

Exhibit No.:

Issue(s):

Witness/Type of Exhibit:

Sponsoring Party:

Case No.:

Mains Allocation;

Rate Design

Hong Hu/Rebuttal

Public Counsel

GR-2001-292

FILED

MAY 22 2001

Missouri Public
Service Commission

REBUTTAL TESTIMONY

OF

HONG HU

Submitted on Behalf of the Office of the Public Counsel

Missouri Gas Energy

Case No. GR-2001-292

May 22, 2001

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

In the matter of tariff revisions of Missouri Gas)
Energy, a division of Southern Union Company,)
designed to increase rates for natural gas service) Case No. GR-2001-292
to customers in the Missouri service area of the)
company.)

AFFIDAVIT OF HONG HU

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Hong Hu, of lawful age and being first duly sworn, deposes and states:

1. My name is Hong Hu. I am a Public Utility Economist for the Office of the Public Counsel.
2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony consisting of pages 1 through 11.
3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.


Hong Hu

Subscribed and sworn to me this 22nd day of May, 2001.


Bonnie S. Howard, Notary Public



Commission Expires May 3, 2005.

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REBUTTAL TESTIMONY
OF
HONG HU

MISSOURI GAS ENERGY

CASE NO. GR-2001-292

1 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

2 A. Hong Hu, Public Utility Economist, Office of the Public Counsel, P. O. Box
3 7800, Jefferson City, Missouri 65102.

4 **Q. HAVE YOU TESTIFIED PREVIOUSLY IN THIS CASE?**

5 A. Yes, I submitted direct testimony on the issues of Main allocators and rate design.

6 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

7 A. The purpose of my rebuttal testimony is to present Public Counsel (OPC)'s
8 response to Midwest Gas Users Association (MGUA) comments regarding the
9 allocation of mains, and the rate design recommendations filed by all of the
10 parties.

MAINS ALLOCATION

Q. ON PAGE 6, LINE 14-18 OF HIS DIRECT TESTIMONY, MGUA'S WITNESS MR. LADEROUTE STATED THAT "IF ONE CLASS OF CUSTOMERS IS NOT BEARING ITS COST TO SERVE, IN ORDER TO KEEP THE UTILITY WHOLE, THEN BY DEFINITION ANOTHER CLASS OR CLASSES MUST COVER THOSE COSTS IN THEIR RESPECTIVE RATES. WHEN THIS HAPPENS, THE LATTER IS SUBSIDIZING THE FORMER". HE FURTHER STATED IN PAGE 6, LINE 22 THROUGH PAGE 7, LINE 2 THAT "IF AN OBJECTIVE PARTY IS ASKED TO DETERMINE IF PRICE DISCRIMINATION OR CROSS SUBSIDIZATION IS TAKING PLACE, THEY CAN ONLY MAKE THEIR DETERMINATION BASED ON COMPARING REVENUES TO COSTS." DO YOU HAVE ANY COMMENTS REGARDING THESE STATEMENTS?

A. Yes. My first observation regarding Mr. Laderoute's statements is that these statements over-simplify the issue of cross-subsidization because the use of the term "cost" is not well defined. While I agree that Mr. Laderoute's generalization would apply in the absence of large joint and common cost, that is not characteristics of gas distribution facilities.

In the presence of shared facilities and joint and common cost, care must be taking when claiming subsidy. According to economic theory, a service may be providing a subsidy if its price exceeds the stand-alone costs of the service. Stand-alone cost refers to the cost necessary to provide the service assuming none of the facilities already exist to provide other services. Also according to economic theory, a service may be receiving a subsidy if its price is below the incremental cost of the service. Incremental cost refers to the additional cost of providing the service in question assuming that facilities necessary to provide all other services already exist. In reality, we know that there may be facilities used

1 to provide multiple services. This is especially true for utility services. For
2 example, distribution mains are shared facilities that serve all customer classes
3 and satisfy those customers' year-round gas distribution needs. Therefore, the
4 cost of distribution mains is joint and common costs that should be recovered
5 from the industrial class as well as MGE's other classes. When a large share of
6 the facilities would still be required to provide other services, the cost of those
7 facilities are joint and common cost and would not be considered incremental to
8 the service in question. The stand-alone cost for any individual service or class
9 may be very large compare to the total cost and the incremental cost may be
10 relatively small. As long as a customer class is not bearing a cost that is greater
11 than its stand-alone cost, it is not subsidizing other customers.

