210,274</b>
<b>Distribution Maintenance Expenses</b>									
885	Maintenance Supr and Engr	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
886	Maintenance Structures	9	\$592,928	\$339,592	\$158,418	\$12,757	\$3,156	\$44,242	\$34,763
887	Maintenance Mains								
	LM Pressure								
	Demand	49	\$6,302,964	\$3,580,993	\$1,727,326	\$151,272	\$23,385	\$610,868	\$209,120
	Customer	13	\$1,096,425	\$1,002,473	\$93,071	\$775	\$7	\$100	\$0
	H Pressure								
	Customer	48	\$985,218	\$517,823	\$252,739	\$22,161	\$6,014	\$124,913	\$61,569
888	Maintenance Comp. Station Equip.	12	\$73,775	\$67,440	\$6,262	\$53	\$3	\$16	\$1
889	Maintenance Meas and Reg. General	9	\$71,202	\$40,780	\$19,024	\$1,532	\$379	\$5,313	\$4,174
890	Maintenance Meas and Reg. - Industrial	15	\$208,249	\$157,762	\$40,316	\$2,366	\$677	\$6,743	\$386
891	Maintenance Meas and Reg.-City Gate	9	\$280,673	\$160,752	\$74,990	\$6,039	\$1,494	\$20,943	\$16,455
892	Maintenance Services	14	\$1,207,872	\$1,111,661	\$94,273	\$878	\$296	\$713	\$51

Louisville Gas & Electric  
Natural Gas Cost of Service Study  
(Expenses)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)	
893	Maintenance Meters and House Reg.		\$0	\$0	\$0	\$0	\$0	\$0	\$0	
894	Maintenance Other Equipment	35	\$363,800	\$252,190	\$68,430	\$4,966	\$915	\$20,000	\$7,298	
	Sub-total		\$11,173,106	\$7,231,465	\$2,534,848	\$202,799	\$36,327	\$833,849	\$333,817	
	<b>Total O&amp;M Expense</b>		<b>\$29,143,381</b>	<b>\$19,217,822</b>	<b>\$7,242,224</b>	<b>\$578,282</b>	<b>\$65,813</b>	<b>\$1,456,298</b>	<b>\$582,942</b>	
<b>Customer Accounts Expense</b>										
901	Supervision	17	\$655,292	\$590,376	\$57,223	\$4,416	\$305	\$2,849	\$122	
902	Meter Reading	17	\$1,729,593	\$1,558,251	\$151,036	\$11,657	\$806	\$7,521	\$322	
903	Customer Records and Collection	17	\$4,346,793	\$3,916,179	\$379,582	\$29,296	\$2,025	\$18,901	\$810	
904	Uncollectible Accounts	17	\$1,517,462	\$1,367,135	\$132,512	\$10,227	\$707	\$6,598	\$283	
905	Misc. Cust Accounts Expense	17	\$270,177	\$243,412	\$23,593	\$1,821	\$126	\$1,175	\$50	
	Sub-total		\$8,519,317	\$7,675,352	\$743,946	\$57,418	\$3,969	\$37,044	\$1,588	
<b>Customer Service &amp; Information Expenses</b>										
907-910	Customer Service	18	\$4,610,603	\$4,153,854	\$402,619	\$31,074	\$2,148	\$20,048	\$859	
	Sub-total		\$4,610,603	\$4,153,854	\$402,619	\$31,074	\$2,148	\$20,048	\$859	
<b>Sales Expenses</b>										
911-916	Sales Expenses	18	\$22,308	\$20,098	\$1,948	\$150	\$10	\$97	\$4	
	Sub-total		\$22,308	\$20,098	\$1,948	\$150	\$10	\$97	\$4	
	<b>Total Customer Accounting Expenses</b>		<b>\$13,152,228</b>	<b>\$11,849,305</b>	<b>\$1,148,514</b>	<b>\$88,643</b>	<b>\$6,127</b>	<b>\$57,189</b>	<b>\$2,451</b>	
<b>Administrative &amp; General Expenses</b>										
920	Admin and General Salaries	39	\$3,325,921	\$2,345,155	\$735,282	\$58,817	\$6,089	\$130,297	\$50,280	
921	Office Supplies and Expense	39	\$1,061,002	\$748,128	\$234,562	\$18,763	\$1,942	\$41,566	\$16,040	
922	Admin. Expenses Transferred	39	(\$410,957)	(\$289,772)	(\$90,853)	(\$7,268)	(\$752)	(\$16,100)	(\$6,213)	
923	Outside Services Employed	39	\$1,214,328	\$856,240	\$268,459	\$21,475	\$2,223	\$47,573	\$18,358	
924	Property Insurance	40	\$147,521	\$103,319	\$31,388	\$2,359	\$336	\$7,412	\$2,706	
925	Injuries and Damages	39	\$467,992	\$329,988	\$103,462	\$8,276	\$857	\$18,334	\$7,075	
926	Employee Pensions and Benefits	39	\$9,307,982	\$6,563,193	\$2,057,774	\$164,607	\$17,041	\$364,651	\$140,715	
927	Franchise Requirement	40	\$524,749	\$367,519	\$111,652	\$8,390	\$1,195	\$26,365	\$9,627	
928	Regulatory Commission Fee	40	\$55,329	\$38,751	\$11,773	\$885	\$126	\$2,780	\$1,015	
929	Duplicate Charges -Credit	39	(\$1,086,388)	(\$766,028)	(\$240,175)	(\$19,212)	(\$1,989)	(\$42,561)	(\$16,424)	
930.1	General Advertising Expense	40	\$127,090	\$89,010	\$27,041	\$2,032	\$290	\$6,385	\$2,332	
930.2	Misc. General Expense	39	\$215,931	\$152,256	\$47,737	\$3,819	\$395	\$8,459	\$3,264	
931	Rents	40	\$350,181	\$245,256	\$74,509	\$5,599	\$798	\$17,594	\$6,424	
935	Maintenance of General Plant	34	\$2,562,346	\$1,805,119	\$540,533	\$40,357	\$5,721	\$125,001	\$45,615	

