

Exhibit No.:
Issue: Class Cost-of-Service,
Rate Design
Witness: Daniel I. Beck
Sponsoring Party: MoPSC Staff
Type of Exhibit: Surrebuttal Testimony
Case No.: GR-2002-356
Date Testimony Prepared: August 23, 2002

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

SURREBUTTAL TESTIMONY

OF

DANIEL I. BECK

LACLEDE GAS COMPANY

CASE NO. GR-2002-356

Jefferson City, Missouri
August 2002

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

IN THE MATTER OF LACLEDE GAS)
COMPANY'S TARIFF TO REVISE)
NATURAL GAS RATE SCHEDULES) Case No. GR-2002-356

AFFIDAVIT OF DANIEL I. BECK


STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Daniel I. Beck, of lawful age, on his oath states: that he has participated in the preparation of the following written testimony in question and answer form, consisting of 5 pages of testimony to be presented in the above case, that the answers in the following written testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.



Daniel I. Beck

Subscribed and sworn to before me this 20th day of August, 2002.



Notary Public

DAWN L. HAKE
Notary Public - State of Missouri
County of Cole

My commission expires _____

My Commission Expires Jan 9, 2005

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Surrebuttal Testimony of
Daniel I. Beck

1 Q. On page 4, lines 20-22 of Mr. Mallinckrodt's Rebuttal testimony, he states
2 that: "there is nothing in the record in this case that supports or even describes the Staff's
3 allocation factors." Do you agree with this statement?

4 A. No, for several reasons. First, I have sponsored Staff's mains allocation factor
5 in the last five (5) rate cases that Laclede has filed, dating back to Case No. GR-96-193, and
6 the methodology was identical in all five cases. Mr. Mallinckrodt has filed testimony
7 regarding the allocation of mains in each of those cases also. Therefore, when my Direct
8 Testimony stated: "I updated the allocators that were used in Laclede's previous rate case to
9 reflect current customer numbers and current estimates of weather normalized peaks," I think
10 it is reasonable to believe that Mr. Mallinckrodt would have known the specifics of Staff's
11 mains allocation methodology. Second, the Commission is also familiar with Staff's method
12 of allocating mains as can be seen in the following excerpt from the Commission's Report
13 and Order in Case No. GR-96-285, effective February 11, 2001, from the section titled "IV.
14 Conclusions of Law; D. Rate Designs, Class Cost of Service, and Related Revenue Shifts; 2.
15 Allocation of Costs for Mains":

16 The Commission finds that the cost allocation method employed by Staff's
17 expert witness using stand-alone and integrated system components to
18 develop the cost allocator for distribution mains is fair and reasonable because
19 Staff's method does not over-allocate costs to either the small customers or
20 the LVS customers. In addition, Staff's method of cost allocation for
21 distribution mains properly takes into account economies of scale in its
22 allocation of the stand-alone component of the distribution main cost by
23 including the pipe diameter to serve the average or typical size of customer in
24 each class, not just the smallest. Likewise, Staff's method allocates costs to
25 fully meet the demands of the typical customer in a particular rate class and
26 properly accounts for economies of scale by including customer pipe length.

27
28 Q. Although Mr. Mallinckrodt references the Stand Alone method, he also
29 references the capacity utilization method. Are these terms synonymous?

Surrebuttal Testimony of
Daniel I. Beck

1 A. No, not in my opinion. I would define the method that Staff used to allocate
2 mains in this case as the stand-alone and integrated system methodology. The Capacity
3 Utilization Methodology is an entirely different methodology, which typically uses some
4 measure of year-round usage, such as the 12 monthly coincident peaks, to determine each
5 class's responsibility. Due to Mr. Mallinckrodt's apparent confusion over Staff's method of
6 allocating mains, I have attached the portion of my testimony in Case No. GR-96-193 titled
7 Allocation of Mains as Schedule 1.

8 Q. Page 6, lines 23-25 of Mr. Mallinckrodt's Rebuttal Testimony states: "I [Mr.
9 Mallinckrodt] also disagree with the capacity utilization method because, as the name
10 implies, the method focuses on usage instead of cost causation." Do you agree with this
11 statement?

