

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**AN ADJUSTMENT OF THE
RATES
OF DELTA
NATURAL GAS COMPANY, INC.**

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CASE NO: 2004-00067

**DIRECT TESTIMONY OF
WILLIAM STEVEN SEELYE**

**PRINCIPAL & SENIOR CONSULTANT
THE PRIME GROUP, LLC**

Filed: April 5, 2004

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

2 A. My name is William Steven Seelye and my business address is The Prime Group, LLC,
3 6435 West Highway 146, Crestwood, Kentucky, 40014.

4 **Q. By whom are you employed?**

5 A. I am a senior consultant and principal for The Prime Group, LLC, a firm located in
6 Crestwood, Kentucky, providing consulting and educational services in the areas of
7 utility marketing, regulatory analysis, cost of service, rate design and fuel and power
8 procurement.

9 **Q. What is the purpose of your testimony in this proceeding?**

10 A. The purpose of my testimony is to sponsor the fully allocated class cost of service study
11 based on Delta Natural Gas Company Inc.'s ("Delta's") embedded costs for the 12
12 months ended December 31, 2003; to sponsor the temperature normalization adjustment;
13 to sponsor Delta's depreciation study supporting the proposed depreciation rates and the
14 pro-forma adjustment to depreciation expenses; to describe the proposed allocation of the
15 revenue increase; and to sponsor Delta's proposed rates for natural gas service.

16 **Q. Please summarize your testimony.**

17 A. The Prime Group prepared a fully allocated, embedded cost of service study for Delta's
18 test-year operations using a cost of service methodology that has been accepted by the
19 Commission in previous rate cases. The purpose of the cost of service study is to
20 determine the contribution that each customer class is making towards Delta's overall
21 rate of return. Rates of return are computed for each rate class. Delta was guided by the
22 embedded cost of service study in allocating the proposed revenue increase to the classes

1 of service. Delta is also proposing to make a temperature normalization adjustment to
2 sales and transportation volumes not covered by the Company's Weather Normalization
3 Adjustment ("WNA") clause. In addition, Delta is proposing new, generally lower
4 depreciation rates supported by a depreciation study included as an exhibit to my
5 testimony.

6 **Q. How is your testimony organized?**

7 A. My testimony is divided into the following sections: (I) Qualifications, (II) Cost of
8 Service Study, (III) Temperature Normalization Adjustment, (IV) Depreciation Study and
9 Depreciation Expense Adjustment, (V) Number of Customers Served at the End of the
10 Teat Year, and (VI) Allocation of the Rate Increase and Rate Design.

11
12 **I. QUALIFICATIONS**

13 **Q. Please describe your educational background and prior work experience.**

14 A. I received a Bachelor of Science degree in Mathematics from the University of Louisville
15 in 1979. I have also completed 54 hours of graduate level course work in Industrial
16 Engineering and Physics. From May 1979 until July 1996, I was employed by Louisville
17 Gas and Electric Company ("LG&E"). From May 1979 until December, 1990, I held
18 various positions within the Rate Department of LG&E. In December 1990, I became
19 Manager of Rates and Regulatory Analysis. In May 1994, I was given additional
20 responsibilities in the marketing area and was promoted to Manager of Market
21 Management and Rates. I left LG&E in July 1996 to form The Prime Group, LLC, with
22 two other former employees of LG&E.

1 Since leaving LG&E, I have provided consulting services to numerous investor-
2 owned utilities, rural electric cooperatives, and municipal utilities regarding utility rate
3 and regulatory filings, cost of service and wholesale and retail rate designs. Specifically,
4 I have prepared and filed Order No. 888 and Order No. 889 compliance filings at the
5 Federal Energy Regulatory Commission (“FERC”) for a number of electric utilities as
6 well as Order No. 888 and Order No. 889 waiver requests for other utilities. I have
7 prepared market power analyses in support of market-based rate filings at FERC for
8 utilities and their marketing affiliates, as well as assisting other utilities with their
9 market-based rate filings. I have assisted utilities with developing strategic marketing
10 plans and implementing these plans. I have provided utility clients with assistance
11 regarding regulatory policy and strategy; state and federal regulatory filing development;
12 cost of service development and support; the development of innovative rates to achieve
13 strategic objectives; the unbundling of rates and the development of menus of rate
14 alternatives for use with customers; and performance-based rate development. I have
15 provided training to account executives in sales and customer negotiation, as well as
16 providing training in ratemaking and utility finance regarding basic utility marketing. I
17 have provided marketing, market research and marketing support services for utility
18 clients and have assisted them in assessing their marketing capabilities and processes.