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Expenses)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
<b>Total</b>	<b>Administrative &amp; General</b>		<b>\$17,863,027</b>	<b>\$12,588,135</b>	<b>\$3,913,146</b>	<b>\$308,900</b>	<b>\$34,272</b>	<b>\$737,758</b>	<b>\$280,815</b>
	<b>Depreciation Expense</b>								
350-357	Underground Storage Plant	7	\$1,086,254	\$719,464	\$339,002	\$27,788	\$0	\$0	\$0
358	Asset Retire Obligations Gas Plant	7	\$13,193	\$8,738	\$4,117	\$337	\$0	\$0	\$0
	<b>Sub-total</b>		<b>\$1,099,447</b>	<b>\$728,202</b>	<b>\$343,119</b>	<b>\$28,126</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	<b>Transmission Plant</b>								
365-371	Transmission	8	\$91,870	\$60,849	\$28,671	\$2,350	\$0	\$0	\$0
	<b>Sub-total</b>		<b>\$91,870</b>	<b>\$60,849</b>	<b>\$28,671</b>	<b>\$2,350</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	<b>Distribution Plant</b>								
374	Land and Land Rights	9	\$568	\$325	\$152	\$12	\$3	\$42	\$33
375	Structures and Improvements	9	\$41,312	\$23,661	\$11,038	\$889	\$220	\$3,083	\$2,422
376	Mains								
	<b>LM Pressure</b>								
	<b>Demand</b>	49	\$4,237,842	\$2,407,706	\$1,161,380	\$101,709	\$15,723	\$410,721	\$140,604
	<b>Customer</b>	13	\$737,189	\$674,020	\$62,577	\$521	\$5	\$67	\$0
	<b>H Pressure</b>								
	<b>Demand</b>	48	\$662,418	\$348,162	\$169,931	\$14,900	\$4,043	\$83,986	\$41,396
	<b>Customer</b>	12	\$49,603	\$45,343	\$4,210	\$36	\$2	\$11	\$0
378	Meas. & Reg. Station Equip. - Gen.	9	\$238,761	\$166,747	\$63,792	\$5,137	\$1,271	\$17,815	\$13,998
379	Meas. & Reg. Station Equip. - City Gate	9	\$100,315	\$57,454	\$26,802	\$2,158	\$534	\$7,485	\$5,881
380	Services	14	\$5,770,372	\$5,310,744	\$450,369	\$4,195	\$1,414	\$3,408	\$242
381	Meters	15	\$1,202,032	\$910,614	\$232,707	\$13,655	\$3,908	\$38,919	\$2,228
382	Meter Installations	15	\$0	\$0	\$0	\$0	\$0	\$0	\$0
383	House Regulators	15	\$296,890	\$224,913	\$57,476	\$3,373	\$965	\$9,613	\$550
384	House Regulators Installations	15	\$0	\$0	\$0	\$0	\$0	\$0	\$0
385	Indust. Meas. & Reg. Station Equip.	15	\$3,086	\$2,338	\$997	\$35	\$10	\$100	\$6
387	Other Equipment	15	\$1,636	\$1,239	\$317	\$19	\$5	\$53	\$3
388	Asset Retire Obligations Gas Plant - City Gate	9	\$5	\$3	\$1	\$0	\$0	\$0	\$0
388	Asset Retire Obligations Gas Plant - Mains								
	<b>LM Pressure</b>								
	<b>Demand</b>	49	\$235	\$134	\$64	\$6	\$1	\$23	\$8
	<b>Customer</b>	13	\$41	\$37	\$3	\$0	\$0	\$0	\$0
	<b>H Pressure</b>								
	<b>Demand</b>	48	\$37	\$19	\$9	\$1	\$0	\$5	\$2

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Expenses)

Acct No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
	Customer	12	\$3	\$3	\$0	\$0	\$0	\$0	\$0
	Sub-total		\$13,342,345	\$10,143,462	\$2,241,428	\$146,645	\$28,105	\$575,330	\$207,375
	Other Plant-In-Service								
117	Gas Stored Underground/Non-Current		\$0						
301-303	Intangible Plant	34	\$0						
389-399	General Plant	34	\$352,364	\$248,233	\$74,332	\$5,550	\$787	\$17,190	\$6,273
	Common Utility Plant	34	\$5,194,996	\$3,659,766	\$1,095,897	\$81,821	\$11,600	\$253,432	\$92,481
	Sub-total		\$5,547,360	\$3,907,999	\$1,170,229	\$87,370	\$12,386	\$270,621	\$98,754
	<b>TOTAL DEPRECIATION EXPENSE</b>		<b>\$20,081,022</b>	<b>\$14,840,512</b>	<b>\$3,783,447</b>	<b>\$264,491</b>	<b>\$40,492</b>	<b>\$845,951</b>	<b>\$308,129</b>
	Regulatory Credits and Accretion								
	Regulatory Credits	34	(\$477,534)	(\$336,413)	(\$100,737)	(\$7,521)	(\$1,066)	(\$23,296)	(\$8,501)
	Accretion	34	\$464,021	\$326,893	\$97,886	\$7,308	\$1,036	\$22,637	\$8,260
	Amortization of Income Tax Credits	34	(\$153,809)	(\$108,355)	(\$32,446)	(\$2,422)	(\$343)	(\$7,503)	(\$2,738)
	Sub-total		(\$167,322)	(\$117,875)	(\$35,297)	(\$2,635)	(\$374)	(\$8,163)	(\$2,979)
	Taxes Other Than Income								
	Property Taxes	40	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Unemployment Insurance	41	\$5,819,250	\$4,128,282	\$1,234,060	\$97,949	\$11,705	\$250,813	\$96,440
	Federal Old Age & Survivor Insurance	41	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Public Service Commission Fee	40	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Miscellaneous	40	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Sub-total		\$5,819,250	\$4,128,282	\$1,234,060	\$97,949	\$11,705	\$250,813	\$96,440
	Interest Expense	40	\$10,397,327	\$7,281,979	\$2,212,270	\$166,246	\$23,685	\$522,401	\$190,746
	<b>Total Expenses</b>		<b>\$85,891,586</b>	<b>\$62,506,182</b>	<b>\$17,286,094</b>	<b>\$1,335,629</b>	<b>\$158,036</b>	<b>\$3,339,847</b>	<b>\$1,265,799</b>

Louisville Gas & Electric  
Natural Gas Cost of Service Study  
(Labor)

Acct No	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
<b>Labor Expenses</b>									
807-813	Procurement Expenses								
	Demand	6	\$56,002	\$32,074	\$14,963	\$1,205	\$298	\$4,179	\$3,283
	Commodity	1	\$421,015	\$201,433	\$103,520	\$9,882	\$2,898	\$75,344	\$27,937
	<b>Sub-total</b>		<b>\$477,017</b>	<b>\$233,508</b>	<b>\$118,483</b>	<b>\$11,087</b>	<b>\$3,197</b>	<b>\$79,523</b>	<b>\$31,220</b>
<b>Storage Expenses</b>									
814	Operations Supervision and Engineer								
	Demand	7	\$82,102	\$54,379	\$25,623	\$2,100	\$0	\$0	\$0
	Commodity	2	\$249,967	\$162,991	\$80,343	\$6,633	\$0	\$0	\$0
815	Maps and Records								
		7	\$0	\$0	\$0	\$0	\$0	\$0	\$0
816	Well Expenses								
		7	\$17,775	\$11,773	\$5,547	\$455	\$0	\$0	\$0
817	Lines Expenses								
		7	\$254,059	\$168,272	\$79,288	\$6,499	\$0	\$0	\$0
818	Compressor Station Exp - Payroll								
		2	\$337,393	\$219,997	\$108,443	\$8,953	\$0	\$0	\$0
819	Compressor Station Fuel and Power								
		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
820	Measurement and Regulator Station								
		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
821	Purification of Natural Gas								
		2	\$490,234	\$319,657	\$157,568	\$13,009	\$0	\$0	\$0
823	Gas losses								
		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
824	Other Expenses								
		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
825	Storage Well Royalties								
		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
826	Rents								
		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<b>Total Storage Operation Labor</b>		<b>\$1,431,530</b>	<b>\$937,070</b>	<b>\$456,811</b>	<b>\$37,649</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Storage Expense</b>									
<b>Maintenance</b>									
830	Maintenance Super and Eng.								
	Demand	7	\$83,326	\$55,190	\$26,005	\$2,132	\$0	\$0	\$0
	Commodity	2	\$148,966	\$97,133	\$47,880	\$3,953	\$0	\$0	\$0
831	Maintenance of Structures								
		7	\$0	\$0	\$0	\$0	\$0	\$0	\$0
832	Maintenance of Reservoirs								
		7	\$177,940	\$117,856	\$55,532	\$4,552	\$0	\$0	\$0
833	Maintenance of Lines								
		7	\$61,424	\$40,683	\$19,169	\$1,571	\$0	\$0	\$0
834	Main of Compressor Station Equipment								
		2	\$435,341	\$283,864	\$139,925	\$11,552	\$0	\$0	\$0
835	Main of Meas and Reg Sta. Equip								
		7	\$36,483	\$24,164	\$11,386	\$933	\$0	\$0	\$0
836	Main of Purification Equip								
		2	\$113,675	\$74,122	\$36,537	\$3,016	\$0	\$0	\$0

Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Labor)

Acct. No	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)	
837	Main of Other Equipment	7	\$31,252	\$20,699	\$9,753	\$799	\$0	\$0	\$0	
<b>Total Maintenance Labor</b>			\$1,088,407	\$713,712	\$346,186	\$28,509	\$0	\$0	\$0	
<b>Total Storage Labor</b>			\$2,519,937	\$1,650,781	\$802,997	\$66,158	\$0	\$0	\$0	
<b>Transmission</b>										
850-867	Transmission Expenses	8	\$448,209	\$296,865	\$139,879	\$11,466	\$0	\$0	\$0	
<b>Distribution Expenses</b>										
<b>Operation</b>										
870	Operation Supr and Engr	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
871	Dist Load Dispatching	4	\$294,287	\$140,801	\$72,360	\$6,908	\$2,026	\$52,665	\$19,528	
872	Compr. Station Labor and Exp.	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
873	Compr. Station Fuel and Power	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.01	Other Mains/Serv. Expenses	36	\$553,484	\$394,227	\$105,683	\$7,804	\$1,339	\$32,506	\$11,925	
874.02	Leak Survey-Mains	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.03	Leak Survey - Service	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.04	Locate Main per Request	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.05	Check Stop Box Access	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.06	Patrolling Mains	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.07	Check/Grease Valves	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.08	Opr. Odor Equipment	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.09	Locate and Inspect Valve Boxes	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
874.1	Cut Grass - Right of Way	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
875	Meas and Reg Station Exp.- General	9	\$386,736	\$210,045	\$97,985	\$7,891	\$1,952	\$27,364	\$21,501	
876	Meas and Reg Station Exp.- Industrial	15	\$177,634	\$134,569	\$34,389	\$2,018	\$578	\$5,751	\$329	
877	Meas and Reg Station Exp. - City Gate	9	\$21,164	\$12,121	\$5,655	\$455	\$113	\$1,579	\$1,241	
878	Meter and House Reg. Expense	15	\$7,634	\$5,783	\$1,478	\$87	\$25	\$247	\$14	
879	Customer Installation Expense	15	\$224,982	\$170,438	\$43,555	\$2,556	\$732	\$7,284	\$417	
880	Other Expenses	35	\$1,277,222	\$910,409	\$247,032	\$17,929	\$3,305	\$72,201	\$26,347	
881	Rents	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>Total Operations Distribution Labor</b>			\$2,923,145	\$1,978,392	\$608,137	\$45,646	\$10,069	\$199,598	\$81,303	
<b>Total Operations Transmission and Distribution Labor</b>			\$3,371,354	\$2,275,256	\$748,015	\$57,112	\$10,069	\$199,598	\$81,303	



Louisville Gas & Electric  
 Natural Gas Cost of Service Study  
 (Labor)

Acct No	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
<b>Maintenance Expense -- Distribution</b>									
885	Maintenance Supr and Engr	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
886	Maintenance Structures	9	\$25,478	\$14,592	\$6,807	\$548	\$136	\$1,901	\$1,494
887	Maintenance Mains								
	<b>L/M Pressure</b>								
	Demand	49	\$2,218,586	\$1,260,477	\$608,003	\$53,246	\$8,231	\$215,020	\$73,608
	Customer	13	\$385,932	\$352,862	\$32,760	\$273	\$2	\$35	\$0
	H Pressure								
	Demand	48	\$346,788	\$182,269	\$88,962	\$7,801	\$2,117	\$43,968	\$21,672
	Customer	12	\$25,968	\$23,738	\$2,204	\$19	\$1	\$6	\$0
888	Maintenance Comp. Station Equip.	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
889	Maintenance Meas and Reg. General	9	\$36,857	\$21,109	\$9,847	\$793	\$196	\$2,750	\$2,161
890	Maintenance Meas and Reg - Industrial	15	\$150,451	\$113,976	\$29,127	\$1,709	\$489	\$4,871	\$279
891	Maintenance Meas and Reg - City Gate	9	\$143,956	\$82,449	\$38,462	\$3,097	\$766	\$10,741	\$8,440
892	Maintenance Services	14	\$574,417	\$528,663	\$44,832	\$418	\$141	\$339	\$24
893	Maintenance Meters and House Reg.	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
894	Maintenance Other Equipment	35	\$154,778	\$110,326	\$29,936	\$2,173	\$400	\$8,750	\$3,193
<b>Total</b>	<b>Maintenance Labor</b>		<b>\$4,063,211</b>	<b>\$2,690,461</b>	<b>\$890,941</b>	<b>\$70,076</b>	<b>\$12,480</b>	<b>\$288,381</b>	<b>\$110,871</b>
<b>Total</b>	<b>Transmission &amp; Distribution Labor</b>		<b>\$7,434,565</b>	<b>\$4,965,718</b>	<b>\$1,638,956</b>	<b>\$127,188</b>	<b>\$22,549</b>	<b>\$487,980</b>	<b>\$192,174</b>
<b>Customer Accounts Expense</b>									
901	Supervision	17	\$471,318	\$424,627	\$41,158	\$3,177	\$220	\$2,049	\$88
902	Meter Reading	17	\$177,627	\$160,030	\$15,511	\$1,197	\$83	\$772	\$33
903	Customer Records and Collections	17	\$1,779,757	\$1,603,446	\$155,417	\$11,995	\$829	\$7,739	\$332
904	Uncollectible Accounts	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
905	Misc. Cust Account Expenses	17	\$126,229	\$113,724	\$11,023	\$851	\$59	\$549	\$24
<b>Total</b>	<b>Customer Accounts Labor</b>		<b>\$2,564,931</b>	<b>\$2,301,827</b>	<b>\$223,108</b>	<b>\$17,220</b>	<b>\$184</b>	<b>\$11,109</b>	<b>\$476</b>
<b>Customer Service Expenses</b>									
907-910	Customer Service	18	\$395,379	\$356,211	\$34,526	\$2,665	\$184	\$1,719	\$74
<b>Sales Expenses</b>									

