Exhibit No.:	
Issues:	Revenue Stabilization Mechanism; Residential Rate Design
Witness:	Martin R. Hyman
Sponsoring Party:	Missouri Department of Economic Development – Division of Energy
Type of Exhibit:	Rebuttal Testimony
Case Nos.:	GR 2017-0215; GR-2017-0216

MISSOURI PUBLIC SERVICE COMMISSION

SPIRE MISSOURI INC.

CASE NO. GR-2017-0215
and
CASE NO. GR-2017-0216

REBUTTAL TESTIMONY

OF

MARTIN R. HYMAN

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri
October 20, 2017

(Rate Design)

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Laclede Gas Company's Request to Increase Its Revenue for Gas Service	))	**File No. GR-2017-0215** Tariff No. YG-2017-0195
In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenues for Gas Service	)))	**File No. GR-2017-0216** Tariff No. YG-2017-0196

AFFIDAVIT OF MARTIN HYMAN

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

Martin R. Hyman, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Martin R. Hyman. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development as a Planner III, Division of Energy.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony (Rate Design) on behalf of the Missouri Department of Economic Development – Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.

Martin R. Hyman

Subscribed and sworn to before me this 20th day of October, 2017.

LAURIE ANN ARNOLD
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: April 26, 2020
Commission Number: 16808714

Notary Public

My commission expires: 4/26/20

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Martin R. Hyman. My business address is 301 West High Street, Suite 720, PO Box 1766, Jefferson City, Missouri 65102.

Q. By whom and in what capacity are you employed?

A. I am employed by the Missouri Department of Economic Development – Division of Energy ("DE") as a Planner III.

Q. Have you previously filed testimony before the Missouri Public Service Commission ("Commission") in this case?

A. Yes.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your Rebuttal Rate Design Testimony in this proceeding?

A. The purpose of my testimony is to continue my discussion of the Revenue Stabilization Mechanism ("RSM") proposed by Laclede Gas Company ("Laclede") and Laclede Gas Company d/b/a Missouri Gas Energy ("MGE") (collectively, "Companies" or "Spire")[1] in these cases. My discussion builds on the Direct Revenue Requirement Testimony that I filed in this case by assessing the relationship of the Companies' proposed RSM to rate design issues; if the Companies' RSM proposal is approved, DE recommends both the efficiency proposal addressed in my Direct Revenue Requirement Testimony and the rate design proposals below.

[1] The Commission recently recognized that Laclede and MGE have changed their name to "Spire Missouri Inc. d/b/a Spire" and approved the adoption by Spire Missouri Inc. of the Companies' tariffs. See Missouri Public Service Commission File No. GN-2018-0032, *In the Matter of Laclede Gas Company and Missouri Gas Energy Changing Name to Spire Missouri, Inc. d/b/a Spire*, Order Recognizing Name Change, August 16, 2017.

I also respond to the residential rate design proposals of the Companies and the Commission Staff ("Staff"), as well as to National Housing Trust witness Ms. Annika Brink's Direct Testimony on rate design. Based on my bill impact analyses of Spire's residential rate design proposals, DE recommends that the Commission order Laclede to create a transitional tail block rate to mitigate bill impacts on residential customers with high winter usage. Depending on the bill impacts resulting from any revenue requirement increase ordered by the Commission, DE supports the residential inclining block rates offered by Staff. However, DE does not support Staff's residential customer charge proposals. To facilitate comparisons of the rate designs offered by Spire and Staff, DE recommends that the Commission order these two parties to model the bill impacts of their rate designs at their competing revenue requirements.

Q. What did you review in preparing this testimony?

A. I reviewed the Direct Testimony filed by Spire's witnesses in this case, relevant portions of Staff's Class Cost of Service report, Ms. Brink's Direct Testimony, Staff's response to Data Request DED-DE 211, Spire's response to Staff Data Request 0256, and parts of various case-related filings in this and previous natural gas rate cases, as cited below.

III. REVENUE STABILIZATION MECHANISM

Q. Please summarize the discussion of the RSM provided in your Direct Revenue Requirement Testimony.

A. The RSM – also known as "decoupling"[2] – is a ratemaking tool through which the Companies, under their proposal, would be provided with greater assurance of meeting

[2] More properly, the RSM could be referred to as "limited decoupling" under a definition from the Regulatory Assistance Project, since the RSM would only adjust for specific factors that cause variations in usage. See Regulatory Assistance Project, 2016, *Revenue Regulation and Decoupling: A Guide to Theory and Application*,

their revenue requirements. As its alternative name suggests, the RSM would partially "decouple" sales volumes of natural gas from the revenues earned by the Companies, and would be applicable only to residential and small commercial customers.[3] According to the Companies, changes in sales and revenue related to weather and changes in customer use due to conservation[4] would be adjusted on a periodic basis,[5] with customers receiving either volumetric bill credits or surcharges to account for under- or over-collection of the Companies' revenue requirements.[6] Conceptually, the RSM addresses revenue variations due to other factors (such as changes in the economy), but this is somewhat mitigated by the use of per-customer adjustments[7] and the replacement of Laclede's weather mitigation rate design (which creates a similar result). The RSM is authorized by Section 386.266.3, RSMo.