19 **Q. Have you ever testified before any state or federal regulatory commissions?**

20 A. Yes, on a number of occasions. In Kentucky, I testified in Administrative Case No. 244
21 regarding rates for co-generators and small power producers, Case No. 8924 regarding
22 marginal cost of service, and in numerous 6-month and 2-year fuel adjustment clause

1 proceedings. I testified in Case No. 96-161 and Case No. 96-362 regarding Prestonsburg
2 City's Utilities Commission ("Prestonsburg") rates. I testified in Case No. 99-046 on
3 behalf of Delta Natural Gas Company, Inc. ("Delta") concerning its rate stabilization plan
4 and in Case No. 99-176 concerning cost of service, rate design and expense adjustments
5 in connection with Delta's rate case. In Case No. 2000-080, I testified on behalf of
6 Louisville Gas and Electric Company concerning cost of service, rate design, and pro-
7 forma adjustments to revenues and expenses. I submitted rebuttal testimony in Case No.
8 2000-548 on behalf of Louisville Gas and Electric Company regarding the company's
9 prepaid metering program. I submitted testimony on behalf of Louisville Gas and
10 Electric Company in Case No. 2002-00430 and on behalf of Kentucky Utilities Company
11 in Case No. 2002-00429 regarding the calculation of merger savings. Most recently, I
12 submitted testimony on behalf of Louisville Gas and Electric Company in Case No.
13 2003-00433 regarding gas and electric cost of service studies, revenue allocation, rate
14 design, and pro-forma adjustments and on behalf of Kentucky Utilities Company in Case
15 No. 2003-00434 regarding electric cost of service studies, revenue allocation, rate design,
16 and pro-forma adjustments.

17 In Florida, I testified in Docket No. 981827 on behalf of Lee County Electric
18 Cooperative, Inc. concerning Seminole Electric Cooperative Inc.'s wholesale rates and
19 cost of service. I also testified in Alabama in Docket 28101 on behalf of Mobile Gas
20 Service Corporation concerning rate design and pro-forma revenue adjustments. In
21 Illinois, I testified in Docket No. 01-0637 on behalf of Central Illinois Light Company
22 ("CILCO") concerning the modification of interim supply service and the

1 implementation of black start service in connection with providing unbundled electric
2 service. In Colorado, I testified in Consolidated Docket Nos. 01F-530E and 01A-531E
3 on behalf of Intermountain Rural Electric Association in a territory dispute case. I
4 testified before the FERC in Docket No. EL02-25-000 et al. concerning Public Service of
5 Colorado's fuel cost adjustment. I testified before the Public Utilities Commission of
6 Nevada on behalf of Nevada Power Company in Case No. 03-10001 regarding cash
7 working capital and on behalf of Sierra Pacific Power Company in Case No. 03-12002
8 regarding cash working capital.

9
10 **II. GAS COST OF SERVICE**

11 **Q. Did you prepare a cost of service study for Delta's natural gas operations based on**
12 **financial and operating results for the 12 months ended December 31, 2003?**

13 A. Yes. I supervised and participated in the preparation of a fully allocated, embedded cost
14 of service study for natural gas service based on Delta's accounting costs per books,
15 adjusted for known and measurable changes to test year operating results, for the 12
16 months ended December 31, 2003. The Commission in other rate case proceedings has
17 accepted the methodology used in Delta's cost of service study. The cost of service study
18 corresponds to the pro-forma financial exhibits included in the testimony of John Hall.
19 The objective in performing the cost of service study is to determine the rate of return on
20 rate base that Delta is earning from each customer class, which provides an indication as
21 to whether Delta's service rates reflect the cost of providing service to each customer
22 class.

1 **Q. Have you ever prepared an embedded cost of service study?**

2 A. Yes, on many occasions. While employed at LG&E, I prepared numerous gas and
3 electric cost of service studies, many of which were filed in rate cases before the
4 Commission. Since leaving LG&E, I have prepared or supervised the preparation of
5 well over 100 embedded cost of service studies for electric, gas and water utilities. In
6 Kentucky, I supervised and participated in the preparation of gas cost of service studies
7 for Delta (Case No. 99-176) and LG&E (Case No. 2003-00433 and Case No. 2000-080).

8 **Q. Did you develop the model used to perform Delta's cost of service study?**

9 A. Yes. I developed the spreadsheet model used to perform the cost of service study being
10 submitted in this proceeding.

11 **Q. What procedure was used in performing the cost of service study?**

12 A. The cost of service study was prepared using the following basic procedure: (1) costs
13 were functionally assigned (*functionalized*) to the major functional groups, (2) costs were
14 then *classified* as commodity-related, demand-related, or customer-related; and then (3)
15 costs were allocated to Delta's rate classes. These steps are depicted in the following
16 diagram (Figure 1). This is a standard approach utilized in the preparation of embedded
17 cost of service studies for gas utilities.