Louisville Gas & Electric  
Natural Gas Cost of Service Study  
(Labor)

Acct No	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)	
911-916	Sales Expenses	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>Administrative &amp; General</b>										
920	Admin and General Salaries	39	\$2,577,542	\$1,817,462	\$569,833	\$45,583	\$4,719	\$100,978	\$38,967	
921	Office Supplies and Expense	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
922	Admin. Expenses Transferred	39	(\$272,690)	(\$192,278)	(\$60,285)	(\$4,822)	(\$499)	(\$10,683)	(\$4,122)	
923	Outside Services Employed	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
924	Property Insurance	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
925	Injuries and Damages	39	\$6,261	\$4,415	\$1,384	\$111	\$11	\$245	\$95	
926	Employee Pensions and Benefits	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
927	Franchise Requirement	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
928	Regulatory Commission Fee	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
929	Duplicate Charges -Credit	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
930.1	General Advertising Expense	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
930.2	Misc. General Expense	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
931	Rents	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
935	Maintenance of General Plant	34	\$968,557	\$682,328	\$204,319	\$15,255	\$2,163	\$47,250	\$17,242	
<b>Total</b>	<b>Administrative and General Labor</b>		<b>\$3,279,670</b>	<b>\$2,311,927</b>	<b>\$715,252</b>	<b>\$56,126</b>	<b>\$6,394</b>	<b>\$137,790</b>	<b>\$52,181</b>	
<b>Total</b>	<b>Labor Expense</b>		<b>\$16,661,499</b>	<b>\$11,819,972</b>	<b>\$3,533,323</b>	<b>\$280,444</b>	<b>\$33,514</b>	<b>\$718,121</b>	<b>\$276,125</b>	

Louisville Gas & Electric  
Natural Gas Cost of Service Study  
(Revenues)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
<b>Operating Revenues</b>									
	Sales and Transportation Interdepartmental Sales	28	\$408,703,213	\$266,836,228	\$123,545,049	\$10,222,598	\$2,791,492	\$3,961,597	\$1,347,249
	Forfeited Discounts	28	\$6,531,020	\$4,263,990	\$1,974,233	\$163,356	\$44,608	\$63,306	\$21,529
	Miscellaneous Revenue	31	\$3,212,301	\$2,605,350	\$555,512	\$38,246	\$0	\$13,193	\$0
			\$443,726	\$28,485	\$332,902	\$0	\$744	\$81,595	\$0
	<b>Total Operating Revenues</b>		\$418,890,260	\$273,733,052	\$126,407,695	\$10,424,199	\$2,836,844	\$4,119,691	\$1,368,778
<b>Pro-Forma Adjustments to Revenues</b>									
	VDI Amortization and Surcredit	30	(\$323)	(\$224)	(\$77)	(\$5)	(\$1)	(\$12)	(\$4)
	Adjust Base Rates to reflect full year of FAC Roll-in	32	\$9,941,202	\$7,856,572	\$1,939,946	\$78,152	\$6,208	\$54,562	\$5,762
	Elimination of ECR, MSR, DSM, FAC, and GSC accruals	28	\$2,228,479	\$1,454,935	\$673,637	\$55,739	\$15,221	\$21,601	\$7,346
	Temperature Normalization	Dir	(\$248,948)	(\$190,208)	(\$16,121)	(\$18,867)	(\$1,739)	(\$13,063)	(\$8,950)
	Year-End Customer Adjustment	Dir	\$1,760,940	\$259,367	\$1,404,610	\$96,963	\$0	\$0	\$0
	Rate Switching	Dir	\$22,135	\$0	\$0	(\$22,236)	\$0	\$44,371	\$0
	Adjustment to eliminate gas supply cost recoveries	33	(\$322,476,565)	(\$206,301,504)	(\$103,957,947)	(\$8,992,672)	(\$2,711,423)	(\$445,190)	(\$67,829)
	Adjustment to eliminate unbilled revenues	28	\$11,377,000	\$7,427,846	\$3,439,102	\$284,565	\$77,706	\$110,278	\$37,503
	Removal of DSM Revenues	Dir	(\$2,319,554)	(\$2,207,347)	(\$104,277)	\$0	(\$899)	(\$7,031)	\$0
	<b>Total Revenue Adjustments</b>		(\$299,715,634)	(\$191,700,564)	(\$96,621,128)	(\$8,518,361)	(\$2,614,927)	(\$234,483)	(\$26,172)
	<b>Total Adjusted Revenue</b>		\$119,174,626	\$82,032,489	\$29,786,568	\$1,905,838	\$221,917	\$3,885,208	\$1,342,605