Q. From the rate design perspective, why is the RSM a potential alternative to other options?

A. First, the RSM avoids the need to use a weather mitigation rate design or a straight-fixed variable rate design. The former option places an increased emphasis on cost recovery through the initial winter block of volumetric use. For customers that heat their homes with

http://www.raponline.org/wp-content/uploads/2016/11/rap-revenue-regulation-decoupling-guide-second-printing-2016-november.pdf, pages 12-13.

[3] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Direct Testimony of Scott A. Weitzel, April 11, 2017, page 20, lines 16-21.

[4] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Direct Testimony of Glenn W. Buck, April 11, 2017, page 11, lines 12-15.

[5] *Ibid*, page 13, lines 1-8.

[6] GR-2017-0215 and GR-2017-0216, Weitzel Direct, pages 20-21, lines 22-23 and 1-10.

[7] *Ibid*, page 22, lines 11-15.

natural gas, even relatively moderate use during the winter would experience bill impacts similar to those under a straight-fixed variable rate design. The RSM would allow the Companies to implement rate designs that better encourage energy efficiency through lower fixed charges and – in Laclede's case – movement away from declining block rates. Second, as described in my Direct Revenue Requirement Testimony, Laclede's Purchased Gas Adjustment ("PGA") and Actual Cost Adjustment ("ACA") mechanisms are structured to change in the winter concurrently with the base winter block rates; the first block of base winter volumetric charges also includes PGA-related costs. This approach creates the weather mitigation rate design, but the variation in PGA/ACA rates does not necessarily reflect any consumption-related changes in the costs of purchased gas. The RSM would better align Laclede's PGA/ACA mechanisms with the incurrence of underlying costs – i.e., the costs of purchased gas.

Finally, the RSM would not represent any more of a disruption to customers' understanding of their bills in comparison to the current Laclede rate design. However, customer education would be needed to address the reasons for the implementing the RSM.

Q. You mentioned that the RSM is an alternative to the use of other rate design options. Is there evidence that some customers prefer the use of volumetric rates and/or do not support high fixed charges?

A. Yes. For example, at the local public hearing ("LPH") for these cases that was held in Independence, one customer testified:

> I suggest that you decrease the service charge even more even if you adjust the overall rates in some way because the service charge is what affects low income people the most. So reducing it from the $25 which is being proposed to $20, bring

> it down even further to 15 or 10, and that will impact even greater low income people.
>
> I looked at my bill this last month. Fifty percent of my bill was on the service charge. I think the service charge is what we ought to be looking at because that's what is impacting the low income users and low use users.[8]

Customer comments on rate design have also been registered through the Commission's Electronic Filing and Information System. One entry reads:

> Any granted increase should be strictly from increases to the per therm rate (natural gas cost and/or delivery of natural gas) – NOT to the monthly "customer charge" nor the "[Infrastructure System Replacement Surcharge]". Based on current rates my monthly "fixed" charges + tax = $25.20 before I use any gas (which is already excessive). Increases to the rate for therms would give people an incentive to conserve fuel and is more of a controllable cost. …[9]

Another entry states:

> MGE's delivery cost collection method per the "customer charge" billing item is not equitable to your customers who practice conservation of their energy (gas) usage, ex. shorter showers, lower heating setting. Use your capabilities and software to build into the CCF usage (including the requested increase) all your

[8] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Transcript Vol. 4, September 21, 2017, pages 112-113, lines 15-25 and 1.

[9] Missouri Public Service Commission Case No. GR-2017-0215, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service*, Public Comments, Public Comment No. P201800732.

> cost so conservation is encouraged and rewarded. Thank you for your consideration to this monthly frustrating concern. …[10]

The customers cited above have expressed a strong preference for volumetric rates and/or against higher customer charges; the first customer cited above notes the impacts of higher fixed charges on lower use and lower income customers, while others cited above indicate that they believe they should pay based on usage to support energy efficiency or conservation.

Q. Were there other customers who did not support an emphasis on volumetric rates?

A. Yes. One customer testified:

> … Some of the concerns that I have that were partially addressed in the question and answer, but not fully addressed, involved the comment – or I guess the strategy to raise the rates per therm based on usage.
>
> One of the concerns I have that I think is shared with others is that some people may not be able to use less and still be comfortable in their household. So I think there's a concern that the rate increase will only take heat away and not allow folks who are trying to, yes, save on costs, but be comfortable in their homes; similar to what I think another person mentioned about doing dishes with a coat on.[11]

Another customer stated:

[10] Missouri Public Service Commission Case No. GR-2017-0216, *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Public Comments, Public Comment No. P201800318.

[11] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Transcript Vol. 8, October 3, 2017, page 205, lines 7-19.

> … When I was talking to the representative for Spire, I'll use the proper name, he indicated he wanted to lower the amount for monthly costs and we were talking like $20 down to 17, but increasing the amount of usage. I'm against the increase of usage because in the winter months my gas bill is a lot higher by 40 or $50 over the usage. I think it's 180 is the highest I had last year. So, what I'm saying is if there's anything to be reduced or increased, not the basic. Basic, they may increase it a dollar or two, but don't let them do the usage because the usage is what – is where they're going to make their offset profit. …[12]

I recognize that there are certain customers who have concerns about an emphasis on volumetric rates. On balance, however, the use of volumetric rates for cost recovery still addresses other customers' concerns while encouraging energy efficiency and mitigating bill impacts on low-use and low-income customers.