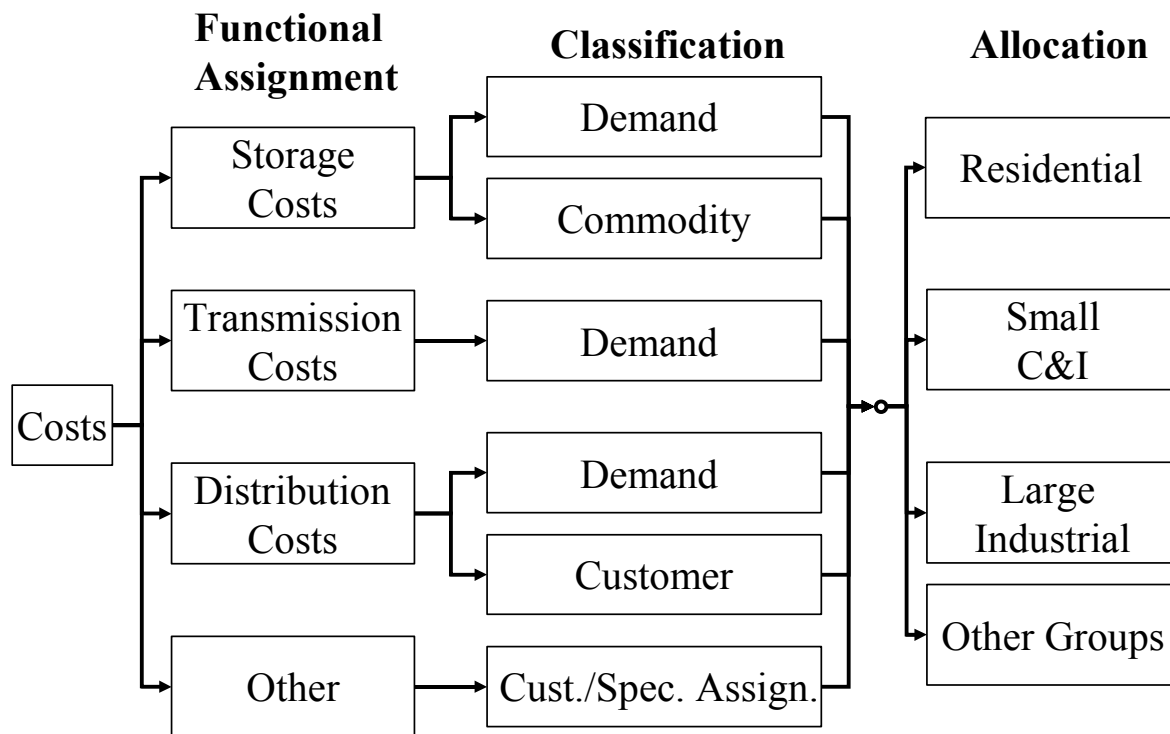


Figure 1

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Q. What is the purpose of functionally assigning costs?

A. Functional assignment serves the following purposes: (1) it groups associated costs together to facilitate allocation on the basis of cost responsibility; (2) it provides a rational mechanism for grouping costs that do not appear to be related to major service functions; and (3) it provides a mechanism for separating assignable costs from joint costs, which must be allocated.

1 **Q. What functional groups were used in the natural gas cost of service study?**

2 A. The following standard functional groups were identified in the cost of service study: (1)
3 Storage, (2) Transmission, (3) Distribution Commodity, (4) Distribution Structures and
4 Equipment, (5) Distribution Mains, (6) Services, (7) Meters, (8) Customer Accounts, and
5 (9) Customer Service Expense.

6 **Q. How were costs classified as commodity related, demand related or customer
7 related?**

8 A. Classification provides a method of arranging costs so that the service characteristics that
9 give rise to the costs can serve as a basis for allocation. Costs classified as *commodity*
10 *related* tend to vary with the quantity of gas delivered, such as gas supply and the
11 operation of compressors. Since gas supply costs were removed from the cost of service
12 study, it was not necessary to classify gas supply costs. Costs classified as *demand*
13 *related* are costs related to facilities installed to meet design-day usage requirements.
14 Costs classified as *customer related* include costs incurred to serve customers regardless
15 of the quantity of gas purchased or the peak requirements of the customers. All
16 transmission plant costs were classified as demand related. Distribution Structures and
17 Equipment costs were classified as demand-related. Costs related to Distribution Mains
18 were classified as demand-related and customer-related using the zero intercept
19 methodology. Services, Meters, Customer Accounts, and Customer Service Expenses
20 were classified as customer-related.

1 **Q. Have you prepared an exhibit showing the results of the functional assignment and**
2 **classification steps of the cost of service study?**

3 A. Yes. Seelye Exhibit 1 shows the results of the first two steps of the cost of service study:
4 functional assignment and classification.

5 **Q. In your cost of service model, once costs are functionally assigned and classified,**
6 **how are these costs allocated to the customer classes?**

7 A. In the cost of service model used in this study, Delta's accounting costs are functionally
8 assigned and classified using what are referred to in the model as "functional vectors".
9 These vectors are multiplied (using *scalar multiplication*) by the various accounts in
10 order to simultaneously assign costs to the functional groups and classify costs.
11 Therefore, in the portion of the model included in Seelye Exhibit 1, Delta's accounting
12 costs are functionally assigned and classified using the explicitly determined functional
13 vectors of the analysis and using internally generated functional vectors. The explicitly
14 determined functional vectors, which are primarily used to direct where costs are
15 functionally assigned and classified, are shown on pages 27 and 28 of Seelye Exhibit 1.
16 Internally generated functional vectors are utilized throughout the study to functionally
17 assign costs on the basis of similar costs or on the basis of internal cost drivers. The
18 internally generated functional vectors are shown on pages 29 and 30 of Seelye Exhibit 1.
19 An example of this process is the use of total operation and maintenance expenses
20 excluding gas supply expenses ("OMT") to allocate cash working capital included in rate
21 base. Because cash working capital is determined on the basis of 12.5% of operation and
22 maintenance expenses, exclusive of gas supply expenses, it is appropriate to functionally

1 assign and classify these costs on the same basis. (See Seelye Exhibit 1, pages 5 and 6
2 for the functional assignment of cash working capital on the basis of OMT shown on
3 pages 21 and 22.) The functional vector used to allocate a specific cost is identified by
4 the column in the model labeled “Vector” and refers to a vector identified elsewhere in
5 the analysis by the column labeled “Name”.

