Exhibit No.: _____

Issue(s):	Cost of Service Study
Witness/Type of Exhibit:	Busch/Direct
Sponsoring Party:	Public Counsel
Case No.:	GR-2001-292

DIRECT TESTIMONY

OF

JAMES A. BUSCH

Submitted on Behalf of the Office of the Public Counsel

Missouri Gas Energy

Case No. GR-2001-292

April 26, 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 to customers in the Missouri service area of the company.	)))))	Case No. GR-2001-292

AFFIDAVIT OF JAMES A. BUSCH

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

James A. Busch, of lawful age and being first duly sworn, deposes and states:

1. My name is James A. Busch. I am the Public Utility Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my direct testimony consisting of pages 1 through 11 and Schedules JAB-RD1 and JAB-RD2 .

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.

James A. Busch

Subscribed and sworn to me this 26th day of April, 2001.

Bonnie S. Howard, Notary Public

My Commission expires May 3, 2001.

DIRECT TESTIMONY

OF

JAMES A. BUSCH

CASE NO. GR-2001-292

MISSOURI GAS ENERGY

Q. Please state your name and business address.

A. My name is James A. Busch and my business address is P. O. Box 7800, Jefferson City, MO 65102.

Q. Are you the same James A. Busch who filed testimony previously in Case No. GR-2001-292?

A. Yes I am.

Q. What is the purpose of your testimony in the rate design portion of Case No. GR-2001-292?

A. The purpose of my testimony is to explain the allocators Public Counsel utilized to allocate services, meters, and regulators, and present Public Counsel's cost of service study (COS). Public Counsel witness Hong Hu will provide the mains allocator and provide Public Counsel's rate design testimony.

CLASS COST OF SERVICE STUDY

Q. What is the primary purpose of a cost of service study?

A. The primary purpose of a COS study is to provide an estimate of the cost of providing service to each of the customer classes, and is to be used as a guide for

setting rates to the extent allowed by other rate design objectives of the Commission.

Q. What are the primary steps in a COS study?

A. There are three primary steps in performing a class cost of service study. These steps include the functionalization, classification, and allocation of costs. Functionalization of costs means categorizing accounts according to the type of function with which an account is associated. Accounts are categorized as being related to Production, Transmission, Distribution, Customer Accounts, Administrative and General, etc., depending on the natural gas local distribution company (LDC) functions that they are a part.

Once costs have been functionalized, they are classified as being customer (related to the number of customers), demand (related to the portion of peak usage), or "other" costs, depending on the function with which they are associated. For example, customer records and collection expense, meter plant, and meter reading expense are considered customer-related, since company expenditures in these areas are related to the number of customers that it serves. These expenses, although dependent to some extent on a customer's size, will be incurred for each customer whether or not the customer uses any natural gas so it would not be reasonable to classify them as being commodity-related.

Allocation factors are then developed to distribute a reasonable share of jurisdictional costs to each customer class. Allocation factors are based on ratios

that reflect the proportion of total units (total number of customers, total annual throughput, etc.) attributable to a certain customer class. Applying these ratios to the appropriate cost categories produces an estimated cost for which each class is responsible.

Q. Which customer classes have you used?

A. I have used the following customer rate classes: Residential, Small General Service (SGS), Large General Service (LGS), Large Volume (LV), and Unmetered Gas Lights (UMGL). These are MGE's current rate classes.

Q. On what data is your class COS study based?

A. I utilized the Missouri Public Service Commission Staff (Staff) Accounting Schedules that Staff filed in its non-rate design testimony for the source of most of the financial data that I utilized in my COS study. I also used data received from MGE in response to Public Counsel Data Requests. My use of this data is not an endorsement of either Staff's or MGE's methods. I used this information because it was readily available and contains the level of detail necessary to perform a COS study.

METERS, REGULATORS, AND SERVICES

Q. What is a meter?

A. A meter is a device designed to provide accurate measurement of customer consumption of natural gas. The natural gas industry depends primarily on two classes of meters, positive displacement meters and orifice meters, to measure the volumes of gas delivered. Typically, at a single family dwelling where the volumes are small and at low pressure, positive displacement diaphragm meters

are used. Rotary, turbine, and large size diaphragm positive displacement meters are used to measure the larger volumes delivered to many industrial and commercial customers. At the city gate, and at other locations where large volumes of high-pressure natural gas must be metered, the industry uses the orifice meter, sometimes in conjunction with a diaphragm or rotary meter. The proper size of meters being installed to a customer is determined primarily on the system pressure, the customer's maximum expected load, load profile, and growth possibilities.