Q. Have you reviewed other materials relevant to what customers think of their bills?

A. Yes. In response to Data Request DED-DE 211, Staff provided DE with copies of consumer complaints and inquiries from the effective dates of the Companies' most recent residential rates.

Q. Why did you review customer complaints and inquiries with respect to the current rates of the Companies?

A. Given that Spire has proposed a RSM, I wanted to gauge customer reactions to Laclede's weather mitigation rate design and to MGE's customer charge, particularly since MGE has

[12] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Transcript Vol. 9, October 5, 2017, pages 240-241, lines 20-25 and 1-8.

moved away from straight-fixed variable rates. My review showed that there were relatively few complaints about Laclede's weather mitigation rate design or MGE's customer charge levels.

Q. Please provide more detail on what you found in your review of these customer complaints and inquiries.

A. People contact Staff with many different types of concerns, such as disconnections, estimated bills, and payment plans. However, there were not many complaints or inquiries as to rate design in what Staff provided. Although there were some complaints that mentioned aspects of rate design, few Laclede customers mentioned aspects of rate design that relate to its weather mitigation rate design, and only a small number of MGE customers mentioned aspects of its current rate design. By comparison, in GR-2009-0355, Staff witness Ms. Carol Gay Fred testified that upon full implementation of MGE's straight-fixed variable rate design, there was a noticeable in customer complaints and inquiries as to what the Commission Chairman called "customer happiness over bills," attributable in part to customer confusion about the rate design;[13] this is significant given that MGE transitioned away from the straight-fixed variable rate design in its next rate case, and that I found relatively few complaints or inquiries as to MGE's current rate design.

Q. What is DE's position on the RSM?

A. DE is not opposed to the use of an RSM provided that: 1) Spire increases energy efficiency spending per the recommendation in my Direct Revenue Requirement Testimony, and 2) the Commission accepts the rate design proposals described below.

[13] Missouri Public Service Commission Case No. GR-2009-0355, *In the Matter of Missouri Gas Energy and its Tariff Filing to Implement a General Rate Increase For Natural Gas Service*, Transcript Vol. 13, November 2, 2009, pages 790-794, lines 15-25, 1-25, 1-25, 1-25, and 1-5.

IV. RATE DESIGN ISSUES

A. GENERAL CONSIDERATIONS

Q. What are some of the principles involved in evaluating alternative rate designs?

A. There are many factors to consider when evaluating rate design proposals. Some of the chief considerations involve inducing efficiency, maintaining gradualism, ensuring affordability, and relating rates charged to the costs incurred by their causers ("cost-causation"). Rate designs should also be easy to understand for customers.

Q. What are the typical components of the Companies' residential natural gas bills?

A. Currently, the Companies' Missouri residential customers are charged through four components. The first is a "customer charge," a fixed monthly amount that represents the costs incurred for connecting an individual customer to the utility's system irrespective of usage. Additionally, customers are billed for the Infrastructure System Replacement Surcharge ("ISRS") on a non-volumetric basis. This charge covers the costs of eligible distribution system replacements and is authorized by Sections 393.1009 through 1015, RSMo. The third component is the volumetric charge in base rates. Laclede's current base volumetric charges decline after thirty therms of use (i.e., a "declining block rate"), while MGE's current volumetric charges are flat and billed by hundred cubic feet ("ccf") of consumption (i.e., a "flat block rate"). Finally, the PGA/ACA mechanisms recover the commodity costs of gas purchased by the Companies for distribution to their customers.[14]

[14] The Commission Staff describes the PGA and ACA in Missouri Public Service Commission Case No. GR-2014-0007, *In the Matter of Missouri Gas Energy Inc.'s Filing of Revised Tariffs to Increase its Annual Revenues for Natural Gas*, Staff Report – Revenue Requirement Cost of Service, January 29, 2014, page 58, lines 22-27. The PGA is mentioned in portions of the Commission's rule on service and billing practices for residential customers 4 CSR 240-13 and in the Commission's rules on natural gas price volatility mitigation at 4 CSR 240-40.018(1)(B), but does not appear explicitly in statute.

The PGA/ACA costs are also recovered on a volumetric basis. Laclede's current PGA/ACA charges vary by season and block due to its "weather mitigation rate design," while MGE's current PGA/ACA charges do not vary by block or season. Overall, the total volumetric charges (i.e., base and PGA/ACA charges combined) for Laclede produce a declining block rate, while MGE's total volumetric charges per ccf do not change with season or level of usage. The Companies' rate designs are provided in tables in the next subsection of my testimony.

Other classes may have different billing components based on factors such as demand.