Louisville Gas and Electric  
 Natural Gas Class Cost of Service Study  
 (Allocation Amounts)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
1	Procurement Expenses	COM01	42,412,266	20,292,002	10,428,447	995,514	291,983	7,590,002	2,814,318
2	Storage	COM02	23,642,092	15,415,833	7,598,896	627,363	0	0	0
3	Transmission	COM03	23,642,092	15,415,833	7,598,896	627,363	0	0	0
4	Distribution	COM04	42,412,266	20,292,002	10,428,447	995,514	291,983	7,590,002	2,814,318
5	Adjusted Deliveries		42,977,597	20,304,230	11,007,576	1,043,051	288,669	7,559,624	2,774,447
6	Procurement Expenses	DEM01	516,420	295,773	137,977	11,111	2,749	38,533	30,277
7	Storage	DEM02	12,289,964	8,140,074	3,835,494	314,396	0	0	0
8	Transmission	DEM03	12,289,964	8,140,074	3,835,494	314,396	0	0	0
9	Distribution Structures	DEM04	516,420	295,773	137,977	11,111	2,749	38,533	30,277
10	High Pressure Distribution Mains	DEM05	516,420	295,773	137,977	11,111	2,749	38,533	30,277
11	Low/Medium Pressure Distribution Mains	DEM05a	449,611	295,773	135,880	11,028	241	6,689	0
12	High Pressure Distrib Mains (Yr-end cust.)	CUST01	318,528	291,175	27,035	225	15	70	3
13	Low/Med Pres. Distrib Mains (Yr-end cust.)	CUST01a	318,464	291,175	27,033	225	2	29	0
14	Services	CUST02	154,617,164	142,301,428	12,067,653	112,407	37,881	91,317	6,478
15	Meters	CUST03	45,693,971	34,616,028	8,846,128	519,081	148,573	1,479,448	84,713
16	Customer Count (Average)		315,940	290,075	25,560	217	15	70	3
17	Customer Accounts	CUST04	321,971	290,075	28,116	2,170	150	1,400	60
18	Customer Service	CUST05	321,971	290,075	28,116	2,170	150	1,400	60
19	Forfeited Discounts	REVFD	3,212,302	2,605,350	555,513	38,246	0	13,193	0
20	Net Income Before Income Tax	NIBIT	30,946,494	18,828,941	11,053,734	444,893	36,956	517,237	64,732
21	Interest Expense	INT	10,397,327	7,281,979	2,212,270	165,246	23,685	522,401	190,746
22	Interest Adjustment		0	0	0	0	0	0	0
23	Taxable Income	TXINC	20,549,167	11,546,963	8,841,465	278,647	13,271	(5,164)	(126,014)
24	Total Distribution Expense	DISTR	19,552,591	13,032,657	4,228,335	328,332	61,835	1,357,340	544,091
25	Meter Cost		1,000,000	0.772847	0.180153	0.010163	0.003431	0.031572	0.001834
26	Number of Customers		318,528	291,175	27,035	230	15	70	3
27	Services Cost		1.00	0.92	0.08	0.00	0.00	0.00	0.00
28	Actual Revenue	REV01	421,091,066	274,923,042	127,289,717	10,532,446	2,876,103	4,081,674	1,388,084
29	Actual Net Revenue	REVUC	102,114,452	70,860,600	24,460,062	1,637,375	194,108	3,641,316	1,320,991
30	DSM Allocation	REVAJ04	2,356,128	2,242,152	105,921	0	913	7,142	0
31	Miscellaneous Revenue Allocation	REVMISC	544,576	34,959	408,564	0	913	100,140	0
32	Rev. Adj. Reflective Base Rates for Full Year	REVADJ1	9,941,202	7,856,572	1,939,946	78,152	6,208	54,562	5,762
33	GSC Revenue	REVGSC	318,976,614	204,062,442	102,829,655	8,895,071	2,681,995	440,358	67,093
34	PTD Plant		562,071,796	395,967,818	118,570,381	8,852,583	1,255,022	27,419,993	10,006,000
35	Dist Plant		485,054,347	345,748,568	93,815,905	6,808,859	1,255,022	27,419,993	10,006,000
36	Mains + Services		422,052,652	300,612,917	80,587,292	5,950,703	1,021,162	24,787,158	9,093,421
37	Depreciation Reserve		251,930,196	177,049,236	54,602,813	4,108,268	524,639	11,462,418	4,182,822
38	O&M Expense		29,143,381	19,217,822	7,242,224	578,282	65,813	1,456,298	582,942
39	Labor Excl. A&G		14,813,359	10,445,114	3,274,883	261,967	27,120	580,331	223,944
40	PTD Plant + CWIP		657,418,625	460,436,456	139,880,886	10,511,650	1,497,619	33,031,226	12,060,788
41	Total Labor		16,661,499	11,819,972	3,533,323	280,444	33,514	718,121	276,125
42	Depreciation Expenses		20,081,022	14,840,512	3,783,447	264,491	40,492	845,951	306,129

Louisville Gas and Electric  
 Natural Gas Class Cost of Service Study  
 (Allocation Amounts)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
43	Rate Base		491,799,638	340,882,709	110,881,594	8,483,064	1,011,024	22,361,054	8,180,194
44	Year-End Customer Adjustment	RBT	1,760,940	259,367	1,404,610	96,963	0	0	0
45	Mains	REVADJ2	283,965,931	173,525,231	69,809,816	5,850,314	987,331	24,705,604	0
46	Pro Forma Adjustments	PROFO	(300,541,676)	(193,041,406)	(96,173,618)	(8,480,781)	(2,614,506)	(214,798)	9,087,635
47	DSM Revenue		2,319,554	2,207,347	104,277	0	899	7,031	(16,567)
48	Peak & Avg High Pressure		100.00%	52.56%	25.65%	2.25%	0.61%	12.68%	0
49	Peak & Avg Low Pressure		100.00%	56.81%	27.40%	2.40%	0.37%	9.69%	3.32%

Louisville Gas and Electric  
 Natural Gas Class Cost of Service Study  
 (Allocation Amounts)

Schedule GAW-S  
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Acct No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
1	Procurement Expenses	COM01	42,412,266	20,292,002	10,428,447	996,514	291,983	7,590,002	2,814,318
2	Storage	COM02	23,642,092	15,415,833	7,598,896	627,363	0	0	0
3	Transmission	COM03	23,642,092	15,415,833	7,598,896	627,363	0	0	0
4	Distribution	COM04	42,412,266	20,292,002	10,428,447	996,514	291,983	7,590,002	2,814,318
5	Adjusted Deliveries		42,977,597	20,304,230	11,007,576	1,043,051	288,669	7,559,624	2,774,447
6	Procurement Expenses	DEM01	516,420	296,773	137,977	11,111	2,749	38,533	30,277
7	Storage	DEM02	12,289,964	8,140,074	3,835,494	314,396	0	0	0
8	Transmission	DEM03	12,289,964	8,140,074	3,835,494	314,396	0	0	0
9	Distribution Structures	DEM04	516,420	296,773	137,977	11,111	2,749	38,533	30,277
10	High Pressure Distribution Mains	DEM05	516,420	296,773	137,977	11,111	2,749	38,533	30,277
11	Low/Medium Pressure Distribution Mains	DEM05a	449,611	296,773	135,880	11,028	241	6,689	0
12	High Pressure Distrib Mains (yr-end cust.)	CUST01	318,528	291,175	27,035	230	15	70	3
13	Low/Med Pres. Distrib Mains (yr-end cust.)	CUST01a	318,528	291,175	27,035	230	15	70	3
14	Services	CUST01a	154,617,164	142,301,428	12,067,653	112,407	37,881	91,317	6,478
15	Meters	CUST02	45,693,971	34,616,028	8,846,128	519,081	148,573	1,479,448	84,713
16	Customer Count (Average)	CUST03	315,940	290,075	25,560	217	15	70	3
17	Customer Accounts	CUST04	321,971	290,075	28,116	2,170	150	1,400	60
18	Customer Service	CUST05	321,971	290,075	28,116	2,170	150	1,400	60
19	Forfeited Discounts	REVFD	3,212,302	2,605,350	555,513	38,246	0	13,193	0
20	Net Income Before Income Tax	NIBIT	30,946,494	18,828,941	11,053,734	444,893	36,956	517,237	64,732
21	Interest Expense	INT	10,397,327	7,281,979	2,212,270	166,246	23,685	522,401	190,746
22	Interest Adjustment		0	0	0	0	0	0	0
23	Taxable Income	TXINC	20,549,167	11,546,963	8,841,465	278,647	13,271	(5,164)	(126,014)
24	Total Distribution Expense	DISTR	19,552,591	13,032,657	4,228,335	328,332	61,835	1,357,340	544,091
25	Meter Cost		1,000,000	0,772,847	0,180,153	0,010,163	0,003,431	0,031,572	0,001,834
26	Number of Customers		318,528	291,175	27,035	230	15	70	3
27	Services Cost		1,000,000	0,772,847	0,180,153	0,010,163	0,003,431	0,031,572	0,001,834
28	Actual Revenue	REV01	421,091,066	274,923,042	127,289,717	10,532,446	0,000	4,081,674	1,388,084
29	Actual Net Revenue	REVUC	102,114,452	70,860,600	24,460,062	1,637,375	194,108	3,641,316	1,320,991
30	DSM Allocation	REVADJ4	2,356,128	2,242,152	105,921	0	913	7,142	0
31	Miscellaneous Revenue Allocation	REVMISC	544,576	34,959	408,564	0	913	100,140	0
32	Rev. Adj. Reflective Base Rates for Full Year	REVADJ1	9,941,202	7,886,572	1,939,946	78,152	6,208	54,562	5,762
33	GSC Revenue	REVGSC	318,976,614	204,062,442	102,829,655	8,895,071	2,681,995	440,358	67,093
34	PTD Plant		562,071,796	395,967,818	118,570,381	8,852,553	1,255,022	27,419,993	10,006,000
35	Dist Plant		485,054,347	345,748,568	93,815,905	6,808,859	1,255,022	27,419,993	10,006,000
36	Mains + Services		422,052,652	300,612,917	80,587,292	5,950,703	1,021,162	24,787,158	9,093,421
37	Depreciation Reserve		251,930,196	177,049,236	54,602,813	4,108,268	524,639	11,462,418	4,182,822
38	O&M Expense		29,143,381	19,217,822	7,242,224	578,282	65,813	1,456,298	582,942
39	Labor Excl. A&G		14,813,359	10,445,114	3,274,863	261,967	27,120	580,331	223,944
40	PTD Plant + CWIP		657,418,625	460,436,456	139,880,866	10,511,650	1,497,619	33,031,226	12,060,788
41	Total Labor		16,661,499	11,819,972	3,533,323	280,444	33,514	718,121	276,125
42	Depreciation Expenses		20,081,022	14,840,512	3,783,447	264,491	40,492	845,951	306,129
43	Rate Base	RBT	491,799,636	340,882,709	110,881,594	8,483,064	1,011,024	22,361,054	8,180,194

