Exhibit No. 104

Staff – Exhibit 104
Staff's Class Cost of Service and Rate Design Report
File No. GR-2021-0108

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

CLASS COST OF SERVICE

SPIRE MISSOURI, INC., d/b/a SPIRE

SPIRE EAST and SPIRE WEST
GENERAL RATE CASE

CASE NO. GR-2021-0108

Jefferson City, Missouri
May 26, 2021

** Denotes Confidential Information **

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SPIRE MISSOURI, INC., d/b/a SPIRE

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STAFF'S CLASS COST OF SERVICE REPORT OF SPIRE MISSOURI, INC., d/b/a SPIRE

SPIRE EAST and SPIRE WEST
GENERAL RATE CASE

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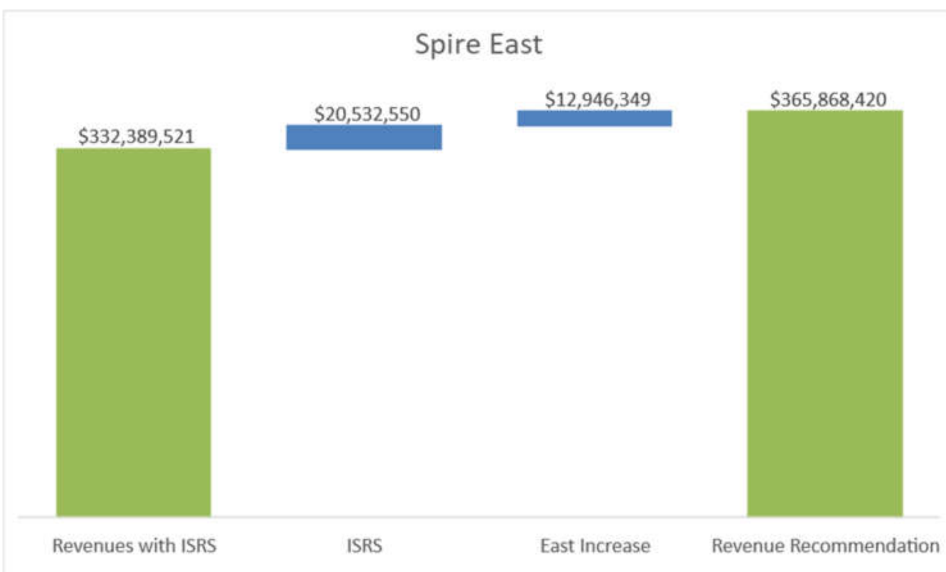
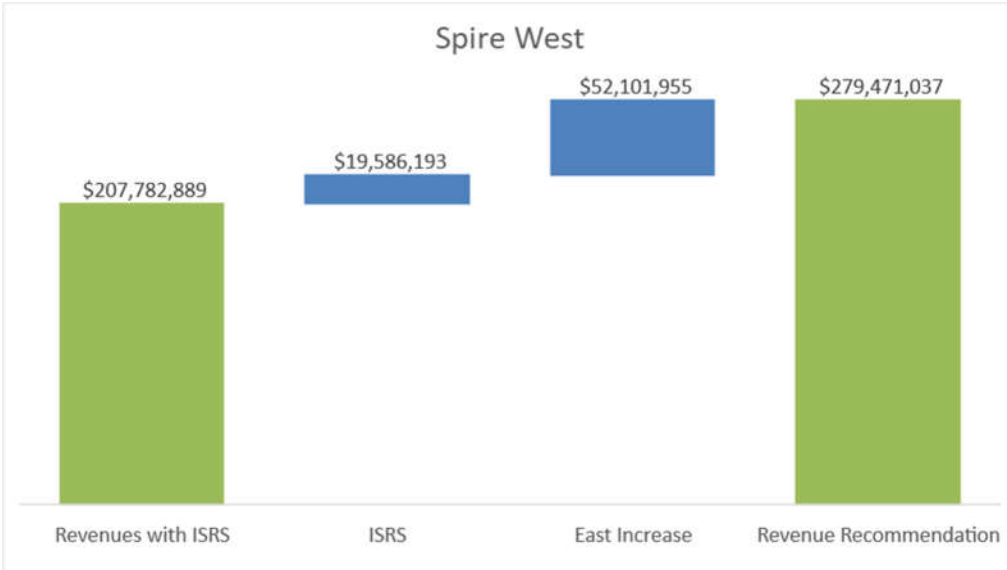
I. Executive Summary

As presented in the *Staff Direct Cost of Service Report ("COS Report")* Staff recommends that the Commission increase Spire East's revenue requirement by $12,946,349 from existing revenues of $352,922,071 and increase Spire West's revenue requirement by $52,101,955 from existing revenues of $227,369,082.[1] Both recommendations are based on a return on equity ("ROE") of 9.37%, as depicted in the graphs below.[2] Staff also recommends that Spire's Infrastructure System Replacement Surcharge ("ISRS") be reset to zero, from the current rates designed to collect annual ISRS revenues of $47.3 million. These values result in approximate increases of 3.7% and 22.9% for Spire East and Spire West, respectively, or an approximate 11.2% increase from a total company perspective.



[1] Inclusive of true up allowances of $6.3 and $4.8 million for Spire East and Spire West, respectively.

[2] On December 11, 2020, Spire Missouri filed tariff sheets designed to implement an increase to its natural gas retail rate revenues by $111 million. On a consolidated basis, this represents a requested 9.5% increase in existing Spire Missouri total revenues, or approximate rates.

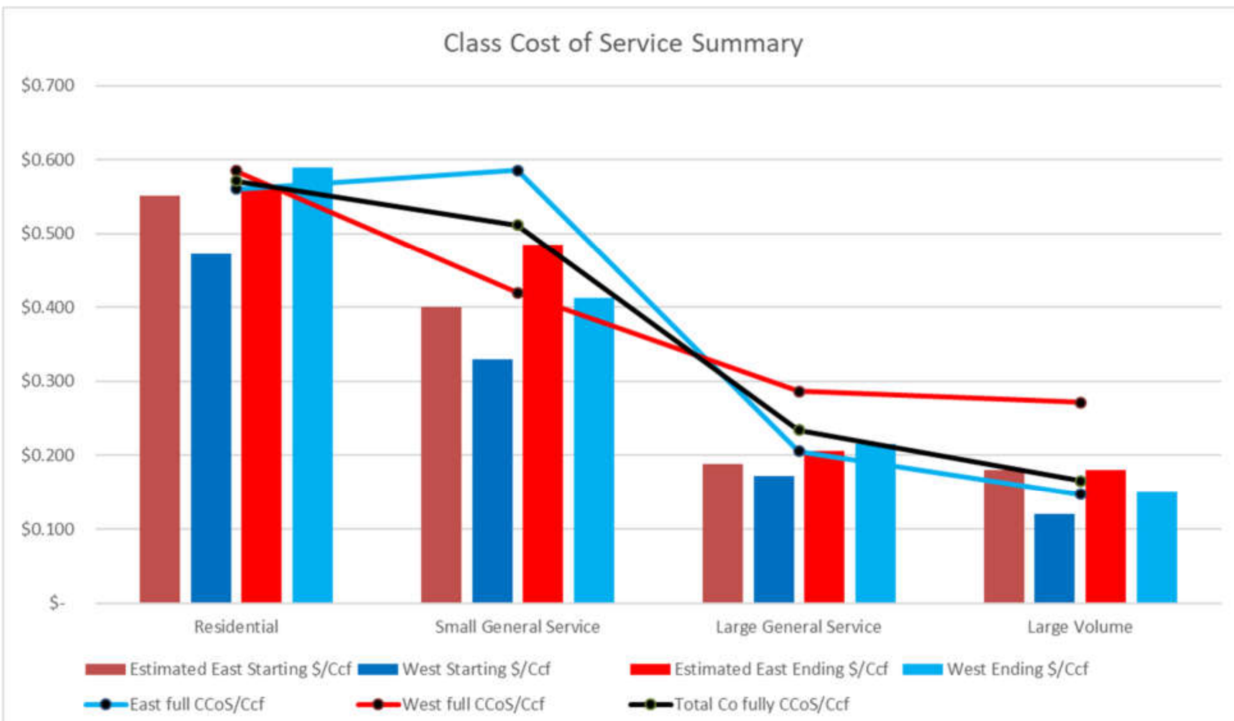


In addition to providing Staff's recommendations for implementing this recommended increase and addressing other tariff and rate design issues, this Direct Report also addresses to the extent necessary (1) Spire's request to consolidate rate districts, (2) Spire's request to bill in Therms rather than Ccf for Spire East, and (3) Spire's request to discontinue the Weather Normalization Adjustment Rider ("WNAR") and replace it with a Rate Normalization Adjustment ("RNA"). Staff also addresses concerns with Spire's current practices as they relate to Spire's adherence to its promulgated tariff.

A. Class Cost-of-Service and Rate Design Overview

Staff recommends this increase in revenue per rate district (Spire East and Spire West) be implemented as increases in the revenue responsibility of certain classes within each rate district. The sizing of these increases relative to other classes within a rate district are referred to as "interclass" revenue responsibility issues. How specific rate schedules should be designed to recover that class's revenue responsibility are referred to as "intraclass" revenue responsibility issues. Staff based its interclass revenue responsibility recommendations on its Class Cost of Service ("CCOS") Study. In this case, Staff's CCOS study is designed to determine what the cost of serving each class of customers would be, if all costs (including the cost of capital, or "rate of return") were allocated appropriately among all customer classes.

Staff's recommended interclass revenue responsibility shifts are designed to reasonably bring each class closer to producing the system-average rate of return used in determining Staff's recommended revenue requirement, without increasing the revenue responsibility of classes that are found to be over-contributing. The graph below first provides the current ("starting") revenues for each indicated class within each rate district, divided by the Ccf of usage associated with that class. The graphs further illustrate the allocated cost of serving each class ("full CCOS"), and Staff's recommended class revenue requirement ("ending"), also divided by the number of Ccf used by that class. Note, the Spire East information is provided as estimated $ per Ccf, although Spire East customers are currently billed using Therms. Also note, the Spire West information does not reflect the recommended reconfiguration of the General Service classes and Large Volume classes, nor the creation of a Transportation class.



Note, this figure presents simple averages, and does not represent the average bill a customer on these rate schedules may pay, given the various rate structure components such as customer charges, volumetric charges that vary with usage and/or season, demand charges, and the general seasonality of gas consumption.

Staff's rate design and rate structure recommendations in this case are largely designed to improve the reasonableness of customers' bills from a rate continuity perspective, while minimizing customer impacts to mitigate the substantial increase contemplated.[3] Given Spire's request to consolidate rate districts, Staff's recommendations better align rate structures across rate districts to facilitate eventual consolidation of Spire East and Spire West, if and when appropriate.

Rate continuity issues within Spire West's General Services classes appear to be driven by existing rate designs. The promulgated Spire West rate schedules include a Small General Service ("SGS") rate schedule, generally for customers using less than 10,000 Ccf annually, and a Large General Service ("LGS") rate schedule, generally for customers using more than 10,000 Ccf annually. However, some customers using less than 10,000 Ccf annually are currently in the LGS rate class, and some customers using more than 10,000 Ccf annually are currently in the SGS rate class.

A summary of Staff's rate design recommendations is below:

1) Staff **does not** recommend consolidation of rate schedules across rate districts at this time but will continue to review the appropriateness of doing so. Staff **does** recommend changes in rate structure at this time to facilitate the potential consolidation of rate districts.

2) Staff does not oppose Spire's requested change to Ccf from Therms as the basis for Spire East's customer bills.

3) Staff recommends promulgation of a Residential Retention rate option for both rate districts.

4) Staff recommends the Commission order Spire to develop and retain demand determinants for all customers for potential future use in rate development.