6 Once costs for all of the major accounts are functionally assigned and classified,
7 the resultant cost matrix for the major cost groupings (e.g., Plant in Service, Rate Base,
8 Operation and Maintenance Expenses) is then transposed and allocated to the customer
9 classes using “allocation vectors” or “allocation factors”. This process is illustrated in
10 Figure 2 below.

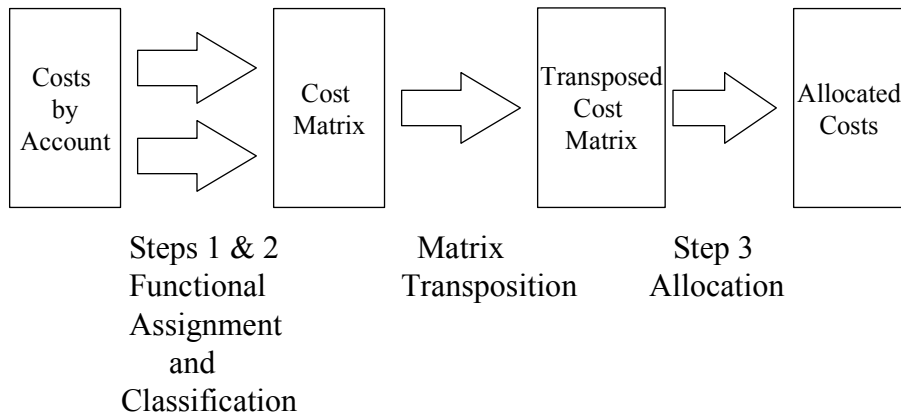


Figure 1

11
12 The results of the class allocation step of the cost of service study are included in Seelye
13 Exhibit 2. The costs shown in the column labeled “Total System” in Seelye Exhibit 2

1 were carried forward *from* the functionally assigned and classified costs shown in Seelye
2 Exhibit 1. The column labeled “Ref” in Seelye Exhibit 2 provides a reference to the
3 results included in Seelye Exhibit 1.

4 **Q. Please describe the allocation factors used in the gas cost of service study.**

5 A. The following allocation factors were used in the gas cost of service study:

- 6
- 7 • **DEM02** is used to allocate Storage demand-related costs
8 and represents a composite allocation based on expected
9 winter season requirements and design day demands. The
10 class allocation factor is the sum of (a) the volumes
11 (commodity) withdrawn from storage during the expected
12 winter season, and (b) the volumes needed in storage to
13 meet the design-day demands. The calculation of this
14 allocation factor is shown on Seelye Exhibit 3.
- 15
- 16 • **DEM03** is used to allocate Transmission demand-related
17 costs and is allocated on the basis of design-day demands
18 determined at Delta’s -3 degree F design-day mean
19 temperature.
- 20
- 21 • **DEM04** is used to allocate Distribution Structures and
22 Equipment demand-related costs and represents maximum

1 class demands determined at Delta's -3 degree F design day
2 mean temperature. These demands, which are shown in
3 Seelye Exhibit 4, were calculated using base loads and
4 temperature sensitive loads developed for the temperature
5 normalization adjustment. The temperature normalization
6 adjustment will be discussed later in my testimony.

- 7
- 8 • **DEM05** is used to allocate the demand-related portion of
9 the cost of distribution mains and represents maximum
10 class demands determined at the design day mean
11 temperature.
 - 12
 - 13 • **COM02** is used to allocate Storage commodity-related
14 costs and represents actual customer class deliveries during
15 the winter withdrawal season (defined as the months of
16 December through March.)
 - 17
 - 18 • **COM03** is used to allocate Transmission commodity-
19 related costs and represents annual throughput volumes
20 (including both sales and transportation).
 - 21
 - 22 • **COM04** is used to allocate Distribution commodity-related

1 costs and represents annual throughput volumes (including
2 both sales and transportation) of customers served on the
3 distribution system.

4

5 • **CUST01** is used to allocate the customer-related portion of
6 Delta's distribution mains and represents the year-end
7 number of customers.

8

9 • **CUST02** is used to allocate Services and is based on the
10 total estimated cost of installing a service line per customer
11 in each customer class weighted by the year-end number of
12 customers in each class.

13

14 • **CUST03** is used to allocate Meters and is based on the
15 estimated cost of meters and meter installation costs per
16 customer in each customer class weighted by the year-end
17 number of customers in each class.

18

19 • **CUST04** is used to allocate customer accounts expenses
20 (Accounts 901 through 905) and is determined on the basis
21 of the average number of customers.

22

- **CUST05** is used to allocate customer service expenses using the same allocation factor used to allocate Accounts 901, 902, 903, and 905 in CUST04.

Q. How are mains typically classified between demand and customer costs?

A. Two commonly used methodologies for determining demand/customer splits of distribution plant are the “minimum system” methodology and the “zero-intercept” methodology. In the minimum system approach, a “minimum” standard pipe size is selected and the minimum system is obtained by pricing all of the distribution mains at the unit cost of this minimum size pipe. The minimum system determined in this manner is then classified as customer-related and allocated on the basis of the number of customers in each rate class. All costs in excess of the minimum system are classified as demand-related. The theory supporting this approach maintains that in order for a utility to serve even the smallest customer, it would have to install a minimum size system. Therefore, the costs associated with the minimum system are related to the number of customers that are served, instead of the demand imposed by the customers on the system.