12 The second observation that I would like to make regarding Mr. Laderoute's
13 statement is that cost of service results are estimates. When setting rates for
14 regulated utilities, embedded cost studies are generally conducted in order to
15 determine reasonable class allocations of joint and common costs. To precisely
16 proportion common costs is not possible, and not required. It has been long
17 recognized by utility experts and regulators that embedded class cost of service
18 studies are inherently imprecise but still valuable in determining a reasonable
19 range of rates. An expert should be cautious, however, to avoid carelessly using
20 words such as "subsidy" without verification of their existence. Attempting to
21 determine the existence of "price discrimination" and "cross subsidization" by
22 simply comparing the revenues to an undefined measure of "costs", is naïve and
23 erroneous.

1 **Q. ON PAGE 11, LINE 21 THROUGH PAGE 13, LINE 6 OF HIS TESTIMONY, MR.**
2 **LADEROUTE DISCUSSED THE ADDITIONAL COSTS INCURRED SINCE THE LAST**
3 **RATE CASE IN ACCOUNT 376 (MAINS). DO YOU HAVE ANY RESPONSE TO THIS**
4 **DISCUSSION?**

5 A. Yes. Mr. Laderoute calculated the amount of mains per customer to be \$498 at
6 the time of the last rate case and \$567 now. He also stated that "looking at this
7 data from the incremental view, the Change in Mains per Change in customers is
8 \$2,262." He further concluded that "existing customers, ..., are subsidizing new
9 customers." I do not feel that his analysis of "change in mains per change in
10 customers" is appropriate or meaningful. MGE's account 376 records the total
11 costs of Mains Plant in Service (PIS). The amount that was added to that account
12 since the last rate case represents costs of both mains replacements and mains
13 extensions. Mr. Laderoute himself recognizes that "certainly the Company has
14 some general Mains that are replaced (for general purposes or as part of the safety
15 program)". Mr. Laderoute has not identified what portion of the new added costs
16 represents main replacements and what portion represents main extensions. To
17 attribute all newly added mains costs to new customers is simply not appropriate
18 without further analysis. Further, it should not be surprising that the replacement
19 cost of mains is greater than the historical average cost of mains. Generally,
20 facility installation costs have been increasing over time because facility
21 installation is labor intensive and labor costs have been increasing over time. This
22 does not necessarily lead to the conclusion that new customers are "subsidized"
23 by old customers if they don't pay a higher price. In fact, the mains facilities
24 used to serve a new customer may have been in place and used for decades. Such
25 plant may have been substantially depreciated and cost very little relative to
26 replacements. It is not practical, nor does it appear to be consistent with the

1 statute to require new customers pay a different price than existing customers for
2 the same service they receive. For the reasons identified above, I believe that Mr.
3 Laderoute's argument and associated calculations are effectively meaningless.

4 **Q. ON PAGE 28 OF HIS TESTIMONY, MR. LADEROUTE STATED THAT HE USED PEAK**
5 **MONTH CONSUMPTION TO ALLOCATE DEMAND RELATED MAINS PLANT IN**
6 **SERVICE. DO YOU BELIEVE THAT THIS IS AN APPROPRIATE ALLOCATION**
7 **METHOD?**

8 A. No. As I discussed in my direct testimony (page 6-7), a method that allocates
9 mains plant cost based solely on the peak month consumption fails to reflect the
10 fact that the utility system is built to satisfy the customers' daily demands for gas
11 throughout the year. I have noticed that instead of choosing the peak day demand,
12 Mr. Laderoute chose to base his allocation of mains on the peak month
13 consumption. Perhaps this indicates that Mr. Laderoute realizes the
14 inappropriateness of allocating mains cost on one single peak day. I find it
15 curious that Mr. Laderoute choose to give some weight to all hours that the mains
16 facilities are utilized in the entire peak month, while never explaining why it is
17 reasonable to give zero weight to other hours that the mains facilities are utilized
18 in the other months. According to this method, if a customer were able to avoid
19 consumption in the peak month, he would receive delivery of gas in 11 months
20 without paying for any mains cost. I believe that the relative system utilization
21 method (RSUM) used by OPC, which Mr. Laderoute himself developed, is more
22 reasonable because it allocates the mains cost based on the relative utilization of
23 the mains system in every month. Under the RSUM method, anybody that
24 utilized the mains system will be responsible for some portion of the total mains

1 cost, and those who use the mains system more and who use the mains system in
2 the peak month are responsible for more mains cost than others are.

