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Issues: Rate Design
Witness: Anne E. Ross
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

DIRECT TESTIMONY

OF

ANNE E. ROSS

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

Jefferson City, Missouri
October 2006

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the matter of Missouri Gas Energy's Tariff Sheets Designed to Increase Rates for Gas Service in the Company's Missouri Service Area	))))	Case No. GR-2006-0422

AFFIDAVIT OF ANNE E ROSS

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Anne E. Ross, of lawful age, on her oath states: that she has participated in the preparation of the following Direct Testimony in question and answer form, consisting of 17 pages of Direct Testimony to be presented in the above case, that the answers in the following Direct Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true to the best of her knowledge and belief.

Anne E. Ross
Anne E. Ross

Subscribed and sworn to before me this 19th day of October, 2006.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942086

Susan L. Sundermeyer
Notary Public

My commission expires 9-21-10

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Q. Please state your name and business address.

A. Anne E. Ross, P.O. Box 360, Jefferson City, Missouri 65102.

Q. Are you the same Anne E. Ross who has previously filed Direct Testimony in this case?

A. Yes.

EXECUTIVE SUMMARY

Q. Please summarize your testimony.

A. Staff proposes that the Commission approve a fixed Delivery charge rate design for the Company's Residential customers that is designed to collect the Residential class' non-gas cost of service (CCOS). Staff recommends that the non-gas rates for the Small General Service (SGS) be changed by the percentage of the SGS class revenue requirement change. Staff believes that further analysis of the customers in the SGS class is needed to determine whether splitting the class into SGS and Medium General Service (MGS) classes will allow greater precision in allocating these customers' CCOS before determining an appropriate Delivery charge for the SGS customers. Staff recommends that the current rate structure for the Large General Service (LGS) and Large Volume Service-Sales and Transportation (LVS) be continued, and that all rate components be changed by the same percentage as each class' non-gas revenue requirement.

STAFF CLASS COST-OF-SERVICE INPUTS

Q. What inputs did you provide to Staff Witness Thomas A. Solt for use in the Staff class cost-of-service (CCOS) study?

A. I provided the LVS Transportation and Sales class' Ccf volumes and customer numbers. I also provided Ccf adjustments for the SGS and LGS class volumes. The LV volumes and customer numbers, and the adjustments to the SGS and LGS volumes and customer numbers are based on the same analysis as the revenue adjustments I sponsored in my prefiled direct testimony, filed on October 13, 2006.

RATE DESIGN CLASS REVENUE REQUIREMENT

Q. What are the customer classes that Staff is using in its rate design?

A. I designed rates for the following classes:

Residential

Small General Service

Large General Service

Large Volume Service – Transportation and Sales

This grouping is consistent with the way in which MGE's current rate classes are grouped.

Q. What is the source of class revenue requirements used for your rate design?

A. I used the class revenue requirements determined in the CCOS study performed by Staff witness Thomas A. Solt.

STAFF RESIDENTIAL RATE DESIGN PROPOSAL

I. MGE'S CURRENT RESIDENTIAL RATE DESIGN

Q. What is MGE's current Residential class rate design?

A. MGE currently has a "traditional" Residential rate design consisting of two components - a fixed monthly customer charge, which does not vary with usage, and a volumetric rate that is collected on a per Ccf basis. The customer charge is designed to approximately recover the direct costs of the equipment required to allow a single, specific customer to take service, such as their meter, regulator, and service line, as well as cover ongoing expenses related to meter-reading and customer service functions. The remainder of the Residential class' non-gas revenue requirement is collected on a per-unit rate based on weather-normalized class Ccf usage. Both the customer charge and commodity rate are calculated on an average-customer basis, and do not vary among Residential customers.

Q. What do you mean when you say "calculated on an average-customer basis?"

A. After the customer charge is determined, the revenues generated by the customer charges are removed from the class' revenue requirement, and the remaining costs are divided by the Residential class Ccfs (i.e., residential class weather-normalized volumes). This calculation ignores the usage level or pattern of specific customers, and instead results in a rate that, along with the customer charge, will collect the cost of serving a customer who uses exactly the average amount of gas used to set the rate.