In preparing this study, the “zero-intercept” methodology, rather than the minimum system methodology, was used to determine the customer component of mains. Because the zero-intercept methodology is less subjective than the minimum system approach, the zero-intercept methodology is strongly preferred over the minimum system methodology when the necessary data is available. With the zero intercept methodology,

1 we are not forced to choose a minimum size main to determine the customer component.

2 In the zero intercept methodology, a zero-diameter pipe is the absolute minimum system.

3 **Q. What is the theory behind the zero intercept methodology?**

4 A. The theory behind the zero intercept methodology is that there is a linear relationship
5 between the unit cost (\$/ft) of mains and the gas flow capability of the pipe, which is
6 proportionate to its diameter. After establishing a linear relation, which is given by the
7 equation:

$$y = a + bx$$

8
9 where:

10 **y** is the unit cost of the pipe,

11 **x** is the size of the pipe, and

12 **a, b** are the coefficients representing the
13 intercept and slope, respectively

14
15 it can be determined that, theoretically, the unit cost of a pipe with zero diameter (or pipe
16 with zero load carrying capability) is **a**, the zero intercept. The zero intercept is
17 essentially the cost component of mains that is invariant to the size (and load carrying
18 capability) of the pipe.

19 Like most gas distribution systems, the number of feet of mains on Delta's
20 system is not uniformly distributed over all sizes of pipe. For example, Delta has
21 over 4.3 million feet of 2-inch plastic mains, but only 59 thousand feet of 6-inch

1 plastic mains. For this reason, it was necessary to use a weighted regression
2 analysis, instead of a standard least-squares analysis, in the determination of the
3 zero intercept. Using a weighted regression analysis, the cost and diameter of
4 each size pipe is, in effect, weighted by the number of feet of installed pipe. In a
5 weighted regression analysis, the following weighted sum of squared differences

$$\sum_i w_i (y_i - \hat{y}_i)^2$$

6
7 is minimized, where w is the weighting factor (in this case the feet of pipe) for
8 each size of pipe, and y is the observed value and \hat{y} is the predicted value of the
9 dependent variable (in this case the unit cost of the pipe).

10 Attached as Seelye Exhibit 5 is the zero-intercept analysis used in this study. The
11 zero-intercept unit cost of \$2.99 per foot pipe is applied to the total feet of mains in the
12 analysis to determine the customer cost component. The listing on page 1 of the analysis
13 indicates that the coefficient of determination R-squared for mains is 0.8385. The
14 coefficient of determination is a relative measure of the goodness of fit, where a
15 coefficient of 0.0 indicates no linear correlation between the independent variable and
16 dependent variable and a coefficient of 1.0 indicates perfect linear correlation.

17 **Q. Has the Commission accepted the use of the zero-intercept methodology in previous**
18 **cases?**

19 A. Yes, on many occasions. LG&E utilized the zero-intercept methodology in the cost of
20 service studies submitted in its last two base rate cases (Case No. 2000-080 and Case No.

1 90-158) in which the Commission has issued orders and the Commission found them to
2 be reasonable, thus providing a means of measuring class rates of return and suitable for
3 use as a guide in developing appropriate revenue allocations and rate design. The
4 Commission also found the embedded cost of service study submitted by The Union
5 Light Heat and Power in its recent gas base rate case (Case No. 2001-00092), which
6 utilized a zero-intercept methodology, to be reasonable. In my experience, the zero-
7 intercept methodology is the predominant method used in Kentucky and is used widely in
8 other jurisdictions.

9 **Q. Please summarize the results of the gas cost of service study.**

10 A. The following table (Table 1) summarizes the rates of return on net cost rate base for
11 each customer class before and after reflecting the rate adjustments proposed by Delta.
12 The rates of return shown in Table 1 can be found on pages 31-34 of Seelye Exhibit 2.
13 The Actual Adjusted Rate of Return was calculated by dividing the adjusted net
14 operating income by the adjusted net cost rate base for each customer class. The adjusted
15 net operating income and rate base reflect the pro-forma adjustments discussed in Mr.
16 Hall's testimony. The Proposed Rate of Return was calculated by dividing the net
17 operating income adjusted for the proposed rate increase by the adjusted net cost rate
18 base.

19

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TABLE 1		
Class Rates of Return		
Customer Class	Actual Adjusted Rate of Return	Proposed Rate of Return
Residential	3.83%	6.83%
Small Non-Residential General Service	7.87%	10.01%
Large Non-Residential General Service	8.07%	10.01%
Interruptible	24.29%	24.29%
Special Contracts	4.83%	4.83%
Off-System Transportation	10.57%	10.57%
Total System	6.22%	8.55%

2

3 **Q. Is the current rate of return for the residential class adequate?**

4 A. No. As shown in Table 1, the rate of return for the residential class is below the rates of
5 return for the other customer classes. Delta's overall adjusted rate of return is 6.22%,
6 while the rate of return for the residential class is only 3.83%. In my opinion, Delta
7 should be allowed to charge rates that bring the rate of return more in line with the
8 overall rate of return.