Q. How do general rate design considerations affect the determination of customer charges?

A. Customer charges traditionally represent the costs for a utility to serve an additional customer regardless of usage. Since it is a fixed charge, the customer charge cannot be avoided by customers absent disconnection from a utility's system. Consequently, customer charges do not encourage efficient usage and have disproportionate impacts on low-use customers and low-income customers as a group. In this latter regard, I agree with Ms. Brink's testimony.[15]

Q. Are there cost-based justifications for flat or inclining block rates?

A. Yes. There is a general claim that a low customer charge necessitates the recovery of "fixed" (in the accounting sense) costs through the first block of volumetric rates. However, the long-run view of utility costs is that they are all variable – lower demand results in

[15] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Direct Testimony of Annika Brink on Behalf of National Housing Trust, September 22, 2017, page 4, lines 6-13.

lower plant investment, though to a lesser extent in the natural gas utility industry than the electric utility industry. The recovery of historic costs, while important for utilities, should not "lock in" future utility spending decisions by encouraging higher use (and a subsequent need for greater investment in plant). Not only can inclining or flat block rates be used to recover short-run "fixed" costs, but they can also reflect that higher use leads to higher bills because of the need for greater plant investment; this efficiency-inducing signal will reduce future rate increases and provide benefits to all customers.

Q. How do different volumetric rate designs affect low-use, low-income, and space heating customers?

A. The effects of volumetric rate designs on low-use and low-income customers depends on the specifics of the rates. Generally, however, low-use and low-income customers would fare the worst under declining block rate designs, since they would be paying more per unit of energy than high-use customers (and, consequently, paying disproportionately more for short-run "fixed" costs than high-use customers). By contrast, space heating customers (who generally use more natural gas than customers that use other energy sources for space heating) benefit more from declining or flat block rates. Based on these considerations, an appropriately designed inclining block rate would set the first, lowest charge block such that it charged for the most basic amounts of usage (e.g., some space heating, cooking). Alternatively, a flat block rate eliminates this required consideration of appropriate usage blocks and establishes a balance between space heating needs and efficiency-inducing price signals.

Q. You have mentioned low-use and low-income customers together several times. Is there evidence that low-income customers tend to use less natural gas?[16]

A. Yes. Regional data from the federal government show that, on average, low-income households in the Midwest generally use less natural gas than non-low-income households. The same data show that customers receiving assistance through the Low Income Home Energy Assistance Program ("LIHEAP") use more natural gas than the general low-income population,[17] which is a logical outcome of receiving a fixed bill credit.

Q. What do you mean when you reference "gradualism?"

A. "Gradualism" refers to the concept that rates should not change suddenly, minimizing customer confusion and bill impacts. This is closely related to the avoidance of "rate shock."

Q. Why is customer understanding of rate designs important?

A. When customers understand their rate designs, they more readily can link changes in their usage to their overall bills and to the incurrence of underlying costs. Customer comprehension of rate design is thus important for ensuring that customers receive "price signals" as to their consumption choices. Simpler rate designs are easier to understand, and education can help with customer comprehension as well. I discussed customers' perceptions of the Companies' current rate designs in the previous section of my testimony.

[16] See also Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Direct Testimony of Sharlet E. Kroll on Behalf of Missouri Department of Economic Development – Division of Energy, September 8, 2017, pages 20-23, lines 1-18, 1-19, 1-8, and 1-3.

[17] U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance, 2016, *LIHEAP Home Energy Notebook For Fiscal Year 2014*, Appendix A, Table A-2, page 95, https://www.acf.hhs.gov/sites/default/files/ocs/hen_final_508_compliant_fy14.pdf.

Q. Please summarize your discussion of rate design.

A. Rates should be set in a manner that induces efficiency, maintains gradualism, ensures affordability, and reflects cost-causation. This is best accomplished through low customer charges that only recover costs to serve individual customers irrespective of usage, as well as through flat or inclining volumetric rate designs that account for basic customer usage. Additionally, rate designs should be understandable to customers.

B. SPIRE'S RATE DESIGN PROPOSALS

Q. What has Spire proposed with respect to residential rate designs?

A. As shown below in Tables 1 and 2 for Laclede and Tables 3 and 4 for MGE, Spire has proposed flat volumetric rates. Spire proposes different rates for before and after the implementation of the RSM. Prior to the implementation of the RSM, the Companies' proposed customer charges would be similar to the respective sums of their current customer and ISRS charges. Following the implementation of the RSM in October of 2018, the Companies' proposed customer charges would be lower than the respective sums of their current customer and ISRS charges, with corresponding increases to their respective base volumetric charges. Laclede would also abandon its seasonal rate differences. Finally, it should be noted that, under Spire's proposal, MGE would move to billing based on therms rather than ccf; the comparisons below thus present MGE's volumetric rates on a per therm basis.[18]

[18] MGE's volumetric billing units were converted to therms from ccf using the U.S. Energy Administration Information's conversion factor of 1.037 therms per ccf; see U.S. Energy Information Administration, 2017, "What are Ccf, Mcf, Btu, and therms? How do I convert natural gas prices in dollars per Ccf or Mcf to dollars per Btu or therm?," https://www.eia.gov/tools/faqs/faq.php?id=45&t=8.

Table 1. Laclede's current[19] and proposed[20] residential rates.