Q. Does a customer who uses less than this average pay enough to cover the calculated cost to serve them?

A. No. Because a significant portion of the non-gas costs are included in the volumetric rate and this customer is using less than the average that was used to calculate that

rate, a customer who uses less than the average normalized level pays less than the cost to serve them.

Q. Does a customer who uses more than the average pay more than the calculated cost to serve them?

A. Yes. For the same reason that a customer that uses less than average does not pay all of the cost to serve them, under MGE's current rate design, a customer who uses more than the average normalized level pays more than the cost incurred to serve them.

Q. Is MGE's cost to provide service to a Residential customer who uses gas for cooking, space- and water-heating greater than the cost incurred to serve a Residential customer who uses natural gas only for cooking?

A. No. As I will discuss later in this testimony, the cost to serve both customers is the same.

II. STAFF RESIDENTIAL RATE DESIGN PROPOSAL

Q. What is Staff's proposal for the Residential class non-gas rate design?

A. For the Residential customers, Staff recommends recovering the entire amount of the non-gas costs in a single fixed monthly charge, which is called a Delivery charge in my testimony.

Q. Is the Staff Delivery charge similar to the 'delivery charge' specified on the Company's proposed tariffs, filed May 1, 2006?

A. No, it is not. Staff's Delivery charge corresponds to the charge which the Company is calling a 'Basic Service Charge', shown on Sheet 25 of the proposed Residential tariff filed on May 1, 2006. It is <u>not</u> the same as the Delivery Charge specified on the SGS,

LGS and LVS tariff sheets filed on May 1, 2006; MGE uses the term 'delivery charge' to describe a volumetric rate similar to the rate 1 discussed in the previous section.

Q. How did Staff calculate the Residential Delivery charge that it is recommending in this case?

A. The proposed Delivery charge was determined by dividing the Residential class revenue requirement calculated in the Staff CCOS by the annual number of bills.

Q. Why is Staff recommending that MGE collect all margin costs in a single monthly charge?

A. Staff believes that this rate structure will address two significant issues affecting the natural gas distribution market. Specifically, it will:

- Align the customers' and Company's interests by removing the disincentive for utilities to encourage and assist customers in making conservation and efficiency investments.
- Reduce the effect of weather on utility revenues and customer bills. This will provide utilities the opportunity to earn their Commission-ordered non-gas revenue requirement – no more and no less – and insure that Residential customers pay for the price of providing their service – no more and no less.

These issues have become important in large part due to changes in the natural gas markets over the last two decades.

III. THE VALUE OF CONSERVATION

Q. What have been some of the changes affecting the natural gas market?

A. The deregulation of the wholesale gas market has resulted in a price that is set by the forces of supply and demand, rather than a regulatory body. The supply of natural gas depends on the amount of production and availability of storage, and, as we saw in 2005, is vulnerable to unpredictable events, such as hurricanes. Domestic production is now less than domestic consumption, and storage capacity is considered by the Federal Energy Regulatory Commission to be inadequate[1] and as a result, not only are natural gas prices more volatile than in the past, they show little sign of falling to the low prices seen in the 1990's and before.

Nationwide, the Industrial sector's demand for natural gas has increased as a result of economic growth. In addition, electric utilities have come to rely more heavily on gas for their summer peaking generation. Not only have these two factors led to an overall increase in demand for natural gas, but they have fundamentally changed the seasonal pattern of demand for natural gas. Unlike residential and other small customers, industrial and electric utility customers use a significant amount of gas in the summer months. In the past, the demand for natural gas was much lower in the summer than in the winter; as a result, prices would drop below prices seen in the winter months. Local Distribution Companies (LDC) were able to use the "cheaper" summer gas to replenish gas in storage for use in the winter. The utility's customers benefited when these lower prices were passed on to them in the winter months. That strategy is becoming increasingly difficult to carry out, and consumers are seeing the effect of this in the commodity cost of the gas they consume.