9 **Q. Would Delta's proposed rates move the company toward bringing the class rates of**
10 **return closer together?**

11 A. Yes. As can be seen in Table 1, the residential rates proposed by Delta result in a pro-
12 forma rate of return of 6.83%, which brings the residential class within approximately 1.7
13 percentage points of the proposed overall rate of return of 8.55% (compared to 2.4
14 percentage points, currently).

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III. TEMPERATURE NORMALIZATION ADJUSTMENT

Q. Please explain the calculations and methodology used to determine the temperature normalization adjustment to test period revenue.

A. Delta has a Weather Normalization Adjustment (“WNA”) clause that automatically adjusts the commodity charge to reflect normal temperatures. The WNA clause is applicable to residential and small non-residential general service and is currently applied during the months of December through April. Because the WNA automatically normalizes customer billings for these two rate classes during the months of December through April it is not necessary to perform a temperature normalization adjustment for these two classes during these months. However, it is necessary to perform a temperature normalization adjustment for residential and small non-residential general service to reflect the heating months not covered by the WNA. Additionally, it is necessary to perform a temperature normalization adjustment for rate classes not billed under the WNA, namely, large non-residential general service and interruptible rate classes.

Q. How was the gas temperature normalization adjustment performed for the rate classes not billed under the WNA?

A. A standard temperature normalization adjustment covering the entire heating season was performed for the large non-residential general service and interruptible rate classes. Heating degree days related to cycle billed customer deliveries were 13 below the 30-year average Weather Bureau heating-degree days of 4,614, where the 30-year average was determined using the 30-year period ended December 2002. Thus, Delta’s actual

1 revenues were understated due to warmer than normal temperatures experienced during
2 the test period. The degree-day data used for purposes of calculating the temperature
3 normalization adjustment were obtained from the Lexington, Kentucky weather station.

4 The first step in computing the temperature-related variance in deliveries was to
5 determine the annual non-temperature sensitive and temperature sensitive volumes for
6 each rate class. The determination of the non-temperature sensitive volumes was based
7 on the gas deliveries that occurred in July and August since those months had the lowest
8 volumes and also had no heating degree days. The volumes in those two months were
9 then multiplied by six to calculate an annual non-temperature sensitive load that was
10 deducted from total deliveries to arrive at the annual temperature sensitive volumes.

11 The next step was to determine the volumetric adjustment required to normalize
12 deliveries to reflect normal temperatures. The annual temperature sensitive volumes
13 were divided by the actual heating degree days (4,601 for billing cycle customers) in the
14 test period and the resulting Mcf per degree day was then multiplied by the degree-day
15 departure from normal (13 HDDs) to arrive at the volumetric adjustment for each rate
16 class. In the final step, the volumetric adjustment for each rate class was applied to the
17 applicable distribution component (rate per Mcf) for each rate schedule not billed under
18 the WNA.

1 **Q. How was the gas temperature normalization adjustment performed for the**
2 **residential and small non-residential general service rate classes, which are billed**
3 **under the WNA?**

4 A. The same methodology was used for the residential and small non-residential general service
5 rate classes except that the difference in degree days was determined only for the months
6 outside of the period when the WNA is applied. In other words the temperature
7 normalization was only applied to the 7 non-WNA months of May through November.
8 Since the WNA adjusts customer volumes during the months of December through April, it
9 was not necessary to make a temperature normalization adjustment during these months.
10 During the months of May through November, actual heating degree days related to cycle
11 billed customer deliveries were 89 below the 30-year average Weather Bureau heating-
12 degree days of 854. This difference was then used in the calculation of the temperature
13 normalization adjustment for the residential and small non-residential general service rate
14 classes.

15 **Q. Please summarize the total impact of the gas temperature normalization**
16 **adjustment.**

17 A. The temperature normalization adjustment results in a net increase of \$115,747 to Delta's
18 gas operating revenue. The calculation of this amount is summarized on Seelye Exhibit 6.

19

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21 **IV. DEPRECIATION STUDY AND DEPRECIATION EXPENSE ADJUSTMENT**

1 **Q. Did you supervise the preparation of a depreciation study for Delta?**

2 A. Yes.

3 **Q. Was a standard methodology used to determine the depreciation accrual rates?**

4 A. Yes. Where suitable information was available, the Simulated Plant Record (SPR)
5 methodology was used to determine the survivor curve that best fit the plant retirement data
6 for Delta's plant accounts. The SPR methodology is described in *Public Utility*
7 *Depreciation Practices* published by the National Association of Regulatory Utility
8 Commissioners and in other publications. Where sufficient data were not available, or the
9 resulting statistics were not satisfactory, we relied heavily on comparisons to the survivor
10 curves and depreciation rates utilized by neighboring gas utilities. The methodology used to
11 develop the depreciation accrual rates is described in more detail in the report included in
12 Seelye Exhibit 7.

13 **Q. What did the study indicate?**

14 A. By and large, the depreciation study indicated that many of Delta's current depreciation
15 accrual rates should be lowered. Again, the results of the study are described in greater
16 detail in the report included as Seelye Exhibit 7. A table is included as Appendix A of the
17 report comparing Delta's current depreciation rates to the accrual rates proposed in the study.
18 The proposed rates were used to develop the pro-forma adjustment to depreciation expenses
19 discussed in Mr. Hall's testimony.