5) Staff recommends Spire investigate the reasonableness of its estimated usage associated with unmetered gas lighting service.

6) Staff recommends elimination of the Spire East Interruptible rate schedule.

7) Staff recommends changes to the rate structure of Spire West's Small General Service, Large General Service, and Large Volume Service rate schedules, and creation of a Transportation rate schedule, and clarification of tariff language indicating eligibility for service on each rate schedule.

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[3] This is a particular concern with the Spire West non-residential rate structure and design, and with Spire's enforcement of tariff provisions related to customer eligibility for service on a particular rate schedule.

8) Spire East interclass revenue responsibility recommendation:

Step 1a: Preserve the revenue responsibility of any class providing revenues in excess of its cost of service.

Step 1b: For any class providing revenues within 5% of its cost of service, increase that class's revenue responsibility by the amount indicated to exactly match its cost of service at an equal rate of return.

Step 2: For remaining classes, increase revenue responsibility proportionate to their contribution to revenues, except that it should not exceed the amount indicated to exactly match their cost of service at an equal rate of return.

Step 3: For remaining classes, increase revenue responsibility proportionate to their contribution to revenues.

The results of these adjustments as applied to Staff's direct case are provide below:

Spire East	Residential	Small General Service	Large General Service	Large Volume	LV Transport
Total Cost of Service	$ 279,441,210	$ 42,640,661	$ 29,481,158	$ 823,305	$ 7,801,461
Current Rate Revenue	$ 275,083,737	$ 29,185,361	$ 26,954,134	$ 1,005,525	$ 14,890,501
$ Change Recommended Step 1	$ 4,357,473	$ -	$ -	$ -	$ -
$ Change Recommended Step 2	$ -	$ 4,460,733	$ 2,527,024	$ -	$ -
$ Change Recommended Step 3	$ -	$ 1,592,008	$ -	$ -	$ -
Recommended Class Revenue Responsibility	$ 279,441,210	$ 35,238,102	$ 29,481,158	$ 1,005,525	$ 14,890,501
% Change Recommended	1.58%	20.74%	9.38%	0.00%	0.00%

Spire East ***(continued)***	Interruptible Sales	General L.P. Gas	Unmetered Gas Light	Vehicular Fuel
Total Cost of Service	$ 411,091	$ 26,542	$ 52,297	$ 12,649
Current Rate Revenue	$ 544,840	$ 12,417	$ 42,762	$ 24,746
$ Change Recommended Step 1	$ -	$ -	$ -	$ -
$ Change Recommended Step 2	$ -	$ 1,898	$ 6,536	$ -
$ Change Recommended Step 3	$ -	$ 677	$ -	$ -
Recommended Class Revenue Responsibility	$ 544,840	$ 14,992	$ 49,298	$ 24,746
% Change Recommended	0.00%	20.74%	15.28%	0.00%

9) Spire West interclass revenue responsibility recommendation, including consolidation of the General Service classes and Large Volume class:

Step 1a: Consolidate the General Service classes and Large Volume class for study purposes to establish rate continuity.

Step 1b: Preserve the revenue responsibility of any class providing revenues in excess of its cost of service.

Step 2: For remaining classes, increase revenue responsibility proportionate to their contribution to revenues.

The results of these adjustments as applied to Staff's direct case are provide below:

Spire West	Residential	General Services & LV	Transportation	Unmetered Gas Light
Total Cost of Service	$ 217,430,673	$ 47,481,246	$ 14,124,771	$ 5,023
Current Rate Revenue	$ 175,409,043	$ 33,202,431	$ 17,081,051	$ 1,271
$ Change Recommended Step 1	$ -	$ -	$ -	$ -
$ Change Recommended Step 2	$ 43,809,184	$ 8,292,454	$ -	$ 317
Recommended Class Revenue Responsibility	$ 219,218,227	$ 41,494,885	$ 17,081,051	$ 1,588
% Change Recommended	24.98%	24.98%	0.00%	24.98%

10) Staff recommends the approximate residential rates provided below, retaining the inclining block rate structure ordered by the Commission in Case Nos. GR-2017-0215 and GR-2017-0126.

	West	**East (Therms)**	**East (Ccf)**
Customer Charge	$ 20.00	$ 22.00	$ 22.00
Winter	$ 0.27567	$ 0.2422576	$ 0.24710
Summer 1	$ 0.24810	$ 0.2423459	$ 0.24719
Summer 2	$ 0.30609	$ 0.2641158	$ 0.26940

Staff Expert/Witness: Sarah L.K. Lange

II. Class Cost-of-Service Study

The purpose of rate design for a natural gas utility is to reasonably relate the manner in which customers are charged for a service to the manner in which the company incurs non-gas costs and expenses to provide service and to make service available. However, various public policy concerns, ranging from bill understandability to mitigating company disincentives to promote energy conservation, temper strict adherence to the seemingly precise results of these cost-causation studies.

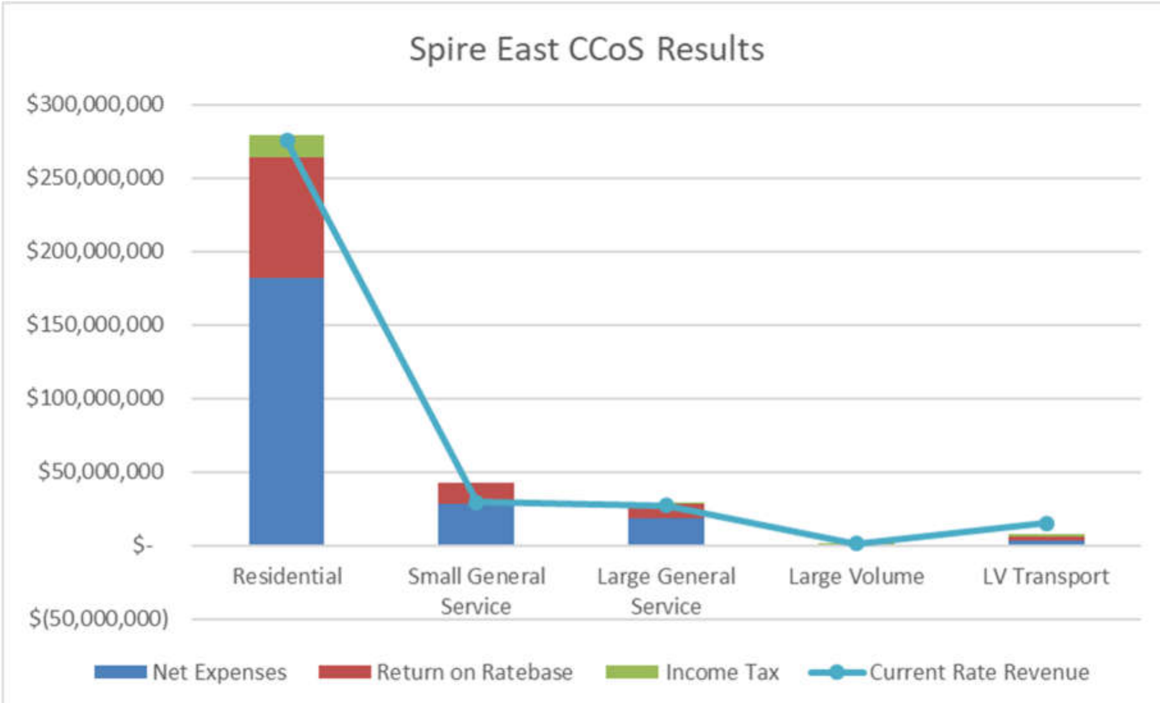
Non-gas costs and expenses are allocated or assigned to each class through the performance of a CCOS study. The purpose of Staff's CCOS study is to determine the level of revenue reasonably necessary for each class to cover (1) its assignment or allocation of the company's cost of doing business, excluding the cost of gas, (2) its allocation of cost of the return on the utility's investments to provide service, and (3) the income tax liability associated with the return on equity provided by that class.[4]

The results of Staff's CCOS studies are shown below and summarized in the accompanying graphs, for Spire East and Spire West, respectively.

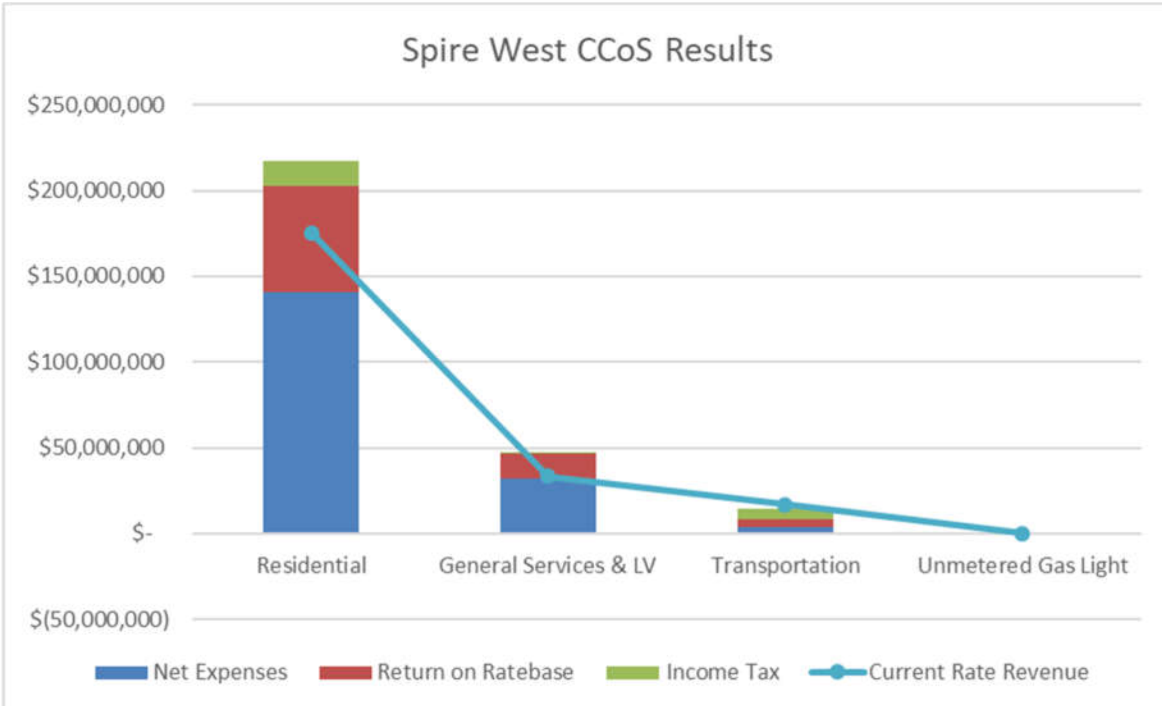
Spire East	Residential	Small General Service	Large General Service	Large Volume	LV Transport
Net Expenses	$ 181,410,931	$ 28,561,382	$ 18,757,988	$ 526,540	$ 3,453,493
Return on Ratebase	$ 82,529,188	$ 14,268,053	$ 9,381,840	$ 212,025	$ 2,260,971
Income Tax	$ 15,501,091	$ (188,774)	$ 1,341,330	$ 84,740	$ 2,086,997
Total Cost of Service	$ 279,441,210	$ 42,640,661	$ 29,481,158	$ 823,305	$ 7,801,461
Current Rate Revenue	$ 275,083,737	$ 29,185,361	$ 26,954,134	$ 1,005,525	$ 14,890,501
$ Change to Match Exactly	$ 4,357,473	$ 13,455,300	$ 2,527,024	$ (182,220)	$ (7,089,040)
% Change to Match Exactly	1.58%	46.10%	9.38%	-18.12%	-47.61%

Spire East (continued)	Interruptible Sales	General L.P. Gas	Unmetered Gas Light	Vehicular Fuel
Net Expenses	$ 253,661	$ 17,691	$ 31,451	$ 5,030
Return on Ratebase	$ 105,441	$ 10,050	$ 19,193	$ 4,028
Income Tax	$ 51,989	$ (1,199)	$ 1,653	$ 3,591
Total Cost of Service	$ 411,091	$ 26,542	$ 52,297	$ 12,649
Current Rate Revenue	$ 544,840	$ 12,417	$ 42,762	$ 24,746
$ Change to Match Exactly	$ (133,749)	$ 14,125	$ 9,535	$ (12,097)
% Change to Match Exactly	-24.55%	113.75%	22.30%	-48.89%

[4] In prior cases Staff presented its CCOS results as the rate of return provided by each class through existing revenues, however Staff in this case attempts to simplify its presentation of this issue. While these categories are cleanly delineated in the graphs and charts provided below, it is important to consider that a significant portion of the company's expense is depreciation expenses, which is allocated to the classes based on the allocation of the underlying plant. It is also important to consider that under most CCOS studies, the income tax required by a class is related to the ROE provided by a class under current rates – so a class that is not exceeding its allocation of expenses from the newly-determined revenue requirement through its current rates will not be allocated income tax and will instead be allocated negative taxes.