3 **Q. MR. LADEROUTE DISCUSSED A CUSTOMER RELATED COMPONENT OF MAINS**
4 **PLANT COST IN SEVERAL PLACES IN HIS TESTIMONY (PAGE 30-32, 39-40). DO**
5 **YOU HAVE ANY COMMENT?**

6 A. Yes. After discussing at length several reasons why he believes that it is
7 reasonable to classify a portion of mains as customer related, Mr. Laderoute
8 decided not to include such a component in his mains allocation. While I
9 appreciate that ultimately Mr. Laderoute excluded a customer-related component
10 in his allocation of Mains, I do not agree with him that to include such a
11 component would be reasonable. In my direct testimony (page 4-5), I have
12 already addressed some of the common criticisms regarding classifying a portion
13 of mains plant as customer related. Therefore I will only add one point to my
14 previous remarks. Mr. Laderoute has allocated all costs of mains that are smaller
15 than 3" to the residential and SGS customers (about 28% of the total cost
16 according to his calculation). If he were to include the 24% of total cost that he
17 calculated to be customer related, then he would allocate another 99.8% of this
18 24% to residential and SGS customers. Then Mr. Laderoute would presumably
19 allocate the rest to each class based on peak month consumption, where
20 residential and SGS would receive about 76% according to Mr. Laderoute. This
21 would effectively allocate almost 90% of total mains cost to the residential and
22 SGS customers while their share of total consumption and peak demand are only
23 64% and 77%, respectively.

RATE DESIGN

Q. WHAT IS MR. LADEROUTE'S PROPOSAL FOR THE SHARE OF ANY POTENTIAL REVENUE REQUIREMENT INCREASE THAT SHOULD BE BORNE BY EACH CLASS?

A. Mr. Laderoute proposes setting the customer class revenue responsibility based solely on the result of his CCOS study. Schedule CDL-10 in his direct testimony shows his original proposed spread of revenue requirement. Mr. Laderoute filed supplemental direct testimony which contained an updated CCOS study. He later updated his CCOS study for a second time and provided his workpapers to all parties. He did not include an updated rate design proposal summary in his supplemental direct testimony, nor did he indicated that his rate design method would change as a result of the changes in his CCOS result. I have derived what his revenue spread proposal would be by updating line 1 of his Schedule CDL-10 to his last updated CCOS study results. The table below shows how the bottom part of his Schedule CDL-10 would look.

Table 1. MGUA Recommended Increase/Decrease of Class Rate Revenue

| <u>Revenue Increases</u> | <u>Residential Service</u> | <u>Small Gen Service</u> | <u>Large Gen Service</u> | <u>Large Vol Service</u> |
|------------------------------|--------------------------------|------------------------------|------------------------------|------------------------------|
| \$ 39,882,003 | \$ 34,145,209 | \$ 5,016,212 | \$ 82,937 | \$ 637,645 |
| \$ 33,117,733 | \$ 29,183,576 | \$ 3,783,020 | \$ (35,470) | \$ 186,607 |
| \$ 28,117,733 | \$ 25,516,046 | \$ 2,871,471 | \$ (122,993) | \$ (146,791) |
| \$ 18,117,733 | \$ 18,180,986 | \$ 1,048,373 | \$ (298,041) | \$ (813,586) |
| \$ 8,117,733 | \$ 10,845,926 | \$ (774,724) | \$ (473,088) | \$ (1,480,381) |
| \$ 3,117,733 | \$ 7,178,396 | \$ (1,686,273) | \$ (560,612) | \$ (1,813,778) |
| \$ 0 | \$ 4,891,520 | \$ (2,254,666) | \$ (615,187) | \$ (2,021,667) |
| \$ (1,882,267) | \$ 3,510,866 | \$ (2,597,821) | \$ (648,135) | \$ (2,147,176) |

From Table 1, we can see that if the total revenue increase is \$18 million, Mr. Laderoute believes that residential revenue should be increased by slightly more than the entire revenue increase amount. If the total revenue increase is \$3 million, Mr. Laderoute believes that residential class should get an increase that is over twice as large as the entire company revenue increase in order to provide the large volume customers with a rate reduction of nearly \$2 millions. I have also calculated the percentage increase each customer class would experience according to Mr. Laderoute's proposed revenue increase spread.

Table 2. MGUA Recommended % Increase/Decrease of Class Rate Revenue

| <u>Revenue Increases</u> | <u>Total</u> | <u>Residential Service</u> | <u>Small Gen Service</u> | <u>Large Gen Service</u> | <u>Large Vol Service</u> |
|------------------------------|--------------|--------------------------------|------------------------------|------------------------------|------------------------------|
| \$ 39,882,003 | 30.24% | 37.18% | 19.07% | 2.84% | 5.90% |
| \$ 33,117,733 | 25.11% | 31.77% | 14.39% | -1.21% | 1.73% |
| \$ 28,117,733 | 21.32% | 27.78% | 10.92% | -4.21% | -1.36% |
| \$ 18,117,733 | 13.74% | 19.80% | 3.99% | -10.19% | -7.52% |
| \$ 8,117,733 | 6.16% | 11.81% | -2.95% | -16.18% | -13.69% |
| \$ 3,117,733 | 2.36% | 7.82% | -6.41% | -19.17% | -16.77% |
| \$ 0 | 0.00% | 5.33% | -8.57% | -21.04% | -18.69% |
| \$ (1,882,267) | -1.43% | 3.82% | -9.88% | -22.17% | -19.85% |