Q. What can consumers and regulators do to influence the wholesale price of natural gas?

[1] "Commission finalizes rules on market-based rates for interstate natural gas storage facilities," FERC Press Release dated June 15, 2006

A. There is little that consumers can do to affect the wholesale price of natural gas. State regulators insure that LDCs are making strong efforts to procure their gas supply at the best possible price by conducting prudency reviews of the LDCs' purchasing and hedging actions; outside of this, there are few actions that can be taken.

Q. Is there *anything* that consumers and regulators can do?

A. Yes. While the supply of natural gas is outside the control of these stakeholders, there are actions that can be taken to reduce demand – namely weatherization and other energy efficiency investments, which I will group under the umbrella term of conservation measures or simply conservation.

Q. How do conservation measures affect natural gas prices?

A. Conservation affects gas prices on both a micro and macro level. On the micro level, while conservation does not lower the per-unit price that one household is paying vis-à-vis another household, the household that has implemented conservation measures pays less in total to meet its requirements. On the macro level, a decrease in natural gas usage will exert downward pressure on the wholesale price of natural gas. In November, 2005, the National Association of Regulatory Utility (NARUC) Commissioners adopted a *Resolution on Energy Efficiency and Innovative Rate Design*, which stated that "Energy conservation and energy efficiency are, in the short term, the actions most likely to reduce upward pressure on natural gas prices and to assist in bringing energy prices down to the benefit of all natural gas consumers."[2]

Q. Do LDCs such as MGE benefit when the wholesale price of gas is higher?

[2] "Resolution on Energy Efficiency and Innovative Rate Design," National Association of Regulatory Utility Commissioners, 2005 Summer meeting

A. No. The price of gas is directly passed through to the utilities' customers using the Purchased Gas Adjustment (PGA) mechanism, so the utilities' revenues do not fluctuate when natural gas prices change.

A. Why, then, do utilities have a disincentive to encourage customers to lower their natural gas usage?

A. While utilities do not earn a profit on the actual cost of the gas they procure for their customers, traditional rate design which includes recovering some of the fixed costs of serving customers on a volumetric basis has the effect of directly tying LDC profits to the amount of gas that they deliver to customers. The utility's cost to serve its customers is fixed and does not fluctuate with the amount of gas its customers use; therefore, each unit delivered to customers contributes to the recovery of the fixed costs, and once these fixed costs are recovered, each additional unit of gas delivered to customers increases the profit to the utility. The result is that the LDC is rewarded for delivering as much natural gas as possible. The gas utility is acting contrary to its shareholders' interests if it encourages its customers to use less gas.

Q. How does a fixed Delivery charge rate design affect that disincentive?

A. By breaking the link between sales and profits, the utility does not increase profit when its customers use more gas, nor does it lose revenue when customers use less. This is often called revenue *decoupling*.

IV. THE EFFECT OF WEATHER ON UTILITY REVENUES AND CUSTOMER BILLS

Q. Under traditional rate design, how does weather affect customer bills and utility profits?

A. In the short-term, this rate structure means that in every year in which the weather is not statistically normal, there is a "winner" and a "loser." In winters that are warmer (i.e., contain less Heating Degree Days than the weather used to set rates), the customer "wins" by paying less than the utility's actual cost of serving them. Under this weather scenario, the utility "loses" by under-collecting its cost of service.

If a winter contains more Heating Degree Days than the statistically normal winter used to set rates in the last rate case, the customer "loses" by paying more than the true non-gas cost to serve them. The utility "wins" by over-collecting non-gas costs.

Q. What happens in the long-term?

A. Everybody loses. If usage is less than expected, the utility does not recover the Commission-approved cost of serving their customers. As a result, the financial health of the company suffers. The utility's rating or stock price could decrease, making it more expensive to attract capital. Since the cost of a utility's capital is an expense that is paid for in rates, this ends up being an issue in a succeeding rate case, and could result in higher rates for future customers.