Q. What is a regulator?

A. A regulator is a device used to control the pressures in a natural gas distribution system. Generally, service regulators are installed ahead of the gas meter in the meter loop piping. They are used in all service lines to residential and small-volume commercial and industrial customers that connect to medium and high-pressure distribution systems. If delivery pressures are greater than 60 psig, then either a pressure-relief device or two regulators in series must be used. Regulators for industrial services range from slightly larger versions of those used for residential services to large installations similar to district regulator stations. Their choice is designed to meet the needs of an individual customer's load and distribution pressure at a particular customer location.

Q. What is a service?

A. A service is a pipe laid from a gas main into or near a building to be served, and connected to the customer's gas meter. Different customers use different sizes of services depending on their demand for natural gas. Service line size is

determined by considering the minimum inlet pressure, the customer's maximum expected load, and the length of the proposed service line. As in the case of meters and regulators, calculations of service size are only necessary for larger customers. The standard service line size of ½" will adequately serve all residential customers.

Q. Please explain the costs being allocated by the meter, regulator, and service allocators.

A. MGE's FERC (Federal Energy Regulatory Commission) account 381 includes the material cost of meters and FERC account 382 includes the installation cost of meters. MGE's FERC account 383 includes both the material cost and installation cost of regulators. MGE's FERC account 380 includes both the material cost and installation cost of services.

Q. Please state the factors that affect the allocation of material and installation costs of meters, regulators, and services.

A. In deriving the meter, regulator, and service allocators, I tried to allocate costs to the actual cost causers by considering three factors: customer counts for each rate class; average costs for each type of meter, regulator, and service; and the number of meters, regulators, or services used by a customer for each customer class.

Q. Please explain the first factor that affects the allocation of material and installation costs for meters, regulators, and services.

A. The first factor that affects the allocation of meters, regulators, and services is the customer count for each rate class. Meter costs are basically customer-related costs. Peak demand of a customer does not directly affect the meter cost except

that larger meters were generally designed for larger customers. If a residential customer adds a natural gas appliance and thus increases his peak demand, it will not directly affect his meter cost.

Q. Please explain the second factor that affects the allocation of material and installation costs for meters, regulators, and services.

A. The second factor that affects the allocation of meters, regulators, and services costs is the average cost for each type of meters, regulators, and services. Different customer classes use different sizes of meters, regulators, and services to accommodate their different capacity needs. For example, the standard small sizes of meters, regulators, and services can be used by most of the residential customers. On the other hand, LGS and LV customers, often use rotary, turbine, and large diaphragm meters, as well as larger sizes of regulators and services. Some variations exist in SGS customers' size of meters, regulators, and services. They range from the same size as residential customers to slightly larger ones. Both the size and length of the services affect the cost of service lines.

Q. Please explain the third factor that affects the allocation of material and installation costs of meters, regulators, and services.

A. The third factor that affects the allocation of meters, regulators, and services costs is the number of meters, regulators, or services used by a customer in each customer class. Generally, each customer has one service line, one meter, and one regulator. However, some customers are served by multiple services, regulators, and meters due to the physical nature of their facilities. For example, a large percent of LGS and LV customers use multiple meters. Also, there are

instances where multiple residential or SGS customers are served through one service line. For instance, it is possible that one service line serves a bank of meters in an apartment building or a strip mall. In this case, it is also possible to use only one regulator to serve multiple meters.

Q. Please describe the method used to derive the meter, regulator, and service allocators.

A. The class meter, regulator, and service allocators are based on the typical meter, service, regulator, and installation costs provided by the Company in Case No. GR-98-140, and the updated prorated customer count calculated by Staff in this case. The reason I used costs from Case No. GR-98-140 is that in response to Public Counsel data request asking for average costs for meters, regulators, and services for each class, MGE indicated that only partial data was available and only provided average costs for meters and regulators less than 2 inches. This did not provide sufficient data to use in this case. A meter/customer ratio is then calculated to reflect the number of meters used by a customer in each rate class. In deriving the meter/customer ratio, the total MGE meters in December 2000, adjusted to reflect differences between Staff and MGE customer counts, and the average number of billable meters in the year 2000, were compared. The meter/customer ratio was thus developed by spreading the unaccounted meters to all non-residential customers. A regulator/customer ratio and a service/customer ratio were also calculated using the same methodology.

Finally, the derivation of the meter allocator involves determining the meter counts by multiplying the prorated customer number with the meter/customer ratio; and determining the weighted count by using the typical meter cost for each customer class. The class meter allocators are residential, 76.7%; SGS, 17.4%; LGS, 1.4%; and LV, 4.5%.