As Table 2 clearly illustrates, if the Commission determines a \$39.9 million increase in MGE's total revenue (a 30% increase in revenue) is appropriate and chooses to spread the revenue increase to each customer class according to Mr. Laderoute's recommendation, residential customers would experience a 37% increase in their rates while large volume customers would only get a 5.9% increase. Similarly, at a 14% total revenue increase, Mr. Laderoute would ask residential revenues to be increased by 20% while the large volume class gets a 7.5% revenue **decrease**. At a 2.36% total revenue increase, Mr. Laderoute would

1 ask residential revenues to be increased by almost 8% while giving large volume
2 customers almost 17% revenue **decrease**.

3 **Q. DO YOU AGREE WITH MGUA'S PROPOSED METHOD OF SPREADING CLASS RATE**
4 **REVENUES?**

5 A. Absolutely not. First, Mr. Laderoute's class revenue spread proposal is based on
6 his unreasonable allocators and questionable CCOS study results. Therefore, his
7 proposed rate design should be rejected. Second, in recommending that class rate
8 revenues should be set strictly based on the result of a CCOS study, Mr.
9 Laderoute overlooked the inherent nature of the imprecision of a CCOS study, as
10 well as the importance of other factors in rate design. In many previous cases, the
11 Commission has determined that other factors such as affordability and rate
12 impact should be considered in setting just and reasonable rates¹. This case is
13 occurring at a time when gas prices have surged to unprecedented levels. This
14 recent history has demonstrated that the affordability and rate impact
15 considerations are more important than ever.

16 **Q. DID MR. LADEROUTE PROPOSE ANY ALTERNATIVE WAYS OF SPREADING THE**
17 **REVENUE INCREASE?**

18 A. Yes. On pages 51 through 52 of his direct testimony, Mr. Laderoute stated that if
19 the Commission "wishes other classes to continue to subsidize the residential
20 class", then he would suggest that the LGS and LVS current revenue levels be
21 kept unchanged. In other words, he could accept an outcome where small
22 customers shouldered the entire burden of a rate increase while LGS and LVS felt
23 no impact whatsoever. Both the Staff and OPC, the only two parties other than

¹ See GR-97-272, GR-96-285, for example.

1 MGUA that filed CCOS studies, show that the LVS class should receive a portion
2 of the total revenue increase. Even Mr. Laderoute's own CCOS study indicated a
3 positive revenue increase for the LVS class at certain levels of revenue increases.
4 To give the LVS class a zero revenue increase when even his own CCOS study
5 recommends an increase in some cases is ridiculous and contrary to his own
6 position regarding "subsidy".

7 **Q. DO YOU HAVE ANY COMMENTS REGARDING THE RATE DESIGN**
8 **RECOMMENDATIONS MADE BY OTHER PARTIES?**

9 A. Both MGE and the Staff recommended spreading the required revenue increase to
10 all customer classes by increasing the class revenues for each class by the same
11 percentage as the overall revenue requirement increase. Although OPC has
12 recommended a different rate design proposal, we would not be opposed to such
13 an outcome.

14 **Q. DO YOU HAVE ANY OTHER COMMENTS REGARDING THE CUSTOMER CHARGE**
15 **ISSUE, MGE'S MAINIMUM CHARGE PROPOSAL, AND MISCELLANEOUS TARIFF**
16 **AND SERVICE CHARGE ISSUES?**

17 A. It is my understanding that MGE, the Staff and OPC have agreed to enter into a
18 non-unanimous stipulation and agreement that include these issues. Parties have
19 agreed to a \$10.05 residential customer charge, a \$35 reconnection charge, a \$20
20 new connection charge, and a \$5 transfer charge. My understanding is that MGE
21 has also agreed to withdraw its minimum charge proposal if the stipulation and
22 agreement is accepted by the Commission. Further, MGE agreed to conduct a
23 study that will facilitate resolving OPC's miscellaneous tariff issue discussed on
24 page 20-21 of my direct testimony in the next rate case. Because of the

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1 settlement, OPC is not addressing these issues in rebuttal testimony. OPC does,
2 however, reserve the right to submit late filed rebuttal testimony on these issues if
3 the Commission does not accept the parties' settlement of these issues.

4 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

5 **A. Yes.**