Spire West	Residential	General Services & LV	Transportation	Unmetered Gas Light
Net Expenses	$ 140,654,122	$ 31,781,070	$ 3,991,707	$ 3,805
Return on Ratebase	$ 61,821,974	$ 15,088,582	$ 4,500,895	$ 2,308
Income Tax	$ 14,954,577	$ 611,594	$ 5,632,169	$ (1,090)
Total Cost of Service	$ 217,430,673	$ 47,481,246	$ 14,124,771	$ 5,023
Current Rate Revenue	$ 175,409,043	$ 33,202,431	$ 17,081,051	$ 1,271
$ Change to Match Exactly	$ 42,021,630	$ 14,278,815	$ (2,956,280)	$ 3,752
% Change to Match Exactly	23.96%	43.01%	-17.31%	295.22%



[5]

These studies only reflect the non-gas portion of a customer's bill; they do not include costs associated with the Purchased Gas Adjustment clause ("PGA"), ISRS, or any weather and conservation adjustment mechanism. The PGA portion of a customer's bill captures the majority of the purely variable cost associated with serving a customer – which is the cost of the gas that customer has consumed – along with reconciliations for changes in the average cost of gas which customers currently and formerly consumed.

It would not be reasonable to attempt to exactly match each class to its CCOS-determined revenue responsibility for a number of reasons. First, a CCOS study is something of an academic exercise. Every dollar of revenue requirement must go somewhere, and while Staff has endeavored to allocate revenue requirement as reasonably as possible, items like corporate salaries, office buildings, and plant installed for customers who have long left the system, do not have clear cost causation among current customers. Further, allocation of the distribution system and other plant

[5] Observe that the blue current revenue line for Spire West Residential exceeds its allocation of expenses and covers just over half of its allocation for return on rate base. It may be tempting to refer to this deficit as a "subsidy," but that would be a misnomer. This situation is more accurately referred to as an "under-contribution." It is fair to say that all subsidies are under-contributions, but not all under-contributions are subsidies.

is dependent upon the determinants at a given time, and the customers and usage underlying those determinants are subject to constant change. Second, Staff generally views it as unreasonable to decrease a given class's rates in a case where the company (or the rate district) is receiving an overall increase. Third, excessive customer impacts should be avoided to reduce customer flight from the system, resulting in stranded investment, and to generally benefit customers. Fourth, preservation (or creation) of rate continuity should be considered to avoid rate switching, which may defeat the goal of aligning allocated cost causation with revenue recovery. Finally, given the structure of rate cases, parties' rate design recommendations are aligned to a direct-filed revenue position, and the allocation of that revenue requirement among specific accounts, using a specific rate of return. Unless the Commission approves that exact set of accounting schedules as well as the direct-filed billing determinants in setting the revenue requirement in a particular case, there is an inherent disconnect between the CCOS study results used in providing a party's class cost of service and rate design recommendations, and the actual class cost of service that would result at the conclusion of a case. Other considerations include public policy, such as rate continuity, rate stability, and revenue stability.

Staff Expert/Witness: Sarah L.K. Lange and Robin Kliethermes

A. Data Sources

Staff's CCOS studies for Spire West and Spire East utilized Staff's revenue requirement positions as filed on May 12, 2021, for Spire West's and Spire East cost-of-service. This data includes:

- Adjusted Missouri investment and cost data by FERC account;
- Annualized, normalized rate revenues;
- Other operating and maintenance expenses;
- Depreciation and amortizations; and
- Taxes.

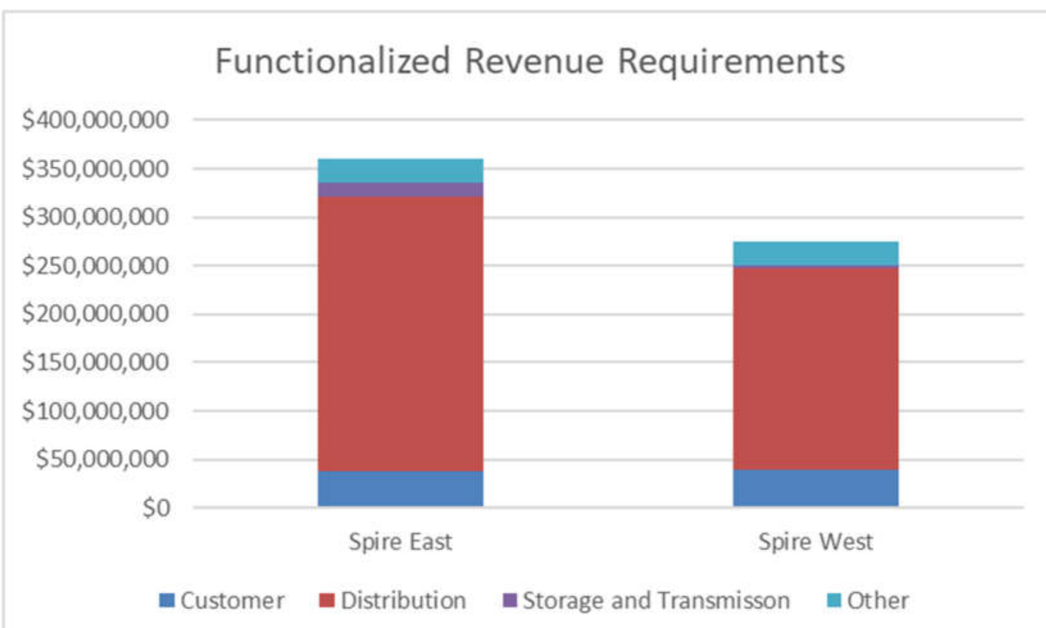
In addition, Staff reviewed Spire East's and Spire West's current CCOS studies and other current workpapers on the average cost of customer service and information expenses and the level of deposits per rate class. Staff's Engineering Analysis Department reviewed the underlying data used to derive Staff's allocations for the company's investment in meters, regulator equipment, service lines and mains; and these allocations are discussed in more detail further in the report.

B. Functions

Functionalization refers to the simplified disaggregation of a utility's revenue requirement into broad categories of simplified cost causation. Natural gas utilities differ from other utilities, such as electric, in that the production and transmission of the commodity is largely accomplished by entities other than the utility itself, and the utility recovers gas costs through the PGA, as opposed to the retail rates that are the subject of this general rate case. Thus, Staff has not examined functionalized energy costs in this CCOS study.

The Distribution Function, consisting of the revenue requirement associated with Distribution Mains, Distribution Meters and Regulators, and Distribution Services, is the largest cost component. It generates 79% of the total Spire East revenue requirement and 76% of the total Spire West revenue requirement.

The Customer Function includes the revenue requirement associated with deposits, uncollectible accounts, and customer service and billing expenses. It generates 10% of the total Spire East revenue requirement and 15% of the total Spire West revenue requirement. The cost drivers for each function for each rate district are illustrated in the graphs below:



Staff Expert/Witness: Robin Kliethermes

C. Allocation of Distribution Costs

A natural gas distribution system contains all of the mains, services, and other appurtenances that are necessary to deliver natural gas to consumers. Spire incurs costs to install, maintain, and operate its distribution systems, and some method must be used to allocate those costs among its customers. Staff uses two sets of factors to allocate distribution costs. The Mains Allocation factors are used to allocate the cost of distribution mains between the different service classes. The costs of meters, regulators, and service lines are allocated with Weighted Customer factors.

The Mains Allocation factors are calculated with a number of inputs, including the average cost per foot of main, the average length of main associated with each customer, and the number of customers in each class. Within the calculation for the Mains Allocation factors, the distribution system is divided into two parts according to Staff's Stand Alone/Integrated System method. The Stand Alone/Integrated System method is based on the idea that distribution mains have joint costs and joint benefits. The section of main that is necessary to extend a distribution system to serve one customer will also be used to transport natural gas to downstream customers as well. The fraction of the distribution system considered to be Stand Alone for each class is calculated by using the average per foot costs of main, the lengths of mains associated with average customers in each class, and the total current cost-of-mains for the entire distribution system. The fraction of the system classified as Integrated is then calculated as one minus the Stand Alone fraction. The Integrated part of the system is further allocated with peak day natural gas demands for each customer class. The peak day demands are based on normal peak day weather that is developed by Staff. The Mains allocation factors for each class are the sum of the Stand Alone and Integrated components.

The Weighted Customer factors for meters, regulators, and service lines are based on the equipment and installation costs for average customers in each class. The Residential Classes are always given a weight of one with the other classes' weights being calculated by dividing their average costs by the costs of the Residential Classes.

Staff Expert/Witness: Charles T. Poston, PE

D. Allocation of Customer Service Costs

Customer service costs include expenses incurred for billing and customer services. Customer-related costs are costs necessary to make natural gas service available to the customer, regardless of whether the service is utilized. Examples of such costs include meter reading, billing, postage, and customer service expenses. Staff allocated these costs to customer classes based on the number of customers in the class.

E. Revenues

Operating revenues consist of (1) the revenue that the utility collects from the sale of natural gas to Missouri retail customers ("rate revenues"), and (2) the revenue the utility receives for providing other services ("other revenues"). Rate revenues do not include revenues from ISRS, PGA or any weather and conservation adjustment riders. Staff also uses rate revenues in developing its rate design recommendation and will use them to develop the rate schedules required to implement the Commission's ordered revenue requirement and rate design for Spire East and Spire West in these cases. Staff in its CCOS Study used the normalized and annualized class rate revenues in Staff's COS Report filed May 12, 2021, totaling $347,744,023 for Spire East and $225,693,795 for Spire West.

F. Allocation of Taxes

Taxes consist of real estate and property taxes, payroll tax expenses, and income taxes. Real estate and property tax expenses are directly related to the original cost investment in plant for Spire East and Spire West, so these expenses are allocated to customer classes on the basis of the sum of the previously allocated production, distribution and general plant investment.

Payroll tax expenses are directly related to payroll expenses for Spire East and Spire West, so these expenses are allocated to customer classes on the basis of previously allocated payroll expenses.

Lastly, Staff separately allocated income taxes for Spire East and Spire West to customer classes based on the percentage of net income produced by each customer class.

Staff Expert/Witness: Robin Kliethermes

III. Rate Structure and Rate Design

As an introductory matter, it is important to recall that the rates discussed in this report are those found only on the class rate schedules. This report does not address the "Natural Gas Cost" portion of a customer's bill – the rate for which is adjusted through the PGA rate – nor the ISRS portion of the customer's bill, nor any applicable weather and conservation adjustment mechanism. "Rate Structure" generally refers to the elements and requirements for service associated with each rate schedule, while "Rate Design" generally refers to the establishment of relative values for those rate elements.