If usage is greater than expected, the customer pays an excessive amount for the service they are receiving from the utility. Given that weather is unpredictable, this can be a financial burden to many customers. In addition, in a "cold" winter, the company over-collects its cost of service, exposing it to the threat of Commission action.

V. HOW DOES DECREASED RESIDENTIAL CUSTOMER USAGE AFFECT UTILITY INVESTMENT AND EXPENSE LEVELS?

Q. If its customers use less natural gas, either in response to a warm winter, or because of the customer's conservation efforts, won't the utility be able to lower its investment in plant and equipment?

A. No, not necessarily. As plant and equipment is replaced, it is conceivable that the utility could downsize its investment – put in a distribution main with a smaller diameter, replace a meter with a lower-capacity meter, and so on. There are formidable obstacles to this process, though.

First, a vast majority of the utility's investment in plant used to serve its customers consists of assets which are expected to be used and useful for many years. Schedule 1 is a summary of the imputed service life of MGE' Distribution Plant accounts, which provides some indication of the assets' expected average useful service life. I have been informed by Staff experts on depreciation that the service lives shown on this schedule are not unusual for Missouri LDCs. From Schedule 1, one can see that it is possible that replacement of a piece of plant or equipment might not be necessary for around 40 years; in the meantime, the original equipment is in rate base and its cost included in customer rates.

Second, there is a lower limit on how small this equipment can be sized. A customer who is using natural gas only for cooking will require the same meter as one who is heating their home with natural gas, because both are served with the Company's smallest meter and service line available. As long as a Residential customer uses gas for <u>any</u> purpose, the Company must invest in customer-specific equipment such as meters, regulators and service lines, as well as in shared infrastructure, to serve that customer. The direct link between the existence of a customer and the need for a meter is very straightforward; note that the utility must make investments to other components of its rate base regardless of the customer's usage. The utility will still need mains, measuring and regulating equipment, rights of way, etc., to serve its customers.

Q. Will the utility's expenses drop if their customers are using less gas?

A. No. While it is true that a utility's costs associated with customer billing, assistance, and meter-reading will decrease when the *number of customers* decrease, that is not true if each customer's *usage* decreases. Regardless of the amount of gas used by individual Residential customers, the same number of bills must be mailed, meters read, and customers assisted. Many of the utility's other expense items, such as Operation and Maintenance expense, are tied to the plant investment, so these expenses will suffer from the same delayed reaction to usage decreases as the plant discussed above.

Q. Let's look at two hypothetical customers – both Residential customers with the same size dwelling, who are located side by side. Customer A is using natural gas only to cook, while Customer B is using natural gas for cooking, space-heating and water-heating. Would the cost of delivering the natural gas to these two customers be the same?

A. Yes.

Q. Under a traditional rate design, with a customer charge and volumetric rate, will the revenues received from the two customers to collect the non-gas cost to serve them be the same?

A. No. The revenue received from Customer A will be lower than the revenue received from Customer B.

Q. Is it conceivable that the revenue received from Customer A will be less than the cost to serve them, and the revenue received from Customer B greater than the utility's cost to serve them?

A. It is not only conceivable, but is happening with the current rate structure to real, not hypothetical, Residential customers. As I pointed out earlier, rates are set based on an average customer's normalized usage, so a customer that uses less than the normalized

average level will pay less than the cost required to serve them, and a customer using more will pay more than the cost required to serve them.

Q. Can this break-even point be calculated?

A. Yes. Using the Company's current Residential rates, the Staff's billing units for the St. Joseph, Kansas City, and Joplin areas, and a Delivery charge designed to collect the same per-customer revenue on an annual basis, I calculated the break-even CCF usage level at which both rate designs would collect the same annual revenue per customer. The break-even usage at which a customer's revenues exactly equal the cost to serve them is 853 Ccfs per year.