The regulator and service allocators were derived in the same manner as the meter and meter installation allocator. The final class regulator allocators are residential, 34.6%; SGS, 60.9%; LGS, 1.3%; and LV, 3.2%. The final service allocators are residential, 83.7%; SGS, 13.4%; LGS, 0.8%; and LV, 2.1%. The results of each step are shown in Schedule JAB-RD1, an attachment to my direct testimony.

OTHER ALLOCATORS

Q. How did you allocate Land and Land Rights, Structures and Improvements, and Mains Plant (accounts 374, 375, and 376)?

A. For these accounts, I utilized the mains allocator that was developed by Ms. Hu.

Q. Please describe the allocators that you applied to the remaining distribution accounts.

A. I used total throughput to allocate Measuring and Regulating Station Equipment (accounts 378 and 379). I allocated Other Equipment (account 387) based on the allocation of all other previously allocated distribution plant.

Q. How did you allocate General Plant?

I allocated the General Plant accounts on the basis of each class's proportion of total company COS. In this way, the costs allocated to each class from these accounts correspond to the extent to which each class is responsible for the Company's overall costs.

Q. Within Operation and Maintenance expense, how did you allocate gas distribution expense?

A. I used the "expenses follow plant principle" for allocating most of the accounts in this category. For example, the allocator that I applied to Mains plant (account 376) was also applied to Mains maintenance (account 887).

Q. How did you allocate customer accounts expense?

A. I allocated meter reading expenses with the weighted customer allocator that the Staff developed in Case No. GR-93-240. These weights are 1.44 for SGS, 5.3 for LGS, and 8.76 for LV. Uncollectibles (account 904) are allocated based on COS. All of the remaining Customer Accounts Expenses were allocated based on the weighted-customer allocator that I used for meters.

Q. How were Customer Service and Sales Promotion expense allocated?

A. Customer Service accounts were allocated on the basis of unweighted customer numbers and Sales Promotion expenses were allocated based on my COS allocator. I chose to use my COS allocator for Sales Promotion expenses since these cost are incurred for the purpose of lowering the average margin cost (by increasing sales) of providing service to customers in each of the customer classes. The amount by which customers in each class benefit from a lower

average cost will be proportional to the share of overall costs of service per customer that they are responsible for incurring.

Q. How did you allocate Administrative and General (A & G) expenses?

A. I divide these expenses into three categories. I allocated Property Insurance expense (account 924) on the basis of net plant since this expense is linked to the amount of plant that the Company requires in order to serve each customer class. Injuries and Damages and Employee Pensions and Benefits (accounts 925 and 926) are both payroll related expenses so they were allocated on the basis of the amount of payroll expense that I had previously allocated to each class. I believe all remaining A & G accounts represent expenditures that support the Company's overall operation, so I have allocated them on the basis of each class's share of total Company COS.

Q. How did you allocate property and payroll taxes?

A. Property taxes were allocated on the basis of the amount of total plant that I had previously allocated to each class. Payroll taxes were allocated on the basis of the amount of payroll expenses that I had previously allocated to each class.

Q. How did you allocate state and federal income taxes?

A. These taxes are allocated on the basis of rate base since a utility company's income taxes are a function of the size of its rate base, and thus a class should contribute revenues for income taxes in accordance with the proportion of rate base that is necessary to serve it.

Q. Please describe the results of Public Counsel's COS study.

A. Public Counsel's COS study shows that the residential class is nearly at its cost of service. SGS and LGS customers are paying more than their cost of service and LV customers are paying less. Public Counsel witness Hong Hu will take the results of this study and discuss the appropriate rate design treatment. Schedule JAB-RD2 shows the results of Public Counsel's COS study.

Q. Does this conclude your direct testimony?

A. Yes it does.

OFFICE OF PUBLIC COUNSEL

Meter, Regulator, and Service Allocators

MGE Case No. GR-2001-292

Meters and Meters Installations

	Residential	SGS	LGS	LV	Total
Number of Customers	441,144	62,779	482	466	504,870
Meter/Customer Ratio	1.00	0.86	0.86	1.00	
Estimated Number of Meters	441,144	53,755	412	466	495,778
Meter Cost	$ 55.00	$ 243.00	$ 2,275.00	$ 5,617.25	
Inst Cost	$ 162.84	$ 162.84	$ 2,104.89	$ 6,472.08	
Average Meter Cost	$ 217.84	$ 405.84	$ 4,379.89	$ 12,089.33	
Weight	1.00	1.86	20.11	55.50	
Weighted Meter Count	441,144	100,147	8,292	25,843	575,427
Meter Allocation Factor	76.7%	17.4%	1.4%	4.5%	100%