Staff's primary objective in this report is to recommend rates for each rate district to facilitate collection of the final Commission-determined revenue requirement, which is unlikely to match the requests or recommendations of any party in total or in functionalized components. Staff also addresses rate continuity issues in Spire West's General Service subclasses and provides a recommendation regarding eventual consolidation of those subclasses across rate districts. For the non-residential classes, Staff recommends restructuring the Spire West Small General Service, Large General Service, and Large Volume Service rate schedules, and creating a Transportation Service rate schedule to promote rate continuity, mitigate customer impacts, remove incentives for rate switching, and align structures with Spire East.[6] For Spire East, Staff recommends elimination of the Interruptible rate schedule, and expanded use of demand determinants if data exists, while maintaining or improving rate continuity to minimize incentives for rate switching.[7] As noted, Staff does not oppose a shift of the basis for customer billing from Therms to Ccf as Spire requests, which has been incorporated in many, but not all, values and figures presented in this report.

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[6] The rates and determinants associated with the recommended Transportation class have not been developed at this time, but Staff will work with the company to do so as this case and normalized and annualized determinants are developed.

[7] Data is not currently available to prepare rates and determinants associated with the demand charge recommendation, but Staff will work with the company to do so as this case and normalized and annualized determinants are developed. Similarly, the elimination of the Interruptible class will have a small impact on the rates applicable to other classes, which will be incorporated as those determinants are better identified.

A. Consolidation of Rate Districts

Staff does not recommend consolidation of the rate districts at this time, due to the excessive customer bill impact that would cause. The tables below provide the bill experienced by customers at various usage levels, with and without ISRS. The last two columns provide a comparison of the West bill to the East bill, for various customer classes and usage levels:

Residential Non-Gas Bill Comparison

	Pre-ISRS		With ISRS				Pre-ISRS	With ISRS
	East Bill	West Bill	East Bill	West Bill	East $/Ccf	West $/Ccf		
Customer Using 10 Ccf Summer	$24.10	$21.41	$26.88	$24.73	$2.41	$2.14	-13%	-9%
Customer Using 10 Ccf Winter	$24.33	$21.56	$27.11	$24.88	$2.43	$2.16	-13%	-9%
Customer Using 50 Ccf Summer	$32.50	$27.04	$35.28	$30.36	$0.65	$0.54	-20%	-16%
Customer Using 50 Ccf Winter	$33.67	$27.82	$36.45	$31.14	$0.67	$0.56	-21%	-17%
Customer Using 100 Ccf Summer	$45.21	$35.72	$47.99	$39.04	$0.45	$0.36	-27%	-23%
Customer Using 100 Ccf Winter	$45.33	$35.64	$48.11	$38.96	$0.45	$0.36	-27%	-23%
Customer Using 200 Ccf Summer	$70.65	$53.08	$73.43	$56.40	$0.35	$0.27	-33%	-30%
Customer Using 200 Ccf Winter	$68.66	$51.27	$71.44	$54.59	$0.34	$0.26	-34%	-31%

SGS Non-Gas Bill Comparison

	Pre-ISRS		With ISRS				Pre-ISRS	With ISRS
	East Bill	West Bill	East Bill	West Bill	East $/Ccf	West $/Ccf		
Customer Using 50 Ccf	$45.12	$35.75	$49.54	$40.73	$0.90	$0.71	-26%	-22%
Customer Using 100 Ccf	$55.24	$41.50	$59.66	$46.48	$0.55	$0.41	-33%	-28%
Customer Using 200 Ccf	$75.48	$52.99	$79.90	$57.97	$0.38	$0.26	-42%	-38%
Customer Using 400 Ccf	$115.96	$75.98	$120.38	$80.96	$0.29	$0.19	-53%	-49%
Customer Using 500 Ccf	$136.21	$87.48	$140.63	$92.46	$0.27	$0.17	-56%	-52%
Customer Using 750 Ccf	$186.81	$116.21	$191.23	$121.19	$0.25	$0.15	-61%	-58%
Customer Using 1000 Ccf	$237.41	$144.95	$241.83	$149.93	$0.24	$0.14	-64%	-61%
Customer Using 1250 Ccf	$288.01	$173.69	$292.43	$178.67	$0.23	$0.14	-66%	-64%

LGS Non-Gas Bill Comparison

	Pre-ISRS		With ISRS				Pre-ISRS	With ISRS
	East Bill	West Bill	East Bill	West Bill	East $/Ccf	West $/Ccf		
Customer Using 2000 Ccf Summer	$389	$283	$405	$305	$0.19	$0.14	-38%	-33%
Customer Using 2000 Ccf Winter	$389	$396	$405	$417	$0.19	$0.20	2%	3%
Customer Using 5000 Ccf Summer	$786	$512	$802	$534	$0.16	$0.10	-53%	-50%
Customer Using 5000 Ccf Winter	$786	$794	$802	$815	$0.16	$0.16	1%	2%
Customer Using 7500 Ccf Summer	$1,117	$704	$1,132	$725	$0.15	$0.09	-59%	-56%
Customer Using 7500 Ccf Winter	$1,117	$1,125	$1,132	$1,147	$0.15	$0.15	1%	1%
Customer Using 10000 Ccf Summer	$1,447	$895	$1,463	$916	$0.14	$0.09	-62%	-60%
Customer Using 10000 Ccf Winter	$1,447	$1,457	$1,463	$1,479	$0.14	$0.15	1%	1%

In general, Staff's revenue requirement analysis determined that Spire East rates should increase by approximately 3.7%, and Spire West rates should increase by approximately 22.9% to fully recover the cost of service and incorporate current ISRS amounts. Incorporating these changes as a blanket adjustment to rates in each district would result in the bills provided below, with the percentage difference between rate districts indicated in the last column:

Residential Non-Gas Bill Comparison with Blanket Increase					
	Scaled East Bill	Scaled West Bill	East $/Ccf	West $/Ccf	Difference
Customer Using 10 Ccf Summer	$24.98	$26.31	$2.50	$2.63	5%
Customer Using 10 Ccf Winter	$25.23	$26.51	$2.52	$2.65	5%
Customer Using 50 Ccf Summer	$33.69	$33.23	$0.67	$0.66	-1%
Customer Using 50 Ccf Winter	$34.90	$34.19	$0.70	$0.68	-2%
Customer Using 100 Ccf Summer	$46.87	$43.90	$0.47	$0.44	-7%
Customer Using 100 Ccf Winter	$46.99	$43.80	$0.47	$0.44	-7%
Customer Using 200 Ccf Summer	$73.24	$65.24	$0.37	$0.33	-12%
Customer Using 200 Ccf Winter	$71.18	$63.02	$0.36	$0.32	-13%

SGS Non-Gas Bill Comparison with Blanket Increase					
	Scaled East Bill	Scaled West Bill	East $/Ccf	West $/Ccf	Difference
Customer Using 50 Ccf	$46.8	$43.9	$0.94	$0.88	-6%
Customer Using 100 Ccf	$57.3	$51.0	$0.57	$0.51	-12%
Customer Using 200 Ccf	$78.3	$65.1	$0.39	$0.33	-20%
Customer Using 400 Ccf	$120.2	$93.4	$0.30	$0.23	-29%
Customer Using 500 Ccf	$141.2	$107.5	$0.28	$0.22	-31%
Customer Using 750 Ccf	$193.7	$142.8	$0.26	$0.19	-36%
Customer Using 1000 Ccf	$246.1	$178.2	$0.25	$0.18	-38%
Customer Using 1250 Ccf	$298.6	$213.5	$0.24	$0.17	-40%

LGS Non-Gas Bill Comparison with Blanket Increase					
	Scaled East Bill	Scaled West Bill	East $/Ccf	West $/Ccf	Difference
Customer Using 2000 Ccf Summer	$404	$348	$0.20	$0.17	-16%
Customer Using 2000 Ccf Winter	$404	$486	$0.20	$0.24	17%
Customer Using 5000 Ccf Summer	$815	$630	$0.16	$0.13	-29%
Customer Using 5000 Ccf Winter	$815	$975	$0.16	$0.20	16%
Customer Using 7500 Ccf Summer	$1,157	$865	$0.15	$0.12	-34%
Customer Using 7500 Ccf Winter	$1,157	$1,383	$0.15	$0.18	16%
Customer Using 10000 Ccf Summer	$1,500	$1,100	$0.15	$0.11	-36%
Customer Using 10000 Ccf Winter	$1,500	$1,791	$0.15	$0.18	16%

At this time, Staff recommends moving towards greater consistency in the non-residential rate structures for Spire East and Spire West, while retaining district-specific rates.

B. Interclass Shifts

As discussed above, Staff attempts to simplify its presentation of CCOS information and rate design recommendations in this case. In support, the most relevant information provided in the table below, as it pertains to interclass shifts, is a comparison of the "% Change to Match Exactly" row and the "% Change to Match Exactly, after Equal Increase" row.

Spire East	Residential	Small General Service	Large General Service	Large Volume
Net Expenses	$ 181,410,931	$ 28,561,382	$ 18,757,988	$ 526,540
Return on Ratebase	$ 82,529,188	$ 14,268,053	$ 9,381,840	$ 212,025
Income Tax	$ 15,501,091	$ (188,774)	$ 1,341,330	$ 84,740
Total Cost of Service	$ 279,441,210	$ 42,640,661	$ 29,481,158	$ 823,305
Current Rate Revenue	$ 275,083,737	$ 29,185,361	$ 26,954,134	$ 1,005,525
$ Change to Match Exactly	$ 4,357,473	$ 13,455,300	$ 2,527,024	$ (182,220)
% Change to Match Exactly	1.58%	46.10%	9.38%	-18.12%
Equal Percentage Increase	$ 10,241,240	$ 1,086,557	$ 1,003,490	$ 37,435
Rate Revenue with Equal Increase	$ 285,324,977	$ 30,271,918	$ 27,957,624	$ 1,042,960
$ Change to Match Exactly, after Equal Increase	$ (5,883,767)	$ 12,368,742	$ 1,523,534	$ (219,655)
% Change to Match Exactly, after Equal Increase	-2.14%	42.38%	5.65%	-21.84%

Spire East	LV Transport	Interruptible Sales	General L.P. Gas	Unmetered Gas Light	Vehicular Fuel
Net Expenses	$ 3,453,493	$ 253,661	$ 17,691	$ 31,451	$ 5,030
Return on Ratebase	$ 2,260,971	$ 105,441	$ 10,050	$ 19,193	$ 4,028
Income Tax	$ 2,086,997	$ 51,989	$ (1,199)	$ 1,653	$ 3,591
Total Cost of Service	$ 7,801,461	$ 411,091	$ 26,542	$ 52,297	$ 12,649
Current Rate Revenue	$ 14,890,501	$ 544,840	$ 12,417	$ 42,762	$ 24,746
$ Change to Match Exactly	$ (7,089,040)	$ (133,749)	$ 14,125	$ 9,535	$ (12,097)
% Change to Match Exactly	-47.61%	-24.55%	113.75%	22.30%	-48.89%
Equal Percentage Increase	$ 554,366	$ 20,284	$ 462	$ 1,592	$ 921
Rate Revenue with Equal Increase	$ 15,444,867	$ 565,124	$ 12,879	$ 44,354	$ 25,667
$ Change to Match Exactly, after Equal Increase	$ (7,643,406)	$ (154,033)	$ 13,663	$ 7,943	$ (13,019)
% Change to Match Exactly, after Equal Increase	-51.33%	-28.27%	110.03%	18.58%	-52.61%

Using the Residential class as an example, the "% Change to Match Exactly" row indicates that the currently tariffed Spire East residential rates, when applied to the current customers and usage of the Spire East residential class, provide slightly less revenue than was found in the CCOS study to be necessary to provide Spire with a system average rate of return on rate base. However, increasing those rates by 3.7% (Staff's recommended total revenue requirement increase for Spire East), would cause the Spire East Residential class to over-contribute more than the class revenue requirement found by the CCOS study. Staff notes that the revenue provided in this example exceeds the allocated expense for the class; failure to meet the expenses would constitute a true economic subsidy for CCOS purposes. Staff further reviews the relationship of each class's revenue to its allocation of return on rate base and income tax in considering appropriate interclass shifts.