			Current	Proposed (pre-Oct 18)	Proposed (Oct 18 forward)
Winter (November - April)	Customer Charge		$19.50	$23.50	$17.00
	ISRS		$3.94	$0.00	$0.00
	Volumetric Charge (per therm)	First 30 therms	$0.91686	$0.28286	$0.37962
		Over 30 therms	$0.00000	$0.28286	$0.37962
	PGA/ACA (per therm)	First 30 therms	$0.34611	$0.47767	$0.47767
		Over 30 therms	$0.59022	$0.47767	$0.47767
	Total Fixed		$23.44	$23.50	$17.00
	Total Volumetric (per therm)	First 30 therms	$1.26297	$0.76053	$0.85729
		Over 30 therms	$0.59022	$0.76053	$0.85729
Summer (May - October)	Customer Charge		$19.50	$23.50	$17.00
	ISRS		$3.94	$0.00	$0.00
	Volumetric Charge (per therm)	First 30 therms	$0.31290	$0.28286	$0.37962
		Over 30 therms	$0.15297	$0.28286	$0.37962
	PGA/ACA (per therm)	First 30 therms	$0.54708	$0.47767	$0.47767
		Over 30 therms	$0.54708	$0.47767	$0.47767
	Total Fixed		$23.44	$23.50	$17.00
	Total Volumetric (per therm)	First 30 therms	$0.85998	$0.76053	$0.85729
		Over 30 therms	$0.70005	$0.76053	$0.85729

[19] Missouri Public Service Commission Tariff No. YG-2013-0613, Laclede Gas Company, *Schedule of Rates and Standard Rules and Regulations for Gas Service*, Residential Gas Service (RG), July 8, 2013, Sheet No. 2; Missouri Public Service Commission Tariff No. YG-2017-0219, Laclede Gas Company, *Schedule of Rates and Standard Rules and Regulations for Gas Service*, Infrastructure System Replacement Surcharge ("ISRS"), June 1, 2017, Sheet No. 12; and, Missouri Public Service Commission Tariff No. YG-2017-0239, Laclede Gas Company, *Schedule of Rates and Standard Rules and Regulations for Gas Service*, Purchased Gas Adjustment Clause – Adjustment Statement, June 1, 2017, Sheet No. 29. These tariffs have been adopted by Spire Missouri Inc. d/b/a Spire.

[20] Missouri Public Service Commission Case No. GR-2017-0215, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service*, LAC Exhibit No. 1, April 11, 2017, Residential General Service (RG), Infrastructure System Replacement Surcharge (ISRS), and Purchased Gas Adjustment Clause – Adjustment Statement, Sheet Nos. 2, 12, and 29.

Table 2. Comparison of Laclede's current and proposed residential rates.

			Proposed (pre-Oct 18) vs. Current	Proposed (Oct 18 forward) vs. Current
Winter (November - April)	Customer Charge		20.51%	-12.82%
	ISRS		-100.00%	-100.00%
	Volumetric Charge (per therm)	First 30 therms	-69.15%	-58.60%
		Over 30 therms	N/A	N/A
	PGA/ACA (per therm)	First 30 therms	38.01%	38.01%
		Over 30 therms	-19.07%	-19.07%
	Total Fixed		0.26%	-27.47%
	Total Volumetric (per therm)	First 30 therms	-39.78%	-32.12%
		Over 30 therms	28.86%	45.25%
Summer (May - October)	Customer Charge		20.51%	-12.82%
	ISRS		-100.00%	-100.00%
	Volumetric Charge (per therm)	First 30 therms	-9.60%	21.32%
		Over 30 therms	84.91%	148.17%
	PGA/ACA (per therm)	First 30 therms	-12.69%	-12.69%
		Over 30 therms	-12.69%	-12.69%
	Total Fixed		0.26%	-27.47%
	Total Volumetric (per therm)	First 30 therms	-11.56%	-0.31%
		Over 30 therms	8.64%	22.46%

Table 3. MGE's current[21] and proposed[22] residential rates.

	Current	Proposed (pre-Oct 18)	Proposed (post Oct-18)
Customer Charge	$23.00	$25.20	$20.00
ISRS	$2.41	$0.00	$0.00
Volumetric Charge (per therm)	$0.07117	$0.15055	$0.23500
PGA/ACA (per therm)	$0.54903	$0.49492	$0.49492
Total Fixed	$25.41	$25.20	$20.00
Total Volumetric (per therm)	$0.62019	$0.64547	$0.72992

[21] Missouri Public Service Commission Tariff No. YG-2017-0220, Laclede Gas Company d/b/a Missouri Gas Energy, *Schedule of Rates and Charges and General Terms and Conditions for Gas Service*, Infrastructure Replacement Surcharge (ISRS), June 1, 2017, Sheet No. 10; Missouri Public Service Commission Tariff No. YG-2017-0240, Laclede Gas Company d/b/a Missouri Gas Energy, *Schedule of Rates and Charges and General Terms and Conditions for Gas Service*, Purchased Gas Cost Adjustment (PGA) – Summary Statement, June 1, 2017, Sheet No. 24.3; and, Missouri Public Service Commission Tariff No. YG-2014-0428, Laclede Gas Company d/b/a Missouri Gas Energy, *Schedule of Rates and Charges and General Terms and Conditions for Gas Service*, Residential Gas Service (RS), May 1, 2014, Sheet No. 25. These tariffs have been adopted by Spire Missouri Inc. d/b/a Spire.