Regulators and Regulator Installations

	Residential	SGS	LGS	LV	Total
Number of Customers	441,144	62,779	482	466	504,870
Regulator/Customer Ratio	0.99	0.99	1.00	1.00	
Estimated Number of Regulators	435,037	61,910	482	466	
Average Regulator Cost	$ 23.40	$ 290.00	$ 817.37	$ 2,009.53	
Weight	1.00	12.39	34.93	85.88	
Weighted Regulator Count	435,037	767,257	16,825	39,990	1,259,110
Regulator Allocation Factor	34.6%	60.9%	1.3%	3.2%	100%

Services and Service Installations

	Residential	SGS	LGS	LV	Total
Number of Customers	441,144	62,779	482	466	504,870
Service/Customer Ratio	0.99	0.99	1.00	1.00	
Estimated Number of Services	435,037	61,910	482	466	402448
Average Services Cost	$ 624.42	$ 701.82	$ 5,341.81	$ 14,524.80	
Weight	1.00	1.12	8.55	23.26	
Weighted Service Count	435,037	69,583	4,121	10,832	519,573
Services Allocation Factor	83.7%	13.4%	0.8%	2.1%	100%

* Average Services Cost for SGS are calculated based on an estimated distribution of 95% less than 2" pipes and 5% 2" pipes.

OFFICE OF PUBLIC COUNSEL

Cost of Service Study

MGE Case No. GR-2001-292

	TOTAL COST OF SERVICE SUMMARY:		TOTAL	RESIDENTIAL	SMALL GS	LARGE GS	LARGE VOLUME	UMGL
1	O & M Expenses		59,926,439	41,627,533	11,374,833	982,684	5,938,580	2,809
2	Depreciation Expenses		19,608,427	13,834,960	3,552,855	323,906	1,896,617	88
3	Taxes		17,895,135	12,184,816	3,391,451	320,453	1,998,358	57
4								
5	TOTAL - Expenses and Taxes		97,430,001	67,647,308	18,319,140	1,627,043	9,833,556	2,954
6								
7	Current Revenue (non-gas)							
8	Rate Revenue (non-gas)		137,312,799	94,228,285	28,515,452	2,992,701	11,573,361	3,000
9	Other Revenue	17	3,063,968	2,108,790	579,206	52,699	323,207	66
10								
11	TOTAL - Current Revenues		140,376,767	96,337,075	29,094,658	3,045,400	11,896,568	3,066
12	Current Revenue Percentage		100.00%	68.63%	20.73%	2.17%	8.47%	0.00%
13								
14	OPERATING INCOME		42,946,766	28,689,767	10,775,518	1,418,357	2,063,013	112
15								
16	TOTAL RATE BASE		486,933,326	328,778,107	93,203,306	8,893,805	56,056,452	1,656
17								
18	Implicit Rate of Return (ROR)		8.82%	8.73%	11.56%	15.95%	3.68%	6.78%
19								
20	OPC Recommended Rate of Return		8.75%	8.75%	8.75%	8.75%	8.75%	8.75%
21								
22	Recommended Operating Income With							
23	Equalized (OPC) Rates of Return		42,606,666	28,768,084	8,155,289	778,208	4,904,940	145
24								
25	Class COS at OPC's Recommended Rate of Return		140,036,667	96,415,393	26,474,429	2,405,251	14,738,495	3,099
26	Revenue Percentage		100.00%	68.85%	18.91%	1.72%	10.52%	0.00%
27								
28	Allocation of Difference Between Current							
29	Revenue and Recommended Revenue	17	(340,100)	(234,075)	(64,292)	(5,850)	(35,876)	(7)
30								
31	Margin Revenue Required to Equalize							
32	Class ROR - Revenue Neutral		140,376,767	96,649,468	26,538,721	2,411,101	14,774,371	3,106
33	Revenue Percentage		100.00%	68.85%	18.91%	1.72%	10.52%	0.00%
34								
35	Rev. Neutral Shift to Equalize Class ROR		(0)	312,393	(2,555,937)	(634,299)	2,877,803	40
36	Rev. Neutral Shift PERCENTAGE to Equalize Class ROR			0.33%	-8.96%	-21.19%	24.87%	1.33%
37								
38	Recommended Revenue Neutral Shift = 1/2 indicated shift		(0)	156,196	(1,277,968)	(317,150)	1,438,901	20
39	OPC Recommended Revenue Neutral Shift PERCENTAGE			0.17%	-4.48%	-10.60%	12.43%	0.67%
40	Class Revenue Percentages After Rec. Rev. Neutral Shift		100.00%	68.74%	19.82%	1.94%	9.50%	0.00%