This review shows that the Residential and Large General Service rate schedules, when applied to current customers and usages, produce revenues in the ballpark of the allocated class cost of service, but other rate schedules do not. While it may be tempting to adjust the tariffed rates to exactly match the revenue requirements indicated by these CCOS results, there are three primary things to consider. First, as discussed above, CCOS results are not as exact as they appear. Second, many or most customers cannot or will not pay a bill that more than doubles, which may result in further flight from the system or uncollectables. Finally, and most germane to this particular case, drastic changes in rates change the customers' opinions of which rate schedule they would like to be served on. If customers with expensive-to-serve characteristics are currently served on the Small General Service ("SGS") rate schedule as indicated by the CCOS, a tremendous increase in SGS rates will likely cause many of them to elect to pay the higher Large General Service ("LGS") customer charge to avoid the otherwise-applicable SGS rate increase. Then, when the company files its next rate case, another CCOS will be prepared indicating that the costly-to-serve customers, then on the LGS rate schedule, necessitate a hefty increase in LGS rates relative to SGS, and the cycle will continue.

Thus, in recommending interclass revenue responsibility shifts, Staff not only reviews the CCOS study results - as supplied in the table above for Spire East and the table below for Spire West - but also the resulting rate continuity characteristics which are less dependent on current class determinants.

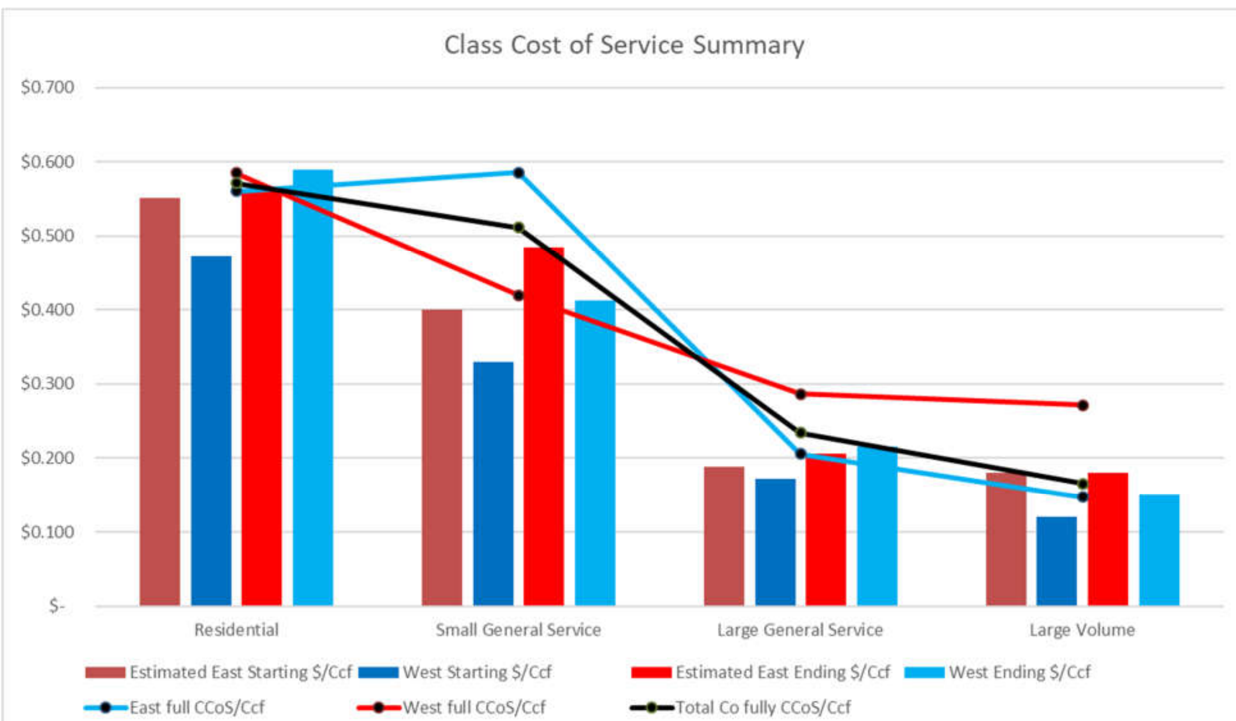
Spire West	Residential	General Services & LV	Transportation	Unmetered Gas Light
Net Expenses	$ 140,654,122	$ 31,781,070	$ 3,991,707	$ 3,805
Return on Ratebase	$ 61,821,974	$ 15,088,582	$ 4,500,895	$ 2,308
Income Tax	$ 14,954,577	$ 611,594	$ 5,632,169	$ (1,090)
Total Cost of Service	$ 217,430,673	$ 47,481,246	$ 14,124,771	$ 5,023
Current Rate Revenue	$ 175,409,043	$ 33,202,431	$ 17,081,051	$ 1,271
$ Change to Match Exactly	$ 42,021,630	$ 14,278,815	$ (2,956,280)	$ 3,752
% Change to Match Exactly	23.96%	43.01%	-17.31%	295.22%
Equal Percentage Increase	$ 40,493,599	$ 7,664,861	$ 3,943,202	$ 293
Rate Revenue with Equal Increase	$ 215,902,642	$ 40,867,292	$ 21,024,253	$ 1,564
$ Change to Match Exactly, after Equal Increase	$ 1,528,031	$ 6,613,954	$ (6,899,481)	$ 3,459
% Change to Match Exactly, after Equal Increase	0.87%	19.92%	-40.39%	272.14%

As discussed elsewhere, Staff undertook an extensive exercise to reconfigure the Spire West rates to establish rate continuity. Spire East's general service rate schedules are not as poorly aligned as those at Spire West, but matching the Spire East SGS and LGS rates to the CCOS study-determined class revenue requirement would cause such a misalignment. The table below indicates the annual consumption at which a customer's LGS volumetric rate savings would equal a customer's SGS customer charge savings. As illustrated below, currently, a customer would pay a lower bill on Spire East's SGS rate schedule than its LGS rate schedule, unless that customer uses more than 15,382 Therms in a given year. If the rates were set to the exact fully allocated cost of service, customers would financially elect to migrate from the SGS rate schedule to the LGS rate schedule for any usage over 6,795 Therms per year, which is well below the class threshold for LGS of 10,000 Therms used annually per customer. At Staff's recommended revenue responsibilities and rate design, the customer point of indifference is 11,359, which is in reasonable relationship to the 10,000 annual Therms breakpoint from the SGS rate schedule to the LGS rate schedule.

	Current	**Exact**	**Staff Recommended**
Difference in SGS & LGS Customer Charge	$ 90.00	$ 85.58	$ 94.46
Difference in SGS & LGS Energy Charge	$ (0.0702)	$ (0.1511)	$ (0.0998)
Annual consumption level of Indifference	15,382	6,795	11,359

In considering various interclass revenue responsibilities, Staff observed the relationship between general service customer charges and energy charges to ensure that the level of indifference between the SGS and LGS rate schedules is in excess of 10,000 Therms.

Staff's recommended interclass revenue responsibility shifts are designed to reasonably bring each class closer to producing the system-average rate of return used in determining Staff's recommended revenue requirement without increasing the revenue responsibility of classes that are found to be over-contributing. The graph below first provides the current ("starting") revenues for each indicated class within each rate district, divided by the Ccf of usage associated with that class. The graphs further illustrate the allocated cost of serving each class ("full CCOS"), and Staff's recommended class revenue requirement ("ending"), also divided by the number of Ccf used by that class. Note, the Spire East information is provided as estimated $ per Ccf, although Spire East customers are currently billed using Therms. Also note, the Spire West information does not reflect the recommended reconfiguration of the General Service classes and Large Volume classes, nor the creation of a Transportation class.



Note that this figure presents simple averages and does not represent the average bill a customer on these rate schedules may pay, given the various rate structure components such as customer charges, volumetric charges that vary with usage and/or season, demand charges, and the general seasonality of gas consumption.

Staff's rate design and rate structure recommendations in this case are largely designed to improve the reasonableness of customers' bills from a rate continuity perspective, while mitigating customer impacts in response to the substantial increases contemplated in this case.[8] Staff also took into account Spire's expressed desire to align rate structures across rate districts to facilitate eventual consolidation, if and when appropriate.

For Spire East, Staff recommends the following steps be undertaken in allocating interclass revenue responsibility:

Step 1a: Preserve the revenue responsibility of any class providing revenues in excess of its cost of service.

Step 1b: For any class providing revenues within 5% of its cost of service, increase that class's revenue responsibility by the amount indicated to exactly match its cost of service at an equal rate of return.

Step 2: For remaining classes, increase revenue responsibility proportionate to its contribution to revenues, except that it should not exceed the amount indicated to exactly match its cost of service at an equal rate of return.

Step 3: For remaining classes, increase revenue responsibility proportionate to its contribution to revenues.

The application of these steps produces the following:

Spire East	Residential	Small General Service	Large General Service	Large Volume	LV Transport
Total Cost of Service	$ 279,441,210	$ 42,640,661	$ 29,481,158	$ 823,305	$ 7,801,461
Current Rate Revenue	$ 275,083,737	$ 29,185,361	$ 26,954,134	$ 1,005,525	$ 14,890,501
$ Change Recommended Step 1	$ 4,357,473	$ -	$ -	$ -	$ -
$ Change Recommended Step 2	$ -	$ 4,460,733	$ 2,527,024	$ -	$ -
$ Change Recommended Step 3	$ -	$ 1,592,008	$ -	$ -	$ -
Recommended Class Revenue Responsibility	$ 279,441,210	$ 35,238,102	$ 29,481,158	$ 1,005,525	$ 14,890,501
% Change Recommended	1.58%	20.74%	9.38%	0.00%	0.00%

[8] This is a particular concern with the Spire West non-residential rate structure and design, and with Spire's enforcement of tariff provisions related to customer eligibility for service on a particular rate schedule.

Spire East *(continued)*	Interruptible Sales	General L.P. Gas	Unmetered Gas Light	Vehicular Fuel
Total Cost of Service	$ 411,091	$ 26,542	$ 52,297	$ 12,649
Current Rate Revenue	$ 544,840	$ 12,417	$ 42,762	$ 24,746
$ Change Recommended Step 1	$ -	$ -	$ -	$ -
$ Change Recommended Step 2	$ -	$ 1,898	$ 6,536	$ -
$ Change Recommended Step 3	$ -	$ 677	$ -	$ -
Recommended Class Revenue Responsibility	$ 544,840	$ 14,992	$ 49,298	$ 24,746
% Change Recommended	0.00%	20.74%	15.28%	0.00%

For Spire West, Staff recommends the following steps be undertaken in allocating interclass revenue responsibility:

Step 1a: Consolidate the General Service classes and Large Volume class for study purposes to establish rate continuity.

Step 1b: Preserve the revenue responsibility of any class providing revenues in excess of its cost of service.

Step 2: For remaining classes, increase revenue responsibility proportionate to its contribution to revenues.