Louisville Gas and Electric  
 Natural Gas Class Cost of Service Study  
 (Allocation Amounts)

Acct. No.	Account Description	Allocator	Total	Residential (RGS)	Commercial (CGS)	Industrial (IGS)	As Available Gas Service (AAGS)	Firm Transportation Service (FT)	Special Contracts (SP)
44	Year-End Customer Adjustment	REVADJ2	1,760,940	259,367	1,404,610	96,963	0	0	0
45	Mains		283,965,931	173,525,231	69,809,816	5,850,314	987,331	24,705,604	9,087,635
46	Pro Forma Adjustments	PROFO	(300,541,676)	(193,041,406)	(96,173,618)	(8,480,781)	(2,614,506)	(214,798)	(16,567)
47	DSM Revenue		2,319,554	2,207,347	104,277	0	899	7,031	0
48	Peak & Avg High Pressure		100.00%	52.56%	25.65%	2.25%	0.61%	12.68%	6.25%
49	Peak & Avg Low Pressure		100.00%	56.81%	27.40%	2.40%	0.37%	9.69%	3.32%

Value Line Natural Gas Utilities  
Rates of Return on Common Equity  
(1999-2009)

Schedule GAW-6

Company	Year											
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	All Years
AGL Resources	7.9%	11.5%	12.3%	14.5%	14.0%	11.0%	12.9%	13.2%	12.7%	12.6%	14.5%	
Atrnos Energy Corp.	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	9.8%	8.7%	8.8%	8.3%	
Ladede Group	9.5%	9.1%	10.5%	7.8%	11.6%	10.1%	10.9%	12.5%	11.6%	11.8%	12.4%	
New Jersey Resources	14.8%	14.6%	14.9%	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	15.7%	14.6%	
Nicor, Inc.	15.4%	19.2%	18.7%	17.5%	12.3%	13.1%	12.5%	14.7%	14.3%	12.3%	13.1%	
Northwest Natural Gas	9.9%	10.0%	10.2%	8.5%	9.0%	8.9%	9.9%	10.9%	12.5%	10.9%	11.1%	
Piedmont Natural Gas	11.8%	12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	12.4%	13.2%	
South Jersey Industries	14.6%	14.8%	12.8%	12.5%	11.6%	12.5%	12.4%	16.3%	12.8%	13.1%	13.1%	
Southwest Gas	7.8%	7.2%	6.6%	6.5%	6.1%	8.3%	6.4%	8.9%	8.5%	5.9%	7.9%	
UGI Corp.	17.2%	17.6%	22.5%	23.8%	17.6%	14.1%	18.2%	16.0%	14.5%	15.2%	16.2%	
WGL Holdings	9.9%	11.7%	11.2%	7.2%	14.0%	11.7%	12.0%	10.3%	10.4%	11.6%	11.6%	
<b>AVERAGE</b>	<b>11.4%</b>	<b>12.4%</b>	<b>12.8%</b>	<b>12.3%</b>	<b>12.1%</b>	<b>11.2%</b>	<b>12.0%</b>	<b>12.4%</b>	<b>11.6%</b>	<b>11.8%</b>	<b>12.4%</b>	<b>12.0%</b>
<b>STANDARD DEVIATION</b>												<b>0.47%</b>

Source: Value Line Investment Survey, March 12, 2010.



