EXHIBIT

Exhibit No.:	_____
Issue(s):	Mains Allocation; Rate Design
Witness/Type of Exhibit:	Hong Hu/Rebuttal
Sponsoring Party:	Public Counsel
Case No.:	GR-2001-292

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

_____ Exhibit No. 110
Date 6-25-01 Case No. GR-2001-292
Reporter Stewart

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 to customers in the Missouri service area of the company.	)))))	Case No. GR-2001-292

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.

Hu Hong

Hong Hu

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

Bonnie S. Howard, Notary Public

BONNIE S. HOWARD NOTARY SEAL MY COMMISSION EXPIRES OCT. 3, 2005 NOTARY PUBLIC COUNTY OF MONITEAU STATE OF MISSOURI

My commission expires May 3, 2005.

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REBUTTAL TESTIMONY

OF

HONG HU

MISSOURI GAS ENERGY

CASE NO. GR-2001-292

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

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

Q. HAVE YOU TESTIFIED PREVIOUSLY IN THIS CASE?

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

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

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

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

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

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

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

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

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

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

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

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

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

Revenue Increases	Residential Service	Small Gen Service	Large Gen Service	Large Vol Service
$ 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

Revenue Increases	Total	Residential Service	Small Gen Service	Large Gen Service	Large Vol Service
$ 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

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

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

A. Absolutely not. First, Mr. Laderoute's class revenue spread proposal is based on his unreasonable allocators and questionable CCOS study results. Therefore, his proposed rate design should be rejected. Second, in recommending that class rate revenues should be set strictly based on the result of a CCOS study, Mr. Laderoute overlooked the inherent nature of the imprecision of a CCOS study, as well as the importance of other factors in rate design. In many previous cases, the Commission has determined that other factors such as affordability and rate impact should be considered in setting just and reasonable rates[1]. This case is occurring at a time when gas prices have surged to unprecedented levels. This recent history has demonstrated that the affordability and rate impact considerations are more important than ever.

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

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

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

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

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

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

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

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

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

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.