20 **Q. Did you compare Delta's proposed depreciation accrual rates with those of other**
21 **gas utilities in the region?**

22 A. Yes, and they are generally in line with those used by other utilities in the region.

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V. NUMBER OF CUSTOMERS AT THE END OF THE TEST YEAR

Q. Is Delta proposing to make a pro-forma adjustment to reflect the number of customers served at the end of the year?

A. No. Delta’s billing records indicated that there has been a net reduction in the number of customer served as of December 31, 2003, compared to the number of customers served as of December 31, 2002, twelve months earlier. Considering this reduction in the number of customers, the Company did not believe that it was appropriate to make an adjustment to reflect the difference in revenues and expenses between customers served at year-end and customers served during the test year.

Q. Have you prepared an exhibit showing the number of customers served as of December 31, 2003, compared to the number of customer served as of December 31, 2002?

A. Yes. This comparison is shown in Seelye Exhibit 8. As can be seen from this exhibit, the total number of customers has increased by 420 from December 31, 2002, to December 31, 2003.

VI. ALLOCATION OF THE REVENUE INCREASE AND RATE DESIGN

Q. Have you prepared an exhibit reconstructing Delta’s test-year billing units?

A. Yes. In order to develop Delta’s proposed rates it was necessary to reconstruct test-year billing units. The reconstruction of Delta’s billing determinants is shown on Seelye Exhibit

1 9. As shown on column 7 of page 1 of Seelye Exhibit 9, the base rate revenues calculated on
2 pages 2 through 4 of that exhibit were within a factor of 0.99882 of Delta's actual net
3 revenues shown on column 5 of page 2 of the same exhibit, thus, confirming the accuracy of
4 the test period billing determinants.

5 **Q. After considering all of the required adjustments, what is the proposed increase in**
6 **revenues and how is the increase apportioned to the individual customer classes?**

7 A. In this filing, Delta is proposing to increase its annual revenues by \$4,277,456 (reflecting a
8 revenue deficiency of \$4,277,471 shown on Schedule 1, Tab 27, of Mr. Hall's testimony).
9 Seelye Exhibit 10 shows that the proposed increase would result in an increase of 7.41% in
10 total operating revenue (and 7.74% in total retail sales and transportation). In addition to
11 requesting an increase in gas service rates, Delta is also proposing to increase the
12 reconnection charge thus resulting in an increase in miscellaneous revenue.

13 The proposed rates apportion the revenue increase among the customer classes as
14 follows:

15

TABLE 2		
Proposed Gas Increase		
Customer Class	Proposed Increase	Percentage
Residential	\$ 3,050,462	10.0%
Small Non-Residential General Service	\$ 494,989	5.42%
Large Non-Residential General Service (Sales and Transportation)	\$ 716,613	5.39%
Total Sales and Transportation	\$ 4,262,064	7.74%

16

1 As shown on Seelye Exhibit 11, pages 1-3, the effects on individual class revenues were
2 determined by applying both the current and proposed charges to the adjusted billing
3 determinants for each customer class.

4 **Q. What was the basic underlying information that supported the proposed allocation**
5 **among rate classes?**

6 A. The cost of service study provided information measuring the extent to which the revenues
7 generated by each customer class contribute to the overall return earned by the Company.
8 As shown on Table 1, the cost of service study indicated that the individual class rates of
9 return ranged between 3.83% and 24.29% as compared to an overall adjusted actual return
10 on rate base of 6.22%, with residential being the lowest at 3.83%. This indicates a need to
11 increase the revenues collected from the residential class more than the other classes. The
12 rates of return for all of the rate classes except the special contracts were significantly higher
13 than for residential. The cost of service study also showed that the earned return for the
14 interruptible and off-system transportation rates were extremely high when compared to the
15 other classes of service. Because the rate of return for the residential class is significantly
16 below Delta's proposed overall rate of return of 8.55%, we are proposing to increase the
17 residential rate by a larger percentage than the other classes in order to bring the residential
18 rate of return more in line with the overall rate of return. The special contracts are served
19 under fixed-price arrangements; therefore, none of the revenue increase will be allocated to
20 these customers. Delta does not propose to increase the rates for the interruptible rate class
21 or for off-system transportation customers because of the high rates of return for these two
22 rate classes. With a rate of return of 24.29% for interruptible service and 10.57% for off-

1 system transportation, a rate increase for these two rate classes cannot be justified. Delta is
2 proposing increases for the small and large non-residential general service rate classes that
3 will result in a rate of return of approximately 10.0%, based on the results of the cost of
4 service study. Increasing the small and large non-residential general service rate classes to
5 this level will result in a class rate of return that is less than the return earned from off-system
6 transportation customers, which, according to the cost of service study, is producing a
7 10.57% rate of return.

8 **Q. Is it important to consider competitive issues when designing rates?**

9 A. Yes. It is extremely important to take into consideration the competitive pressures facing the
10 utility when designing rates. Utility customers have many more options than they did in the
11 past, and they are also becoming more sophisticated in how to utilize the various competitive
12 products that are now available to them. However, the natural gas industry has always
13 experienced keen competition from alternative fuels. When customers have alternatives (and
14 the ability to substitute fuel oil for natural gas is only one example), gas distribution
15 companies must be able to ensure that the revenues contributed by these customers are
16 retained as long as they make some contribution to the utility's fixed costs. Industrial and
17 commercial customers generally have more options than residential customers. Therefore, it
18 is important not to charge rates to commercial and industrial customers that are
19 uncompetitive and exceed the cost of providing service. Otherwise, large commercial and
20 industrial customers will leave the system thus forcing residential and small commercial
21 customers, who have fewer options, to pay for fixed costs that are left stranded by the
22 departing customers.