12 A. No. First, I maintain that usage is a cost causation factor for mains. A system
13 of mains, such as Laclede's, is not simply designed to serve a customer for one day a year.
14 Instead, it is designed to meet the year-round needs of a customer; therefore, year round
15 usage is a cost causation factor. Second, when this sentence is viewed in the context of Mr.
16 Mallinckrodt's Rebuttal Testimony, one could conclude that he is referring to the Integrated
17 System Component of Staff's mains allocator. However, it is my contention that the Stand-
18 Alone Component of Staff's mains allocator takes into account the portion of the system that
19 is related to the individual customer and individual customer classes. The Integrated System
20 Component is the portion of the system that is serving the needs of all the customers and all
21 of the customer classes.

Surrebuttal Testimony of
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1 Q. Then do you agree with Mr. Mallinckrodt's Rebuttal Schedule 3 which he
2 states: "correct(s) the mains allocators of Staff" and "more accurately measure(s) the costs of
3 the mains used in providing service to the customer classes."?

4 A. No. In my opinion, Mr. Mallinckrodt is attempting to "adjust" the Staff's
5 methodology for individual customer characteristics that are more appropriately dealt with in
6 the Stand-Alone Component of the Staff's allocation of mains. Staff's Stand-Alone
7 Component is similar to the customer portion of Mr. Mallinckrodt's mains allocator;
8 however, Mr. Mallinckrodt's customer portion is allocated based on the arbitrary factors that
9 "recognize additional investment required and greater complexity in the service, metering
10 and billing process associated with the very large customers." The previous quote is from the
11 Direct Testimony of Company witness Michael R. Spotanski in Case No. GR-96-193 in
12 which he explains the factor of 40 which is the exact same large customer weighting factor
13 used by Mr. Mallinckrodt in the instant case. Given this explanation, I now understand why
14 Mr. Mallinckrodt attempted to account for the individual customer characteristics related to
15 mains, since the arbitrary factor of 40 in no way accounted for them. However, I still cannot
16 support making a second adjustment for individual customer characteristics when the
17 adjustment is properly made in the stand-alone component.

18 Q. Was there any other aspect of Mr. Mallinckrodt's "adjustment" to Staff's
19 mains allocator that you found to be noteworthy?

20 A. Yes. On page 9 of his Rebuttal Testimony, Mr. Mallinckrodt states that there
21 are "significant impacts on the studies of the Staff" and he goes on to state that "the amount
22 of main cost that is allocated to large volume customers is significantly reduced." A review
23 of the results of the "adjusted" Class COS study show that in total the large volume customer

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1 classes' results moved by approximately 63% (two of the four classes' results moved less
2 than 2%) and this was determined to have "significant impact." However, on page 3, line 15
3 of his Rebuttal Testimony, Mr. Mallinckrodt stated that "the impact on ratepayers resulting
4 from moving to cost-based rates is modest" even though the vehicular fuel class would
5 receive a 1100% increase based on Mr. Mallinckrodt's updated study. I do not understand
6 how 63% (or 2%) is significant while 1100% is modest.

7 Q. Have you reviewed the various proposals that have been offered by the other
8 parties in this case to address the weather's effect on current revenues?

9 A. Yes. In my opinion, each of the three proposals attempts to address both the
10 weather issue and the issue of customer impacts that I discussed in my Direct Testimony.
11 The first proposal, the Company's weather mitigation plan is unlikely to be lawful and will
12 likely have a small impact on customers at the beginning of the following winter season. The
13 second proposal, the Company's revised rate structure attempts to avoid the customer impact
14 issue by holding a residential customer's total rate (both non-gas and gas cost) constant but
15 allowing the non-gas and gas rates to shift significantly from the current rate design. The
16 third proposal, OPC's 15% rate design solution and Gas Supply Incentive Program (GSIP)
17 attempts to avoid the customer impact issue by making an incremental movement in rates
18 (and associated revenues) from the second block to the first block. In addition, it attempts
19 through a GSIP proposal, to address the volatility of the largest portion of a customer's bill,
20 the gas costs, which are collected through the Purchased Gas Adjustment (PGA) Clause and
21 the Actual Cost Adjustment (ACA) Clause.

22 Q. Does this conclude your Surrebuttal Testimony?

23 A. Yes, it does.

Direct Testimony of
Daniel I. Beck

1 Q. How does the stand-alone component for mains differ from the
2 minimum system component for mains?

3 A. The minimum system component is calculated under the assumption
4 that all customers (regardless of size) are served by the smallest sized main possible to
5 serve the smallest customer. The stand-alone component is calculated under the
6 assumption that the full demands of the typical customer in each class are met.