## Comparison of Value Line Electric Rates of Return, 2000-2009

Company	Location	Own Gen?	Pct Elec Rev 1/	Rate of Return on Common Equity										
				2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Allegheny Energy	East	NO	100%	13.4%	16.6%	-26.3%	-22.1%	5.0%	8.8%	15.3%	16.3%	13.9%	12.6%	5.3%
Gen. Vermont Pub. Serv.	East	YES	100%	6.9%	5.8%	9.3%	8.1%	6.8%	0.5%	10.1%	8.2%	7.3%	7.5%	7.1%
CH Energy Group	East	YES	58%	10.6%	10.2%	7.1%	9.1%	8.6%	8.8%	7.9%	8.1%	6.7%	8.1%	8.5%
Consol. Edison	East	NO	64%	10.7%	12.0%	11.3%	9.8%	7.8%	9.7%	9.2%	10.4%	9.5%	8.5%	9.9%
Constellation Energy	East	YES	18%	11.0%	9.2%	9.3%	11.1%	11.7%	12.3%	14.8%	14.7%	2.7%	3.0%	10.0%
Dominion Resources	East	YES	43%	8.0%	9.0%	13.3%	11.8%	12.3%	9.9%	13.1%	14.9%	17.5%	15.5%	12.5%
Duke Energy	East	YES	79%							4.1%	7.2%	6.1%	6.7%	6.0%
Exelon Corp.	East	YES	55%	7.8%	17.2%	20.1%	18.8%	19.5%	23.6%	23.7%	26.9%	24.6%	22.5%	20.5%
FirstEnergy Corp.	East	YES	100%	12.9%	8.9%	10.5%	5.4%	10.6%	10.2%	13.9%	14.6%	16.2%	11.9%	11.5%
FPL Group	East	YES	100%	12.6%	13.0%	10.9%	12.5%	11.8%	10.6%	12.9%	12.2%	14.0%	12.4%	12.3%
Northeast Utilities	East	NO	80%	-1.3%	8.5%	6.3%	6.9%	5.1%	5.1%	4.3%	8.4%	9.6%	9.0%	6.2%
NSTAR	East	NO	84%	13.0%	13.7%	13.8%	13.7%	13.1%	12.8%	13.1%	13.0%	13.3%	13.0%	13.3%
Pepeco Holdings	East	YES	51%	9.8%	12.6%	9.2%	7.7%	7.7%	7.7%	7.0%	7.4%	9.5%	5.0%	8.4%
PPL Corp.	East	YES	100%	23.6%	28.2%	21.1%	19.6%	16.3%	16.7%	17.3%	18.2%	18.2%	8.1%	18.7%
Progress Energy	East	YES	100%	6.7%	11.5%	12.1%	10.9%	9.9%	9.0%	6.1%	8.2%	8.9%	9.0%	9.2%
Public Serv. Enterprise	East	NO	66%	19.1%	18.6%	19.7%	15.4%	12.6%	14.2%	13.8%	18.1%	19.0%	18.0%	16.9%
SCANA Corp.	East	YES	51%	10.9%	10.2%	11.6%	12.1%	12.2%	11.8%	10.5%	10.8%	11.4%	10.2%	11.2%
Southern Co.	East	YES	100%	12.3%	14.0%	15.1%	14.8%	14.9%	14.9%	13.8%	14.0%	13.1%	12.5%	13.9%
TECO Energy	East	YES	66%	16.7%	15.4%	9.9%	-0.9%	10.7%	13.3%	14.1%	13.2%	8.1%	10.3%	11.1%
UIL Holdings	East	NO	100%	12.5%	11.9%	9.1%	6.0%	6.7%	5.8%	9.9%	10.1%	10.1%	9.5%	9.2%
Alliant	Central	YES	91%					6.1%	11.3%	11.6%	11.8%	10.0%	6.6%	9.6%
Alliant Energy	Central	YES	72%	9.6%	9.8%	5.8%	6.7%	8.2%	13.1%	9.1%	11.3%	9.3%	6.8%	9.0%
Amer. Electric Power	Central	NO	100%	3.7%	12.8%	13.7%	12.4%	12.2%	11.3%	12.0%	11.4%	11.3%	10.4%	11.1%
Ameren Corp.	Central	YES	83%	14.3%	14.0%	9.9%	11.6%	9.1%	9.7%	8.1%	9.2%	8.7%	7.8%	10.2%
CenterPoint Energy	Central	NO	21%		6.6%	27.2%	23.8%	18.6%	17.4%	27.8%	22.0%	21.9%	14.1%	19.9%
Deco Corp.	Central	YES	100%	14.9%	14.6%	13.1%	12.5%	11.9%	10.7%	8.3%	7.8%	9.6%	9.5%	11.3%
CMS Energy Corp.	Central	YES	55%	12.1%	8.8%	-38.0%	-2.9%	6.2%	9.9%	6.4%	7.2%	11.7%	8.5%	3.0%
DPL Inc.	Central	NO	100%	22.9%	27.8%	10.8%	14.6%	20.7%	11.9%	17.5%	24.2%	25.0%	20.7%	19.6%
DTE Energy	Central	YES	59%	11.7%	7.2%	13.8%	9.1%	8.0%	10.0%	7.5%	7.7%	7.4%	8.4%	9.1%
Empire Dist. Elec.	Central	YES	87%	9.8%	3.9%	7.8%	7.8%	5.8%	6.0%	8.5%	6.2%	7.5%	6.9%	7.0%
Entergy Corp.	Central	YES	73%	9.7%	9.3%	10.9%	9.8%	11.0%	11.9%	13.8%	14.4%	15.3%	14.3%	12.0%
Great Plains Energy	Central	YES	100%	13.8%	12.6%	13.6%	16.4%	15.5%	13.3%	9.4%	10.1%	4.6%	4.8%	11.4%
Integrus Energy	Central	YES	17%	11.9%	10.8%	11.7%	9.1%	14.0%	11.8%	9.7%	5.5%	3.9%	6.1%	9.5%
ITC Holdings	Central	NO	100%					1.3%	13.2%	6.2%	13.0%	11.8%	12.9%	9.7%
MGE Energy	Central	YES	62%	13.7%	12.6%	12.8%	11.6%	10.0%	9.3%	11.3%	11.4%	11.0%	10.2%	11.4%
NISource Inc.	Central	YES	18%	5.5%	6.8%	9.7%	9.4%	9.0%	6.0%	6.3%	6.1%	7.8%	5.0%	7.2%
OGE Energy	Central	YES	100%	13.8%	9.7%	11.4%	11.8%	12.3%	12.1%	14.1%	14.5%	12.2%	12.7%	12.5%
Otter Trail Corp	Central	NO	100%	14.8%	14.9%	14.5%	11.7%	9.1%	11.2%	10.2%	10.2%	5.1%	3.8%	10.6%
Vectren Corp.	Central	NO	25%	9.7%	8.5%	13.1%	10.4%	9.9%	12.0%	9.3%	11.6%	9.5%	10.5%	10.5%
Westar Energy	Central	YES	100%	3.2%	-2.2%	7.3%	10.3%	7.1%	9.5%	10.7%	9.2%	6.2%	6.2%	6.7%
Wisconsin Energy	Central	YES	66%	6.5%	10.6%	12.6%	11.4%	8.8%	11.3%	10.8%	10.9%	10.7%	10.6%	10.4%
Avista	West	YES	56%	11.1%	7.9%	4.5%	6.6%	4.7%	5.9%	8.0%	4.2%	7.4%	8.0%	6.8%
Black Hills	West	YES	41%	19.0%	17.2%	11.9%	8.1%	7.8%	9.5%	9.4%	10.3%	0.7%	6.5%	10.0%
Edison International	West	YES	100%		13.6%	11.9%	13.6%	3.5%	16.7%	14.0%	13.0%	12.8%	10.5%	12.2%
El Paso Electric	West	YES	100%	14.6%	14.6%	6.3%	6.3%	6.3%	6.6%	10.6%	11.2%	11.2%	9.0%	9.7%
Hawaiian Electric	West	YES	100%	9.8%	11.6%	11.3%	10.8%	8.9%	9.7%	9.9%	7.2%	6.5%	6.0%	9.2%
IDACORP	West	YES	100%	16.0%	14.4%	7.0%	4.2%	7.2%	6.2%	8.9%	6.8%	7.6%	8.0%	8.6%
MDU Resources	West	NO	5%	12.4%	13.3%	10.1%	12.6%	12.6%	14.5%	14.7%	12.8%	13.7%	10.1%	12.7%
NV Energy Inc.	West	YES	94%	-3.6%	1.8%	-23.1%	-9.4%	4.8%	4.0%	9.0%	6.6%	6.7%	6.0%	0.3%
PG&E Corp	West	YES	77%		22.9%	-24.9%	18.5%	10.3%	12.3%	12.7%	11.8%	12.6%	11.5%	9.7%
Pinnacle West Capital	West	YES	100%	11.9%	12.5%	8.0%	8.1%	8.0%	6.5%	9.2%	8.5%	6.2%	7.5%	8.6%
PNM Resources	West	YES	100%	10.0%	15.4%	6.5%	6.3%	8.0%	8.2%	7.2%	3.5%	0.5%	4.5%	7.0%
Portland General	West	YES	100%					7.2%	5.3%	5.8%	11.0%	6.4%	6.5%	7.0%
Puget Energy Inc.	West	YES	100%	13.0%	7.7%	7.2%	7.0%	8.1%	7.2%	7.9%	7.3%			8.2%
Sempra Energy	West	NO	60%	17.2%	19.4%	20.4%	16.6%	18.9%	14.4%	14.8%	13.5%	14.0%	13.5%	16.3%
UniSource Energy	West	YES	84%	7.1%	14.3%	7.6%	8.4%	7.9%	7.5%	10.6%	8.5%	2.1%	12.5%	8.7%
Xcel Energy Inc.	West	YES	80%	9.7%	12.6%	3.7%	9.8%	10.0%	9.2%	9.7%	9.1%	9.2%	9.5%	9.3%
<b>Average</b>			<b>76%</b>	<b>11.3%</b>	<b>12.2%</b>	<b>8.4%</b>	<b>9.5%</b>	<b>9.9%</b>	<b>10.4%</b>	<b>11.0%</b>	<b>11.2%</b>	<b>10.3%</b>	<b>9.6%</b>	<b>10.3%</b>