The application of these steps produces the following:

Spire West	Residential	General Services & LV	Transportation	Unmetered Gas Light
Total Cost of Service	$ 217,430,673	$ 47,481,246	$ 14,124,771	$ 5,023
Current Rate Revenue	$ 175,409,043	$ 33,202,431	$ 17,081,051	$ 1,271
$ Change Recommended Step 1	$ -	$ -	$ -	$ -
$ Change Recommended Step 2	$ 43,809,184	$ 8,292,454	$ -	$ 317
Recommended Class Revenue Responsibility	$ 219,218,227	$ 41,494,885	$ 17,081,051	$ 1,588
% Change Recommended	24.98%	24.98%	0.00%	24.98%

C. Residential Rate Structure and Design

In considering the customer impact of this rate case on the Residential class in particular, it is important to consider the impact of the ISRS. Currently, Spire West residential customers pay a customer charge of $20.00 per month, as well as a current ISRS charge of $3.32 per month. Spire East residential customers pay a customer charge of $22.00 per month, and an ISRS charge of $2.78 per month. However, the ISRS charges will be reset to zero upon conclusion of this case.

Staff's recommended increases in the revenue requirements of the residential rate schedules in this case are approximately $43.8 million for Spire West, and $4.3 million for Spire East. The net impact of this case for incorporating the recommended increase in the non-ISRS rates and removing the annual revenue that is produced by the current ISRS rates is provided in the table below:

	West	East
Revenue Requirement Increase:	$ 43,809,184	$ 4,381,600
Old ISRS:	$ 19,586,193	$ 20,532,550
Net Change Experienced:	$ 24,222,990	$ (16,150,951)
% Net Change Experienced	12%	-5%

It is important to remember that these changes do not include the cost of gas, which is included in the PGA. It is also important to recall that the ISRS is a flat charge per customer per month by rate schedule. In other words, it is felt more by lower users, and its rebase to zero in this case will be felt more by lower users.

Staff Expert/Witness: Sarah L.K. Lange

D. Residential Customer Charge

The residential customer charge should be sized to recover the variable costs of serving a customer, plus the portion of costs and expense allocated to the residential class that are associated with providing service to a meter, including the average cost of a meter and service line, and a portion of the allocation of the cost and expense of making service available for all customers. Staff included the below costs in the calculation of the residential customer charge:

- Distribution – services (investment and expenses)
- Distribution – meters and regulators (investment and expenses)
- Customer deposits
- Customer billing expenses
- Uncollectible accounts (write-offs)
- Customer service & information expenses
- Portion of income taxes

Staff's CCOS found the fully allocated functionalized customer cost on a per customer basis to be $19.41 for Spire West, and $24.06 for Spire East. As discussed above, CCOS results are not as precise as they can appear. Two important factors to consider in sizing a customer charge – particularly a residential customer charge – are customer impacts and revenue stability. Utilities tend to obtain more residential customers over time. Although Spire – particularly the portion of Spire then operating as Laclede – has experienced net attrition, Spire West continues to expand and grow. Utilities enjoy the most financial upside by having a relatively high fixed revenue per customer when experiencing growth, and they avoid the most financial downside by having a relatively low fixed revenue per customer when experiencing net attrition. However, a fixed customer charge that exceeds the marginal cost of serving an additional customer will contribute to overearning in a customer net growth environment, and having a customer charge that is artificially low contributes to inefficient system expansion. Inefficient system expansion corrects with customer attrition when cost-based rates are eventually set; however this correction results in underutilized infrastructure. The existence of underutilized infrastructure will then cause the fully allocated functionalized customer cost on a per customer basis to exceed the marginal cost of serving a customer.

In simplified terms, aside from the obvious considerations of customer impacts and a CCOS-produced customer charge calculation, it is important to keep in mind that customers coming onto and leaving the system are influenced by the size of the customer charge. Retention of existing customers comes with a much lower infrastructure cost than addition of new customers, and those infrastructure costs are borne by all customers. As discussed more fully below, Staff has serious concerns with the level of infrastructure currently fully utilized. It appears Spire West may have infrastructure that was deployed with an expectation of customers that never materialized, and Spire East may have infrastructure now unused due to attrition. The existence of these costs, particularly at the distribution level, which are disproportionally allocated to the Residential and SGS classes cause the fully allocated functionalized customer cost on a per customer basis to exceed the marginal costs of serving a customer to a level that may be unreasonable. The marginal cost of restoring service to a site with an existing service line and meter is significantly less than the cost of setting a new service line and meter, which is significantly less than the cost of running a new distribution line and setting a new service line and meter. The marginal cost of serving a new customer also varies by terrain, ground conditions, and presence of other infrastructure or natural features such as roads, phone lines, streams, or other structures.

Staff considered the bill impacts of various customer charge levels – (1) the fully allocated functionalized customer cost, (2) the existing level, and (3) the approximate total of current ISRS and customer charge, taking into account the existing ISRS charge which will rebase to zero at the conclusion of this case. These comparisons do not account for the cost of gas, which is recovered through the PGA:

Spire West Residential Non-Gas Bill Comparison

		New Bill if Customer Charge Set at:			% Change if Customer Charge Set at:		
	Current Bill with ISRS	$ 19.41	$ 20.00	$ 22.50	$ 19.41	$ 20.00	$ 22.50
Customer Using 10 Ccf Winter	$24.88	$22.26	$22.76	$24.86	-11%	-9%	0%
Customer Using 50 Ccf Winter	$31.14	$33.67	$33.78	$34.28	8%	8%	10%
Customer Using 100 Ccf Winter	$38.96	$47.93	$47.57	$46.05	23%	22%	18%
Customer Using 200 Ccf Winter	$54.59	$76.44	$75.13	$69.60	40%	38%	27%
Customer Using 300 Ccf Winter	$70.23	$104.96	$102.70	$93.15	49%	46%	33%
Customer Using 400 Ccf Winter	$85.87	$133.47	$130.27	$116.70	55%	52%	36%
Customer Using 500 Ccf Winter	$101.51	$161.99	$157.84	$140.25	60%	55%	38%

Spire East Residential Non-Gas Bill Comparison

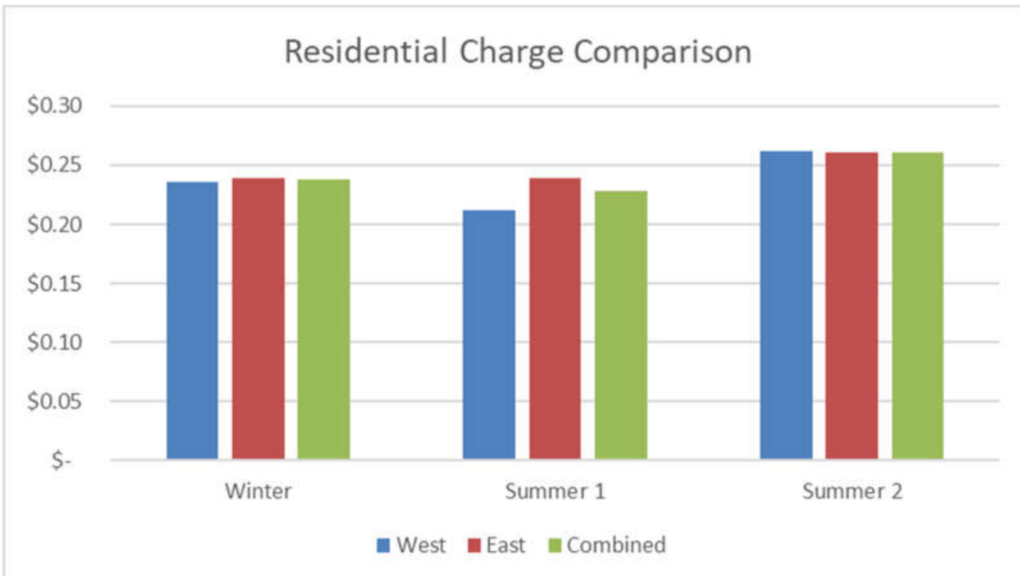
		New Bill if Customer Charge Set at:			% Change if Customer Charge Set at:		
	Current Bill with ISRS	$ 24.06	$ 22.00	$ 25.75	$ 24.06	$ 22.00	$ 25.75
Customer Using 10Therm Winter	$27.11	$26.17	$24.42	$27.61	-3%	-10%	2%
Customer Using 50Therm Winter	$36.45	$34.62	$34.11	$35.03	-5%	-6%	-4%
Customer Using 100Therm Winter	$48.11	$45.18	$46.23	$44.31	-6%	-4%	-8%
Customer Using 200Therm Winter	$71.44	$66.29	$70.45	$62.88	-7%	-1%	-12%
Customer Using 300Therm Winter	$94.77	$87.41	$94.68	$81.44	-8%	0%	-14%
Customer Using 400Therm Winter	$118.10	$108.52	$118.90	$100.00	-8%	1%	-15%
Customer Using 500Therm Winter	$141.43	$129.64	$143.13	$118.57	-8%	1%	-16%

Please note that the Spire East comparison retains use of Therms as the determinant for both comparisons, to provide meaningful percentage changes.

Considering Staff's recommended residential revenue requirement increases, the various customer bill impacts including ISRS, the fully allocated functionalized customer cost on a per customer basis to exceed the marginal cost of serving a customer, the potential for excess fixed revenue recovery to contribute to overearnings at Spire West, concern for additional attrition at Spire East, and Staff's recommended Residential Retention rate schedule (discussed below), Staff recommends the Spire West customer charge be retained at $20.00, and that the Spire East Customer charge be retained at $22.00.

Staff notes that if the Commission would order alignment of the Spire East and Spire West residential rate schedules at Staff's recommended residential revenue requirements, setting the customer charge at approximately $22.50 would result in volumetric rates that are very similar between the rate districts, as indicated below in the table indicating current and resultant residential customer and volumetric charges, and the graph indicating resultant volumetric charges:

	West	East (Therms)	West	East (Therms)	East (Ccf)	Combined
	Current		After Increase		After Increase (Therms converted)	
Customer Charge	$ 20.00	$ 22.00	$ 22.50	$ 22.50	$ 22.50	$ 22.50
Winter	$ 0.15637	$ 0.23330	$ 0.23551	$ 0.2347079	$ 0.23940	$ 0.23769
Summer 1	$ 0.14073	$ 0.20994	$ 0.21195	$ 0.2347935	$ 0.23949	$ 0.22785
Summer 2	$ 0.17362	$ 0.25435	$ 0.26149	$ 0.2558850	$ 0.26100	$ 0.26119



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E. Volumetric Rates

The summer inclining block design developed in the last rate cases, GR-2017-0215 and GR-2017-0216, should be retained for the reasons stated in the Report and Order in those cases. The volumetric rates that retain this summer inclining block design, adjusted for the recommended revenue requirement increase and the various customer charge levels discussed above, are provided in the table below.