Customers with annual usage that is lower than this break-even point are underpaying their cost of service; in fact, they are being subsidized by customers with annual usage that is greater than the break-even level. This intra-class subsidy has been present for as long as the current rate structure has been used, and will continue until the costs are recovered with a more fair and equitable Delivery charge mechanism.

Q. Are states looking at ways to address the issues that you have described?

A. Yes. The NARUC Resolution that I referenced earlier calls for "State commissions and other policy makers to review the rate designs they have previously approved to determine whether they should be reconsidered in order to implement innovative rate designs that will encourage energy conservation and energy efficiency." A May 2006 forum entitled "Rethinking Natural Gas Utility Rate Design," sponsored by the American Gas Foundation and NARUC Education and Research Foundation brought together representatives of the major stakeholders – state commissioners, utilities, financial analysts, utility consultants, and consumer advocates – to discuss ways in which the stakeholders'

interests can be more closely aligned. A recent Financial Regulatory Institute symposium in Columbia focused on these issues, as well. This is just two examples of forums in which the issue is under discussion.

Q. What is the monthly Delivery charge that you are recommending for MGE's Residential customers?

A. The monthly delivery charge that would recover the cost of serving MGE's Residential customers' cost-of-service is $23.48. This calculation includes the Commission Staff's recommended revenue requirement.

Q. Do you believe that customers will object to paying a fixed amount each month, rather than the variable amount that they are used to paying?

A. Yes. As with any change, there will be some resistance. Intensive consumer education will need to be conducted to explain the role of the LDC and the nature of distribution costs. Currently I believe that most Residential customers do not understand that they are paying the LDC for the *delivery service* it provides, rather than the gas that the customer is consuming, and the practice of collecting margin rates in a volumetric charge increases that confusion. Customers may, therefore, believe that it is unfair that part of their bill does not decrease when their usage decreases, whether it's due to conservation or warm weather. Staff notes that customers are used to this type of payment structure for other goods and services. Basic cable television, local phone service, and trash pickup have a similar type of charge, and most consumers appear to accept this.

In fact, one advantage of this form of rate is that it is easy to explain to customers, as it provides the correct price signal. Unlike most other revenue decoupling rate designs, the rate

being charged to customers will not change on a monthly basis, nor will the consumer see his rate increase due to conservation steps he has taken.

Q. Won't paying a fixed charge decrease the customer incentive for conservation?

A. No. The actual cost of the natural gas used by the customer is 60%-75% of their total bill, and this component will continue to be sensitive to changes in usage.

Q. Do you have any comments on actions that could be taken to assist customers' conservation efforts?

A. I do. Along with education, the utility, Commission, Office of Public Counsel (OPC), and Department of Natural Resources (DNR) should actively promote and support customer conservation efforts – with access to funds, information, and advocacy.

Q. What types of programs would help low-income customers implement conservation measures?

A. Low-income households, who often live in inefficient or substandard housing, will benefit from both weatherization and conservation measures, such as window or furnace replacement.

Q. Is there a weatherization program for low-income Missouri households?

A. Yes. Households with income at 150% or less of the Federal Policy Guideline are eligible for the Low Income Weatherization Assistance Program, which is administered by the DNR using federal and state funding, and performed by weatherization personnel at each of Missouri's Community Action Agencies. In addition, most of the natural gas utilities in Missouri provide funds for this purpose. MGE is and has been a leader in this respect.

Q. In terms of making self-funded conservation investments, what do you see as a major obstacle for both low and moderate income households?

A. I believe that one major stumbling block for these groups is access to the up-front funds needed to make the investments.

Q. What type of up-front expenses?

A. First, there are often up-front costs needed to determine the investment(s) that will provide the greatest return per dollar invested. This will be specific to each household, and can range from a questionnaire or quick walk-through to a thorough analysis using a blower-door test and computer analysis. I am a member of Missouri's Weatherization Advisory Policy Committee, and have learned that these inspections can cost from $50 - $200 dollars per household, depending on the party performing the evaluation and the equipment used. A household with little disposable income will find it difficult, if not impossible, to pay this amount, even though the lowered bills resulting from conservation will be realized soon after making these cost-effective investments.