Source: Value Line Investment Analyzer, April 12, 2010 except where otherwise noted.

1/ Source: February 2010 AUS Monthly Utility Reports

## Competitive Fixed Period Electric Residential Rates in Texas 1/

Company	Customer Charge		Average Cents/kWh Charge
1 Amigo Energy	\$6.95	2a/	10.58
2 Texas Power	\$10.00	2b/	10.28
3 Champion Energy Services	\$4.95		10.07
4 Gexa Energy	\$4.79		10.43
5 Cirro Energy	\$9.89		10.43
6 Kinetic Energy	\$7.54		10.32
7 Simple Power	\$0.00		10.30
8 Ambit Energy	\$9.99	2b/	10.75
9 StarTex Power	\$4.99	2a/	10.47
10 YEP	\$7.95	2b/	10.25
11 Brilliant Energy	\$2.15		10.70
12 Southwest Power & Light	\$7.95	2b/	10.28
13 Dynowatt	\$6.95	2b/	10.18
14 APNA Energy	\$6.95		10.95
15 Gateway Power Services	\$11.69		11.47
16 MX Energy	\$9.90		11.77
17 Mega Energy	\$0.00		9.85
18 Stream Energy	\$0.00		11.27
19 Texpo Energy	\$7.95	2b/	12.97
20 Spark Energy	\$0.00		10.22
21 TXU Energy	\$5.95		12.02
22 Reliant Energy	\$5.00		10.70
23 CPL Retail Energy	\$4.95		12.90
24 WTU Energy	\$4.95		10.40
25 Direct Energy	\$5.00		11.33
26 Potentia	\$4.88		10.05
27 Tara	\$6.95	2a/	10.98
28 Abacus Resources	\$5.95	2a/	10.30
29 Bounce	\$4.95	2a/	10.40
30 Frontier	\$4.95		11.75

**Customer Charges:**

No Customer Charge	4
Waivable Customer Charge	11
Traditional Customer Charge	15
<b>Total</b>	<b>30</b>

Avg. Non-Waivable Customer Charge: \$6.24

1/ "Fixed Period" means customer enters a contract to not switch provider for at least a predetermined time period, in this case 12 months.

2a/ Customer charge is waived with a minimum usage of 500kWh.

2b/ Customer charge is waived with a minimum usage of 1000 kWh.

Louisville Gas & Electric  
Residential Electric Customer Costs

	Residential Amount
<b>Rate Base:</b>	
Gross Plant	
Services	22,105,235
Meters	<u>30,569,462</u>
Total	52,674,697
Depreciation Reserve	
Services	(17,148,245)
Meters	<u>(20,236,781)</u>
Total	(37,385,026)
Net Rate Base	15,289,671
<b>Operation &amp; Maintenance Expenses</b>	
Meter Operations	5,058,958
Meter Maint.	0
Meter Reading	1,673,264
Records & Collections	4,206,469
Misc. Customer Accts.	<u>300,266</u>
Total	11,238,958
<b>Depreciation Expense</b>	
Services	977,051
Meters	<u>1,158,583</u>
Total	2,135,634
<b>Revenue Requirement:</b>	
Interest	325,220
Equity Return	823,502
Income Tax @ effective rate	<u>487,628</u>
Revenue for Return	1,636,349
Total Customer Revenue Requirement	15,010,940
Number of Bills	4,194,552
Monthly Cost	\$3.58

	Pct	Cost	Weighted Cost
LT- Debt	46.14%	0.0461	2.13%
Equity	<u>53.86%</u>	10.00%	<u>5.39%</u>
Total	100.00%		7.51%

Louisville Gas & Electric  
Residential Gas Customer Charge

**Schedule GAW-10**

	Residential Amount
<b>Rate Base:</b>	
Gross Plant	
Services	127,087,686
Meters	26,447,911
House Regulators	<u>10,493,951</u>
Total	164,029,548
 Depreciation Reserve	
Services	(58,409,592)
Meters	(3,413,716)
House Regulators	<u>(1,231,021)</u>
Total	(63,054,328)
<hr/>	
Net Rate Base	100,975,219
Operation & Maintenance Expenses	
Meter & House Regulators Expense	70,853
Customer Installations	307,574
Maint. Services	1,111,661
Maint. Meters & House Regulators	0
Meter Reading	1,558,251
Cust. Records & Collections	3,916,179
Misc. Cust Accounts	<u>243,412</u>
Total	7,207,930
 Depreciation Expense	
Services	4,575,157
Meters	1,055,272
House Regulators	<u>232,966</u>
Total	5,863,394
 Revenue Requirement	
Interest	2,147,797
Equity Return	5,438,525
Income Tax @ effective rate	<u>3,220,365</u>
Revenue for Return	10,806,688
<hr/>	
Total Customer Revenue Requirement	23,878,012
 Number of Bills	3,480,900
 Monthly Cost	\$6.86

	Pct	Cost	Weighted Cost
LT- Debt	46.14%	0.0461	2.13%
Equirty	53.86%	10.00%	5.39%
Total	100.00%		7.51%