	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf
	West	**West**	**West**	**East**	**East**	**East**
	$ 19.41	**$ 20.00**	**$ 22.50**	**$ 24.06**	**$ 22.00**	**$ 25.75**
Winter	$ 0.28515	$ 0.27567	$ 0.23551	$ 0.21534	$ 0.24710	$ 0.18935
Summer 1	$ 0.25663	$ 0.24810	$ 0.21195	$ 0.21542	$ 0.24719	$ 0.18942
Summer 2	$ 0.31661	$ 0.30609	$ 0.26149	$ 0.23477	$ 0.26940	$ 0.20643

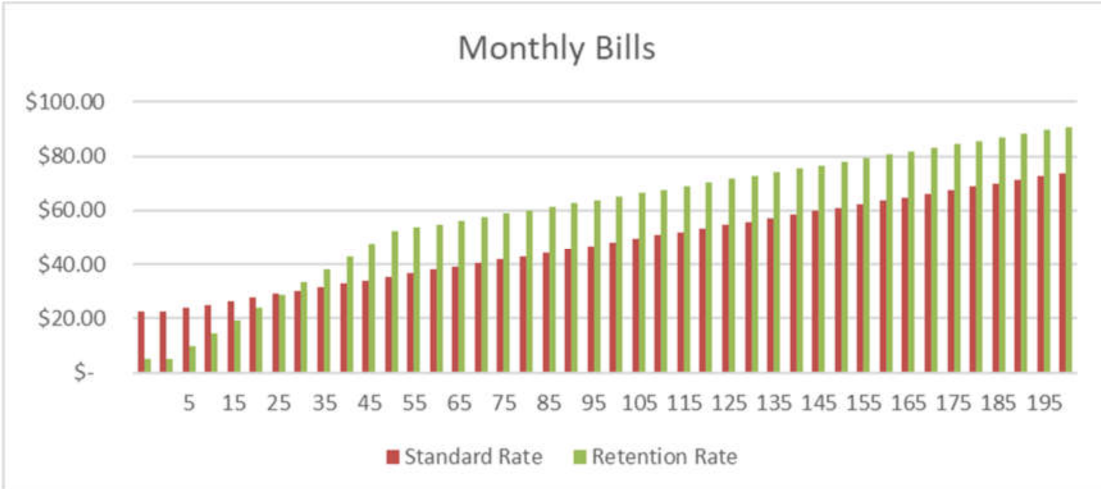
F. Residential Retention Optional Schedule

To address the attrition issue at Spire, Staff recommends creation of a Residential Retention Rate optional rate schedule, as illustrated below:

	Illustrative "Standard" Schdeule		Illustrative Retention Schdeule	
Customer Charge	$	22.50	$	5.00
Winter < 50 Ccf	$	0.25966	$	0.94651
Winter >50 Ccf	$	0.25966	$	0.25966
Summer 1	$	0.24758	$	0.94651
Summer 2	$	0.28333	$	0.28333

Under this option customers would pay a customer charge sized to cover only the costs that Spire would not incur if that customer ceased receipt of service – approximated at this time as $5.00 per month – reflecting estimates of the cost of rendering a bill, mailing a bill, processing payment, and a small allocation of customer service expense. This would replace the otherwise applicable customer charges proposed in this case of approximately $20.00 to $25.00 per month. Customers using less than 25 Ccf per month would experience a reduced bill on the retention rate compared to the standard rate. However, this service option has a much higher per-Ccf charge for the first 50 Ccf per month than the standard rate. The higher-than-normal per Ccf charge will not be applied to usage over 50 Ccf per month as a "safety valve," so that in a severe-usage scenario, a customer on this rate option would not pay more than approximately $15.00 to $20.00 more in a given month than they would pay on the standard rate. The exact dollar value of the differential will vary based on final rates.

Under the example above, for any level of usage over 50 Ccf per month, the premium is capped at $16.99. Based on preliminary estimates, the charge for usage below 50 Ccf per month would be approximately $0.95 per Ccf, with usage over that threshold being charged the approximate $0.26 to $0.28 per Ccf applicable to usage on the standard rate. The example above is illustrated in the graph below:



The objective of this rate option is to retain customers who use a minimal amount of gas, perhaps for cooking or as decorative or emergency heating. The availability of this rate would be limited to structures that have received service for 108 months in the prior 10 years, or have been equipped to receive gas service for 15 or more years, as the revenue provided over that time should roughly meet or exceed the investment associated with the initial cost of connecting that customer. This facilitates retention of those customers who would otherwise be vulnerable to leave the system, and reduces the subsidization of new growth and high usage by customers who occupy facilities that have been on the system for some time, and who may have pursued efficiency efforts or otherwise reduced their consumption. The design includes a safety valve so that if customers who opt onto the rate ultimately do use more than 50 Ccf in a month, the rate applicable to those Ccf drops back to the level otherwise applicable through the standard rate. This safety valve level also coincides with the break point for treatment under the Staff's recommended RNA.

IV. Spire East Non-Residential Rate Structure and Design

A. General Service Classes and Large Volume

Due to changes in rate structure made in the last rate case, the Spire East non-residential rates are not as poorly aligned with the customer characteristic requirements as the Spire West rates. Staff recommends that rate continuity – that is, the reasonable transition from one rate schedule to another - be considered and implemented to the greatest extent possible when rates are designed at the conclusion of this case, and that tariffs be revised to more clearly delineate required changes in customer placement.

In response to Data Request ("DR") No. 0282, Spire provided information indicating that daily consumption determinants are generally available for analysis for virtually all customers, but are not readily includable in the billing systems at this time. Staff recommends that Spire obtain these determinants for development and refinement of the non-residential non-transportation rate schedules at the earliest future opportunity. Staff is optimistic that a rate structure incorporating demand determinants could be expanded in this case for customers of Spire East, and incorporated for customers of Spire West in the next rate case. However, given the changes in class configurations discussed herein,[9] Staff is unable to provide exact recommendations at this time.

At this time, pending availability of additional demand determinate data, Staff recommends that charges on these rate schedules be adjusted as a uniform percent adjustment to all rate elements.

B. Interruptible Rate Schedule

In response to DR No. 0352, Spire indicated that it has not interrupted customers on its interruptible service schedule within the last ten years, even during extreme weather events, including the February 2021 event, when other customers were curtailed.[10] Staff recommends elimination of this schedule.

C. Other Rate Schedules

At this time, Staff recommends that charges for remaining rate schedules (specifically, unmetered gas lighting, General L.P. Gas, and Vehicular Fuel) be adjusted as a uniform percent adjustment to all rate elements. Staff further recommends that Spire take reasonable action to

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[9] These changes include elimination of the Spire East interruptible class, creation of a Spire West transportation class, and the realignment of the Spire West non-residential rate schedules.

[10] Spire's responses stated,

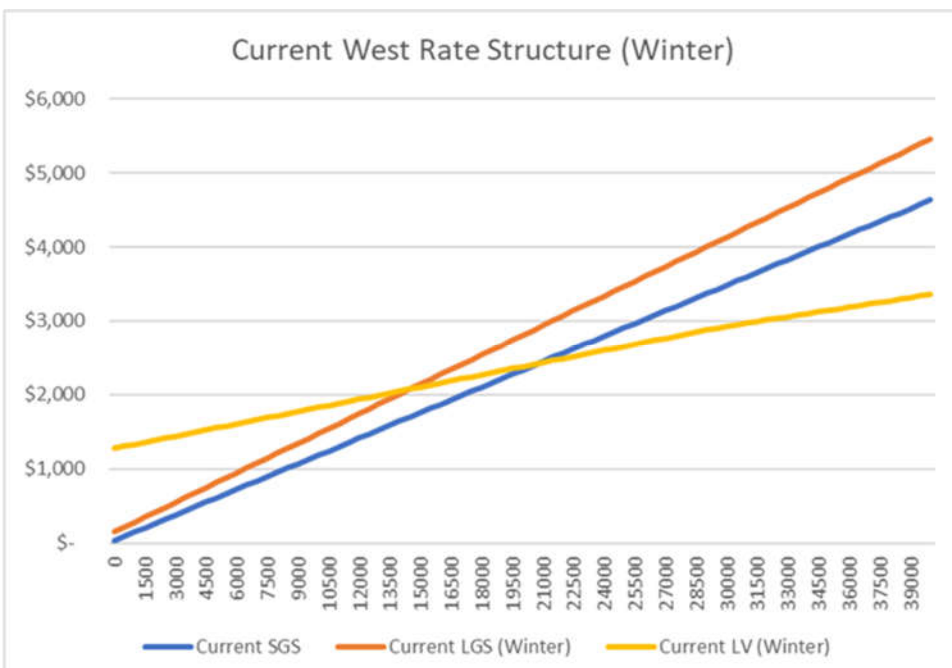
> 1) Spire MO East has not had an official interruption of service in the past 10 years for the Interruptible Service rate. 2) There were no other customer classes interrupted for MO East during this time period. 3) There was one curtailment event between February 8, 2021 and February 23, 2021. Approximately 50 commercial/industrial transportation customers were asked to curtail from February 15, 2021 through February 19, 2021 in the Southwest Missouri area of Spire's service territory.

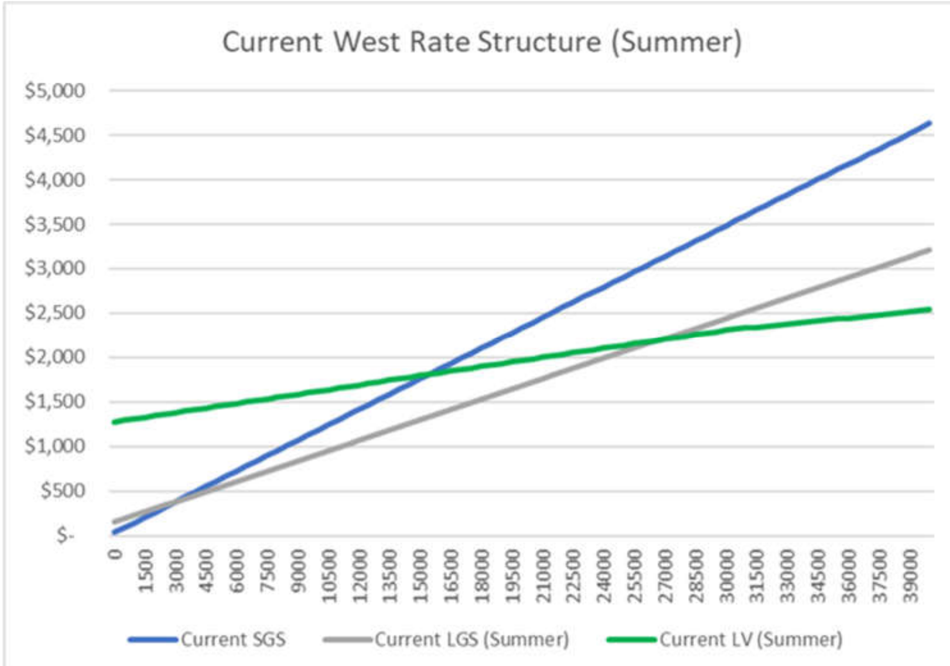
ensure that its estimated usage for unmetered gas lighting is as accurate as is practicable, in this and future cases.

V. Spire West Non-Residential Rate Structure and Design

A. General Service Classes and Large Volume

Spire experiences significant rate schedule-switching between the Small and Large General service classes in each rate district. As illustrated below in comparisons of monthly bills, it is cheaper to be served on Spire West's SGS schedule than its LGS schedule at any level of winter usage, and an LGS summer bill only becomes cheaper than an SGS bill at usage exceeding 3,000 Ccf per month; however, Spire's tariff provides that the SGS class is the required rate schedule for customers consuming less than 10,000 Ccf annually. A customer would have to have significant summer usage in excess of 3,000 Ccf per month to make up the additional cost of the LGS customer charge, ISRS charge, and winter cost of gas.





Staff recommends realignment of these rate schedules so there is minimal financial advantage (or harm) to the customer (or utility) from a customer being placed on the "wrong" rate. Staff also recommends Spire institute processes to annually place customers on the rate consistent with the tariff definition of that rate, and to ensure Spire's compliance with its own tariff. Well-designed customer, demand, and commodity charges will ensure equitable treatment of customers within and across the newly-configured classes.

A new rate class should be created within Spire West for customers who procure their own gas and receive only transportation service from Spire, as already exists for Spire East.

To facilitate the development of rates at the conclusion of this rate case based on determinants that align with Spire's current tariff provisions for class eligibility, Staff has undertaken an analysis of the usage of all Spire non-residential customers. This process was complicated by the presence of billing errors and corrections in the billing data. The presence of such errors is not uncommon and is not in and of itself problematic when it exists on a reasonable scale, but Staff did not have a simple means to verify whether a very high reading for a particular customer was the result of a billing error or the result of a lot of consumption by that customer. Staff intends to work with Spire during this case to address these issues to develop a comprehensive set of billing determinants and essentially revenue neutral rates to serve as the starting point for final rate development in this case.