Second, the investment itself, as well as any additional expenses incurred to install it, must be paid for. This money will often need to be borrowed. Low and moderate income households might have limited access to borrowing merely because of their level of household income. These households are stuck between a rock and a hard place. They are unable to take an action that will result in a higher level of disposable income because they have little disposable income.

Q. What type of program might help these households?

A. Low and moderate income households could benefit from programs that provide grants or loans for those up-front funds needed to make cost-effective conservation investments. In its last rate case, Laclede Gas Company agreed to set up a program that capitalized the cost of inspections and down payment required by their EnergyWise program.

Q. Do you know of any other factors that might affect customers' conservation decisions?

A. Yes, I do. Customers who are renters will have different motivations than those who own their homes, as the long-term value of these conservation investments may not accrue to them. Likewise, there is a basic conflict between the motivation of renters and landlords, especially if the landlords do not pay the utility bills. This will have to be considered when discussing an effective program design.

Q. Do you have any final comments regarding the Staff's proposed Residential Delivery charge rate design?

A. Yes. Once the utility's concern regarding revenue loss due to lowered sales has been addressed, the utility should be a creative, active and knowledgeable leader in this effort. They are in a unique position to identify customers who could benefit from conservation efforts, for example, households with higher than normal usage that are having trouble paying their utility bills. By assisting and educating these customers, the utility will likely benefit their entire customer base.

NON-RESIDENTIAL CLASSES RATE DESIGN RECOMMENDATIONS

Q. Does Staff propose a Delivery charge rate design for the SGS customers?

A. No. While I believe that this type of rate structure would be appropriate for the smaller customers in the SGS class, I believe that the diversity in size and usage patterns among the SGS customers makes it impossible to determine a fair Delivery charge for all customers that are currently taking service on that tariff. I recommend that the customers in this class be studied more closely to see if it is appropriate to split this class into two or more groups – for example, a group composed of smaller customers with usage characteristics

similar to those of the Residential customers, and another group composed of customers that are more similar to the larger commercial and industrial customers.

Q. In the absence of this type of information on the SGS customers, what is your rate design proposal for the Company's Small General Service tariff class?

A. I propose that the SGS class' revenue requirement be collected by increasing each rate component by the percentage increase of the class revenues.

Q. What is your proposal for the LGS class rate structure?

A. I believe that each component of the LGS customers' rates should be increased at the percentage recommended for this class in the Staff's class CCOS study.

Q. What is your proposal for the LVS class rate structure?

A. I believe that each component of the LVS customers' rates should be increased at the percentage recommended for this class in the Staff's class CCOS study.

Q. Does this conclude your direct testimony on rate design?

A. Yes.

CASES FILED BEFORE MO PUBLIC SERVICE COMMISSION

CASE NO.	COMPANY
GR-90-50	Kansas Power and Light
GR-90-120	Laclede Gas Company
GR-90-152	Associated Natural Gas
GR-90-198	Missouri Public Service Gas
GR-91-249	United Cities Gas Company
GR-91-291	Kansas Power and Light
GR-92-165	Laclede Gas Company
GR-93-42	St. Joseph Light and Power - Gas
GR-93-47	United Cities Gas Company
GR-93-172	Missouri Public Service Gas
GR-93-240	Western Resources
GR-94-0220	Laclede Gas Company
GA-94-0127	Tartan Energy Company
GR-95-0160	United Cities Gas Company
GR-96-0193	Laclede Gas Company
GR-96-0285	Missouri Gas Energy
GR-99-0042	St. Joseph Light and Power - Gas
GR-2002-0356	Laclede Gas Company
GR-2003-517	AmerenUE - Gas
GR-2004-0072	Aquila Networks - Gas
GR-2004-0209	Missouri Gas Energy
GR-2005-0284	Laclede Gas Company
GR-2006-0387	Atmos Energy Corporation