7 Q. Why is the stand-alone system preferred to the minimum system for
8 allocating individual customer costs?

9 A. The stand-alone system allocates cost to fully meet the demands of a
10 typical customer in a particular rate class, whereas the minimum system allocates the
11 costs required to meet the demands of the smallest customer regardless of rate class.

12 Q. Would you please explain how the stand-alone component of cost is
13 calculated for each rate class?

14 A. The stand-alone component is calculated by solving the replacement
15 cost function for mains using typical size (diameter) of services for each rate class as the
16 independent variable. The diameter of a typical customer's service is the smallest size of
17 pipe required to meet that customer's peak demand. The cost per unit length multiplied
18 by the total length of main serving each class is the class' total stand-alone cost. Each
19 class' stand-alone cost was divided by these costs summed over all classes to determine
20 the percentage of stand-alone cost allocated to each rate class.

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Daniel I. Beck

CALCULATION OF THE STAND-ALONE COMPONENT

Q. Specifically, what data were provided by the Company in this case?

A. In response to Staff Data Request #4109, the Company provided an embedded and trended cost study for FERC Account #376: Distribution Mains, which included pipe diameter, installed length, total embedded cost and total trended cost for each type of distribution main in their system.

Q. How were these data used to determine the cost of distribution mains?

A. Current (1990-1995) composite costs per unit length for plastic, steel, cast iron and copper were plotted against main diameter, and analyzed by means of a log linear regression. The following equation

$$C = 2.25D^{1.407} + 5.09$$

where

C = cost per foot of distribution main

D = diameter of distribution main in inches

The graph of this cost function is presented in Schedule 2.

Q. How are typical service diameters calculated for each rate class?

A. In response to Staff data request #4115, the Company provided a study: Sample of Main, Meter, Regulator & Service Line Data which included service diameters for customers in the Residential, Commercial/Industrial and Large Volume rate classes. These service diameters were averaged over each class to determine the typical service diameter. These results are shown in Schedule 3.

Direct Testimony of
Daniel I. Beck

1 Q. How were these diameters used to calculate the stand-alone demand
2 cost per foot?

3 A. Each average diameter was used as the independent variable in the
4 replacement cost function to calculate the cost per unit length for each rate class.

5 Q. From these costs, how were the total stand-alone costs for each class
6 determined?

7 A. Total stand-alone costs per length for each customer class were
8 multiplied by the total length of main serving each class. Results are described in
9 Schedule 4.

10 Q. How was the length of main for each class calculated?

11 A. The length of main serving each class was identical to that presented
12 on Schedules 4 and 5 in Dr. Eve A. Lissik's direct testimony in Case No. GR-94-220,
13 Laclede's last rate case.

14
15 CALCULATION OF THE INTEGRATED SYSTEM COMPONENT

16 Q. How are the integrated demand components of distribution main
17 allocated to each rate class?

18 A. Because the integrated system is sized to meet the coincident peak
19 demand of all customers, it is allocated to all rate classes in direct proportion to each
20 class' coincident peak demand. The integrated demand allocators are presented in
21 Schedule 5.

22 Q. How did you obtain the coincident peak demand data?

Direct Testimony of
Daniel I. Beck

1 A. Coincident peak demands were obtained Staff witness Anne Ross.

2
3 ALLOCATION OF SERVICES

4 Q. How were services allocated?

5 A. Services were allocated by determining weighted customer numbers.

6 The weights were determined based on data obtained in response to Staff data request
7 #4115. The Company provided a Sample of Main, Meter, Regulator & Service Line
8 Data which included service costs for each customer in the sample. These service costs
9 were averaged over each class and the weights were computed based on the average cost
10 of each class. These results are shown in Schedule 6.

11
12 ALLOCATION OF METERS

13 Q. How were the cost associated with meters allocated?

14 A. Costs associated with meters were allocated on a customer/demand
15 basis. Customer and demand percentages of cost were obtained from regression analysis
16 of trended cost data. The customer component of costs for each rate class were
17 calculated by taking the customer percentage of cost (69.87% for meters) from the
18 regression analyses and multiplying them by the percentage of total customers in each
19 rate class. The demand components of costs were calculated by taking the demand
20 percentage of cost (30.13% for meters) times each class' share of non-coincident peak
21 day demands. The percentage of cost allocated to each class are the sum of the
22 customer and demand component. These allocators are presented in Schedule 7.