[22] Missouri Public Service Commission Case No. GR-2017-0216, *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, MGE Exhibit No. 1, April 11, 2017, Infrastructure Replacement Surcharge (ISRS), Purchased Gas Cost Adjustment (PGA) – Summary Statement, and Residential Gas Service (RS), Sheet Nos. 10, 24.3, and 25.

Table 4. Comparison of MGE's current and proposed residential rates.

	Proposed (pre-Oct 18) vs. Current	Proposed (Oct 18 forward) vs. Current
Customer Charge	9.57%	-13.04%
ISRS	-100.00%	-100.00%
Volumetric Charge (per therm)	111.55%	230.21%
PGA/ACA (per therm)	-9.85%	-9.85%
Total Fixed	-0.83%	-21.29%
Total Volumetric (per therm)	4.08%	17.69%

Q. What is DE's position with respect to these rate design proposals?

A. Spire's proposals to move to flat volumetric rates (in the case of Laclede) and transition to lower customer charges[23] will produce more equitable bill impacts based on usage and encourage customers to pursue energy efficiency through appropriate price signals, as shown in the bill impact analyses discussed below. Laclede's proposal will simplify its rate design with respect to the number of volumetric blocks and the relationship of the PGA/ACA mechanism to the base volumetric blocks; this simplification could improve customers' understanding of their bills and better align the PGA/ACA charges with the charges' underlying costs (i.e., purchased natural gas).

However, the bill impact analyses described below raise a concern for DE in that higher usage customers could see significant bill increases, particular in the winter months when natural gas is needed for space heating. While DE supports movement towards flat or inclining block rates, DE also supports gradual changes in rate design to avoid "rate shock."

Q. What is DE's solution to this concern?

A. To address the potential bill impacts on Laclede's higher usage winter customers, DE recommends a temporary tail block rate designed to apply to Laclede customers at the 95th

[23] However, the Companies' ISRS charges could conceivably be increased to a level that, in combination with the proposed customer charges, surpasses the current totals of the customer and ISRS charges.

percentile of the winter bill impacts shown below; such a design would ensure that the transitional tail block addresses customers with truly extraordinary usage. DE would also recommend that both Companies focus a portion of their efficiency efforts on such customers to identify the reasons for their high usage and potential energy savings options. Having effective efficiency programs in place is important for the customers who will experience higher bill impacts because of their use of natural gas for space heating.

C. COMMISSION STAFF'S RATE DESIGN PROPOSALS

Q. What are Staff's proposals for the Companies' residential rate designs?

A. Staff proposes a customer charge of $26.00 for Laclede and $20.00 for MGE.[24]

Q. Does DE support Staff's customer charge proposals?

A. No. Staff's proposed customer charge for Laclede's residential customers is higher than that supported by Spire for Laclede, even though Staff's recommended revenue requirement increase is lower for Laclede than that proposed by the Companies (see below). Staff's customer charge proposal for MGE's residential customers, although the same as that proposed by Spire for MGE upon implementation of the RSM, is higher than that supported by Staff's own analysis. The argument offered by Staff in support of its proposal for MGE is that the shift from a $23.00 residential customer charge (excluding the ISRS) to a $17.01 fixed charge would create adverse bill impacts, "… given the relative accuracy of a CCOS as a snapshot in time."[25] However, this assertion would mostly apply to higher use customers, since lower customer charges result in higher bill impacts for

[24] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Staff Report – Class Cost of Service ("Staff CCOS Report"), September 22, 2017, page 3, lines 16-18.
[25] *Ibid*, page 22, lines 1-4.

higher use customers. Staff's reasoning would seem to contradict its own recommendation to increase Laclede's current residential customer charge of $19.50 (again, excluding the ISRS) to $26.00. According to Ms. Brink's comparison of peer natural gas utilities in this region, a $26.00 customer charge would be extremely high, second only to that employed by Peoples Gas in Illinois for residential heating customers.[26]

Q. Does Staff offer alternative options for the Companies' residential rate designs?

A. Yes. Staff proposes flat volumetric rate designs but also offers inclining block rate options for consideration by the Commission.[27] Overall, the inclining block rate designs would better encourage energy efficiency and have lower impacts on lower use customers, as compared to Staff's recommended residential flat volumetric rate designs.[28] However, Laclede customers with less than 20 therms of use would see bill increases under both Staff's flat and inclining block rate proposals.[29] In part, this may be because of Staff's high customer charge proposal; it may also be a result of the move from a declining block rate with a block cut-off at 30 therms of use to either a flat volumetric rate or an inclining block rate with a block cut-off at 50 therms of use in the case of Laclede.[30]

Q. Does DE support the residential inclining block rates offered by Staff?

A. Yes, contingent upon the revenue requirements ordered by the Commission in these cases. Revenue requirements higher than those supported by Staff would result in higher bill impacts to residential customers, so – based on the principles of mitigating gradualism and avoiding rate shock – Staff's residential rate designs would need to be re-evaluated under

[26] GR-2017-0215 and GR-2017-0216, Brink Direct, pages 5-6, lines 15-19 and 1.
[27] GR-2017-0215 and GR-2017-0216, Staff CCOS Report, page 3, lines 16-24.
[28] *Ibid*, pages 23-24, lines 5-6 and 1-2.
[29] *Ibid*, page 24, lines 1-2.
[30] *Ibid*, pages 22-23, lines 9-10 and 1-4.

higher revenue requirements to determine if there would be significantly adverse bill impacts.