1 **Q. What are fixed costs?**

2 A. Fixed costs are the demand-related and customer-related costs that I discussed in the portion
3 of my testimony dealing with the cost of service study. These costs do not vary with the
4 annual amount of gas that is sold by the utility. Therefore, fixed costs do not go away if the
5 amount of gas the utility sells decreases. Unlike commodity-related costs, such as the cost of
6 the gas commodity that a distribution company buys for its customers, a utility's fixed costs
7 generally do not disappear if it sells less gas, but instead are spread over a lower volume of
8 gas, thus causing the utility's rates to increase. Therefore, if a utility loses several large high-
9 load factor industrial customers, then the utility's fixed costs do not suddenly disappear but
10 are shifted to the remaining customers in future rate proceedings. On the flipside, if the
11 utility can attract high-load factor customers or, even better, customers with off-peak usage,
12 then the utility's fixed costs can be spread over a larger volume of gas thus causing gas rates
13 to go down, benefiting all customers. Again, that is why it is important for Delta to keep the
14 rates applicable to price sensitive customers as low as practicable.

15 **Q. What were the ratemaking objectives in developing the proposed gas rates?**

16 A. In general, we tried to develop rates that more closely reflect the cost of providing service.
17 Therefore, one of our key objectives was to bring the unit charges more in line with the unit
18 costs derived from the cost of service study. Delta's rates consist of a customer charge and a
19 commodity charge. Thus, we developed rates that moved these charges toward the unit costs
20 indicated by the cost of service study.

1 **Q. Have you analyzed the customer-related costs for Delta’s rate classes?**

2 A. Yes. Seelye Exhibit 12 shows the unit customer-related costs for each rate class based on
3 the results of the cost of service study. The customer-related cost for each rate class was
4 derived by calculating the customer-related cost of service, or “revenue requirement” and
5 dividing this amount by the number of customers. Delta’s cost of service includes (1)
6 return on investment, (2) income taxes, (3) operation and maintenance expenses, (4)
7 depreciation expenses, and (5) other taxes. The proposed overall rate of return of 8.55%
8 was used to calculate the unit cost.

9 **Q. What does this analysis show for the residential rate class?**

10 A. Seelye Exhibit 12 shows that the customer-related cost for the residential class is \$21.51.

11 **Q. What customer and commodity charges is Delta proposing for the residential rate
12 schedule?**

13 A. We are proposing to increase the customer charge from \$8.00 to \$12.50 per customer per
14 month, and we are proposing a commodity charge of \$4.1638 per Mcf. The impact of
15 applying these charges to test-year billing determinants is shown on page 1 of Seelye Exhibit
16 11.

17 **Q. What are the proposed unit charges for the small non-residential general service
18 rate class?**

19 A. Delta is proposing a customer charge of \$22.00 per customer per month and a flat
20 commodity charge of 3.8984 for all Mcf. The current rate consists of a customer charge of
21 \$17.00 and commodity charge of \$3.6224 for the first 200 Mcf, \$2.400 for the next 800 Mcf,
22 and \$2.0495 for all usage over 1,000 Mcf. Because of the small amount of usage billed in

1 the higher blocks, we can eliminate the declining-block structure with limited impact on
2 billings under this rate schedule. The \$22.00 customer charge represents a significant
3 movement toward reflecting the \$28.24 customer cost indicated by the cost of service study.

4 The impact of applying these charges to test-year billing determinants is shown on page 2 of
5 Seelye Exhibit 11.

6 **Q. What are the proposed unit charges for the large non-residential general service**
7 **rate class?**

8 A. Delta is proposing a customer charge of \$80.00 per customer per month and a commodity
9 charge of \$3.8984 for the first 200 Mcf, \$2.3334 for the next 800 Mcf, \$1.3500 for the next
10 4,000 Mcf, \$0.9500 for the next 5,000 Mcf, and \$0.7500 for all usage over 10,000 Mcf. The
11 first block was set at the same level as the first block in the small non-residential general
12 service rate. The second block was increased by a larger percentage in order to reduce the
13 differential between the first and second blocks. The last three blocks were increased to
14 levels that would produce a differential of \$0.15 per Mcf between the large non-residential
15 general service rate and the interruptible rate. This increase would widen the differential
16 between the last three blocks of the two rates from the current level of \$0.119 to \$0.150 per
17 Mcf. Ultimately, the second block of the large non-residential general service rate was
18 increased by an amount necessary to produce the targeted revenue requirement for the rate
19 class (i.e., by an amount necessary to produce a rate of return of approximately 10.0%). The
20 impact of applying these charges to test-year billing determinants is shown on page 3 of
21 Seelye Exhibit 11.

1 **Q. Is Delta proposing to modify the interruptible or off-system transportation rate**
2 **schedules?**

3 A. No. As indicated earlier, rate increases for these services cannot be justified in light of the
4 high class rates of return.

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

6 A. Yes, it does.