Q. Is it possible to compare directly the bill impacts of the residential rate designs proposed by Spire with the inclining block rate designs offered by Staff?

A. Unfortunately, this is not possible for two reasons. First, Spire and Staff have very different proposals for revenue requirement increases. While Spire proposes revenue requirement increases of $25.5 million for Laclede and $34.0 million for MGE (net of current ISRS revenues), Staff proposes revenue requirement increases of nearly $12.0 million for Laclede and over $8.7 million for MGE.[31] This gap between the parties' positions prevents direct comparisons of bill impacts that could result from their respective rate design proposals. Second, Staff has not, to date, proposed specific PGA/ACA rates. PGA/ACA rates (as shown above) can constitute significant portions of customers' volumetric rates, so not knowing what Staff would propose for PGA/ACA rates omits information that could significantly affect estimated bill impacts.

Q. Given the differences in proposed revenue requirement increases, is there a solution to address DE's concerns?

A. Yes. DE recommends that the Commission order Spire to present bill impacts from residential rates that are "recalibrated" to Staff's proposed revenue requirement increases, and that Staff present bill impacts from residential rates that are similarly recalibrated to

[31] Missouri Public Service Commission Case Nos. GR-2017-0215 and GR-2017-0216, *In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service* and *In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service*, Direct Testimony of Jamie S. Myers, September 8, 2017, pages 2-3, lines 18-23 and 1-6.

the revenue requirement increases proposed by Spire. This will aid all parties in comparing the residential rate designs proposed by Spire and Staff.

V. BILL IMPACT ANALYSES OF SPIRE'S PROPOSALS

Q. What is the purpose of a bill impact analysis?

A. The purpose of a bill impact analysis is to determine the changes to customer bills as the result of changes in rates. While such an analysis is often based on the "average" customer's use, it should also take into account customers who use greater or lesser amounts of a given commodity to determine equity and efficiency impacts.

Q. What are the bases of your bill impact analyses?

A. My bill impact analyses are based on the bill frequency analyses provided to the Commission Staff in response to Data Request 0256. The use of these bill frequency analyses does not indicate that DE takes a position as to the Companies' billing units.

Q. How did you conduct your bill impact analyses?

A. My analyses used the Companies' current and proposed rates to calculate monthly bill impacts within each grouping of usages (or "tranche") supplied in response to Staff Data Request 0256. This approach allows for the comparison of bill impacts across a spectrum of usage levels, as well as a corresponding look at the number and fraction of customers affected by bill impacts within the tranches. To perform my analyses, I calculated the average usage within each tranche. In the case of MGE, I converted these average usage amounts from ccf to therms, consistent with MGE's proposed billing unit switch. However, I display MGE's usage tranches in ccf to avoid the complication of showing the tranches in converted units of therms. Finally, I evaluated the monthly bill impacts on customers of the Companies that use an average amount of natural gas.

Q. Which ISRS and PGA/ACA rates did you use in your analyses?

A. I used the ISRS and PGA/ACA rates that were most recently effective at the time that I conducted the analyses, as well as the Companies' proposed PGA/ACA rates. While these rates would have changed through the test year, it is impossible to know what these rates will be in the future; it is therefore appropriate to compare the most recently effective rates to the proposed rates in order to maintain consistency.

Q. In reviewing your results, should the Commission be aware of any other considerations?

A. Yes. If the Commission approves the Companies' proposed RSM, the results for pre-October 2018 bill impacts will not occur for many of the months shown because the pre-October 2018 rates would not be in effect for long; in fact, the results shown below for pre-October 2018 rates would likely apply during many months of lower usage given the probable effective date of rates in this case. If the Commission approves the proposed RSM, greater weight should be given to the bill impacts occurring after the implementation of the RSM.

Q. What were the results of your analyses?

A. The results of my analyses for Laclede's and MGE's average use customers are shown below in Tables 5 and 6, respectively. Due to the volume of data involved, the monthly results by tranche are shown in Schedules MRH-1 and MRH-2 for Laclede and MGE, respectively.

Table 5. Bill impacts on Laclede residential customers with average usage.

	Usage (therms)	Bills			Absolute Bill Impacts		Relative Bill Impacts	
		Current	Proposed (pre-Oct 18)	Proposed (Oct 18 forward) vs. Current	Proposed (pre-Oct 18) vs. Current	Proposed (Oct 18 forward) vs. Current	Proposed (pre-Oct 18) vs. Current	Proposed (Oct 18 forward) vs. Current
January	148.67	$131.37	$136.57	$144.46	$5.20	$13.08	3.96%	9.96%
February	137.89	$125.01	$128.37	$135.21	$3.36	$10.20	2.69%	8.16%
March	95.28	$99.86	$95.96	$98.68	-$3.90	-$1.18	-3.90%	-1.18%
April	58.98	$78.43	$68.36	$67.56	-$10.08	-$10.87	-12.85%	-13.86%
May	27.85	$47.39	$44.68	$40.87	-$2.71	-$6.51	-5.72%	-13.75%
June	20.05	$40.68	$38.75	$34.19	-$1.93	-$6.49	-4.75%	-15.96%
July	14.56	$35.96	$34.57	$29.48	-$1.39	-$6.48	-3.86%	-18.02%
August	13.28	$34.86	$33.60	$28.38	-$1.26	-$6.48	-3.62%	-18.58%
September	19.97	$40.61	$38.69	$34.12	-$1.93	-$6.49	-4.74%	-15.99%
October	17.62	$38.59	$36.90	$32.11	-$1.69	-$6.49	-4.39%	-16.81%
November	35.21	$64.40	$50.28	$47.18	-$14.13	-$17.22	-21.93%	-26.74%
December	118.27	$113.43	$113.45	$118.39	$0.02	$4.96	0.02%	4.38%
Annual	**707.61**	**$850.59**	**$820.16**	**$810.63**	**-$30.43**	**-$39.96**	**-3.58%**	**-4.70%**

Table 6. Bill impacts on MGE residential customers with average usage.

	Usage (therms)	Bills			Absolute Bill Impacts		Relative Bill Impacts	
		Current	Proposed (pre-Oct 18)	Proposed (Oct 18 forward) vs. Current	Proposed (pre-Oct 18) vs. Current	Proposed (Oct 18 forward) vs. Current	Proposed (pre-Oct 18) vs. Current	Proposed (Oct 18 forward) vs. Current
January	156.01	$122.17	$125.90	$133.87	$3.73	$11.71	3.06%	9.58%
February	138.11	$111.07	$114.35	$120.81	$3.28	$9.74	2.95%	8.77%
March	85.27	$78.29	$80.24	$82.24	$1.95	$3.95	2.48%	5.04%
April	55.21	$59.65	$60.84	$60.30	$1.19	$0.65	1.99%	1.09%
May	26.90	$42.09	$42.56	$39.64	$0.47	-$2.46	1.12%	-5.84%
June	19.12	$37.27	$37.54	$33.96	$0.27	-$3.31	0.73%	-8.89%
July	13.73	$33.93	$34.06	$30.02	$0.14	-$3.90	0.40%	-11.50%
August	12.65	$33.26	$33.36	$29.23	$0.11	-$4.02	0.33%	-12.09%
September	14.14	$34.18	$34.32	$30.32	$0.15	-$3.86	0.43%	-11.29%
October	16.33	$35.54	$35.74	$31.92	$0.20	-$3.62	0.57%	-10.18%
November	28.93	$43.35	$43.87	$41.12	$0.52	-$2.24	1.20%	-5.16%
December	109.10	$93.07	$95.62	$99.64	$2.55	$6.56	2.74%	7.05%
Annual	**675.51**	**$723.86**	**$738.42**	**$733.07**	**$14.55**	**$9.20**	**2.01%**	**1.27%**

Q. What do you observe from your analyses?

A. Customers with relatively low usage could see bill decreases, while customers with higher usage would see bill increases. This is not a strictly linear trend in the case of Laclede due to the move to a flat volumetric rate; Laclede customers with lower levels of usage might initially experience greater bill decreases with increasing usage for the first thirty therms of usage (the current first rate block) during some months, but would see higher bill impacts with usages above thirty therms of usage. While Laclede customers with average usage in all months would see an annual bill decrease, MGE customers with average usage in all months would see an annual bill increase. The monthly bill impacts for customers with average usage would be higher or lower in different months, but lower usage in certain months (i.e., outside of January, February, and December) would result in lower bill impacts. As noted above, customers with extremely high usage would experience substantial bill impacts, with this effect most prominently occurring after RSM implementation and for higher usage Laclede customers.

Q. What do you conclude based on these observations?

A. The results suggest that Spire's proposals would send efficiency-inducing price signals to higher users. An added benefit would be the reduction of bills for lower use customers, since low-income customers tend to have lower use. The substantial bill impacts on Laclede's higher usage customers support DE's proposal to create a transitional tail block rate; the transitional rate would represent a more gradual approach that avoids rate shock.

VI. CONCLUSIONS

Q. Please summarize your conclusions and the positions of DE.

A. Since the RSM can serve as an alternative to currently used revenue stabilization options, DE is not opposed to the Companies' RSM proposal if the Commission adopts both the efficiency proposal addressed in my Direct Revenue Requirement Testimony and the rate design proposals discussed in this testimony. Based on my bill impact analyses of Spire's residential rate design proposals, DE recommends that the Commission order Laclede to create a transitional tail block rate to mitigate bill impacts on larger residential customers. Depending on the bill impacts resulting from any revenue requirement increase ordered by the Commission, DE may be able to support the residential inclining block rates offered by Staff; DE does not support Staff's residential customer charge proposals. To facilitate comparisons of the rate designs offered by Spire and Staff, DE requests that the Commission order these two parties to model the bill impacts of their rate designs at their competing revenue requirements.

Q. Does this conclude your Rebuttal Rate Design Testimony in this case?

A. Yes.