For Spire West all non-residential non-transport customers with annual net consumption of less than 10,000 Ccf should be served on the SGS class, and any changes to the existing tariff language that Spire believes necessary to require this placement should be made.[11] In the analysis described below, Staff has placed these customers in the SGS class.

Staff recommends that all non-residential non-transport customers with annual net consumption in excess of 10,000 Ccf, but which did not use more than 30,000 Ccf in a single billing cycle be placed in the LGS class, to be effectuated by slight revisions and enforcement of existing tariff language.[12] Staff has done so in the analysis described below. Remaining customers who used more than 30,000 Ccf in a single month have been placed in the Large Volume Service ("LVS") class for this analysis. The results of this analysis indicate that if all non-residential non-transport customers were placed in the appropriate rate class based on test year billing data, the rates provided below would produce more reasonable rate schedule cross-over points,

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[11] Staff's review of the existing tariff language indicates that this appears to be an existing requirement. The first sentence of the Availability section, found on Sheet No. 3, states

> To natural gas service supplied at one point of delivery to commercial customers and industrial customers whose natural gas requirements at a single address or location do not exceed 10,000 Ccf* in any one year.

The internal asterisk refers to the following language

> * Annual consumption for purposes of the "Availability" section in Sheet Nos. 3 and 4 shall be based on the twelve months ended for the most recent fiscal year, except for new customers not connected to the company's system during such period, in which case, the company shall use estimated consumption, if the customer has not been connected to the company's system for a full twelve months, or consumption for the first twelve month period in which the customer was connected to the company's system. Such rate schedule shall be used for billing such customer until annual consumption is re-determined by the company, which redetermination shall be made no later than December 31, 2019 and each December 31st thereafter. If such re-determined usage shows that the customer should receive service under a different rate schedule, the customer shall receive service under that new rate schedule until usage is again re-determined.

[12] The LGS Availability provision on current Sheet No. 4 provides,

> To natural gas service supplied at one point of delivery to commercial customers and industrial customers whose natural gas requirements at a single address or location are greater than 10,000 Ccf* in any one year and does not exceed 30,000 Ccf in any one month. Upon application and approval by the company, this rate is also applicable to commercial and industrial customers whose natural gas requirements at a single address or location exceeds 30,000 Ccf in any one month of a twelve-month billing period.

while matching the revenue customers in their current rate classes produced during the test year as normalized:

Class	Customer Charge	Summer Block 1	Summer Block 2	Winter Block 1	Winter Block 2	Block Break Point
SGS	$ 35.37	$ 0.116242	$ 0.132983	$ 0.116242	$ 0.132983	5,000
LGS	$ 168.36	$ 0.089645	$ 0.068703	$ 0.089645	$ 0.089646	5,000
LVS	$ 1,219.44	$ 0.034797	$ 0.023056	$ 0.055740	$ 0.043483	36,000

This design incorporates a slight incline for SGS customers with usage that would be associated with a typical LGS customer, at an incline designed to recover the increased customer charge revenue that would come from the customer taking service on the LGS rate schedule.

These rates are designed to collect the same level of revenue as the current Spire West tariff with customers served on the appropriate rate schedule to establish reasonable continuity from one rate class to the next.[13] As an illustration, a customer using 5,000 Ccf in a given month would pay the same bill, on average, whether served on SGS or LGS, but would pay a much higher bill if they were served on Large Volume ("LV"). Similarly, a customer using just under 30,000 Ccf per month would pay the same bill if they were served on LGS or LV, but pay a much higher bill if they were served on SGS. Comparisons at various levels of usage are provided in the chart, below:

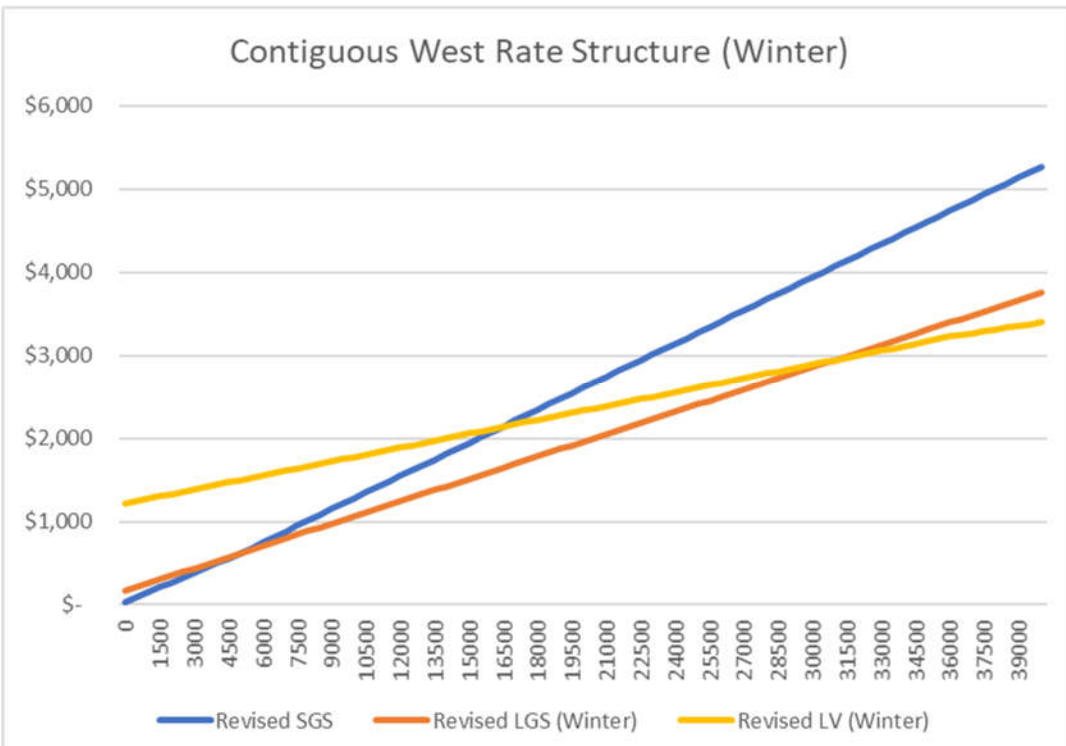
	Monthly Bills			Average $/Ccf		
Level of Usage:	5,000	29,460	60,000	5,000	29,460	60,000
SGS	$ 617	$ 3,869	$ 7,931	$ 0.1233	$ 0.1313	$ 0.1322
LGS Winter	$ 617	$ 2,809	$ 5,547	$ 0.1233	$ 0.0954	$ 0.0925
LGS Summer	$ 617	$ 2,297	$ 5,035	$ 0.1233	$ 0.0780	$ 0.0839
LGS Average	$ 617	$ 2,553	$ 5,291	$ 0.1233	$ 0.0867	$ 0.0882
LV Winter	$ 1,498	$ 2,862	$ 4,270	$ 0.2996	$ 0.0971	$ 0.0712
LV Summer	$ 1,393	$ 2,245	$ 3,653	$ 0.2787	$ 0.0762	$ 0.0609
LV Average	$ 1,446	$ 2,553	$ 3,961	$ 0.2892	$ 0.0867	$ 0.0660

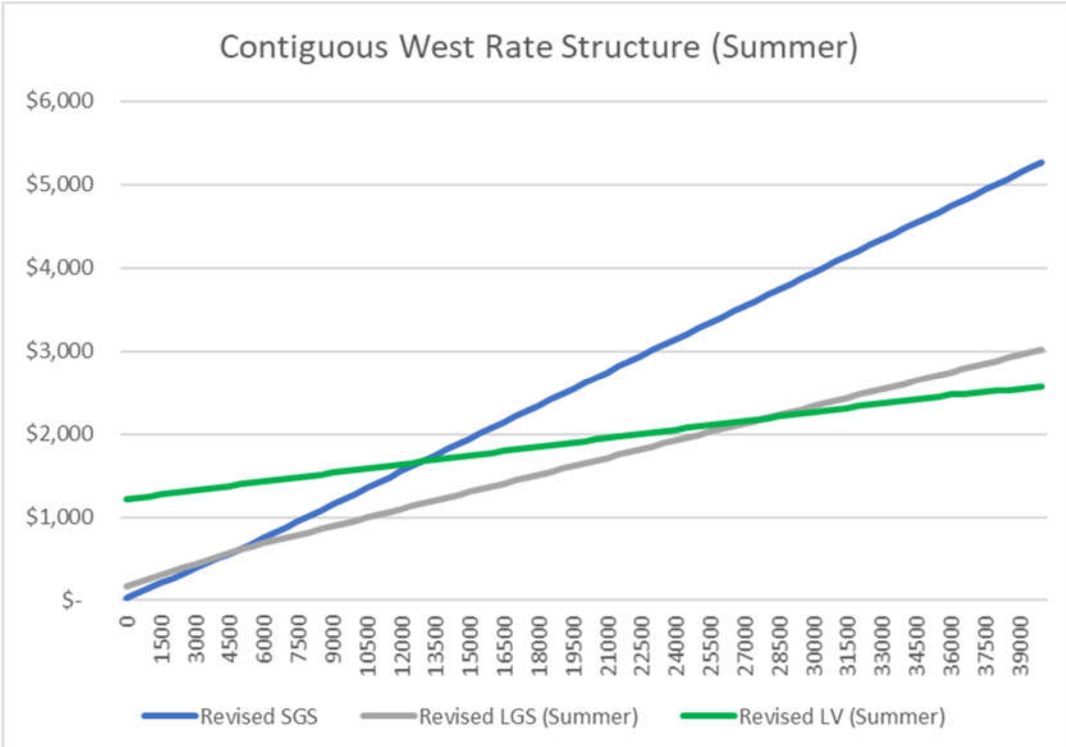
This rate design is the result of a subjective analysis of Spire West's current rates and the billing determinants developed through the above-described process to create rate designs that reflect reasonable cross-overs among classes while minimizing customer rate volatility and

[13] These rates do not reflect the additional revenue requirement recommended to be collected in this rate case. As provided below, Staff recommends these rates be increased through a uniform percentage adjustment, unless determinants become available to incorporate a reasonable demand-related element.

bill impacts. Staff undertook this exercise with the understanding that Spire seeks to consolidate certain rate schedules both within each rate district and across rate districts. Given the structural differences across rate districts and discontiguous rate designs in place within rate districts, this exercise first targets alignments of rates across classes within each district. Staff has also adjusted the Spire West LV rate structure to align with the block break point of 36,000 Ccf per month, consistent with Spire East's current structure. The additional revenue this would generate from LV customers has been removed from the LV customer charge in this analysis. The current monthly ISRS charges have been incorporated into the customer charge as well.

The more orderly transitions this design achieves relative to Spire West's current design are depicted in the graphs below:





Notice that at the lowest levels of usage, the SGS class is the most advantageous for a customer, at middle levels the LGS class is most advantageous, and at high levels of consumption the LVS class offers the lowest customer bill.

At this time, pending availability of additional demand determinant data, Staff recommends that charges on these rate schedules **as reconfigured** be adjusted as a uniform percent adjustment to all rate elements.

B. Transportation Rate Schedule

Staff recommends development of a separate rate schedule for customers within the Spire West rate district that use the transmission and distribution system and related equipment to transport their own privately purchased gas. Currently, these customers are served on various rate schedules via a special tariff term. It is more reasonable to design a separate transportation rate schedule, preferably aligned with the terms of the Spire East transportation rate schedule as closely as possible.

C. Unmetered Gas Lighting

At this time, Staff recommends that charges for remaining rate schedules (specifically, unmetered gas lighting) be adjusted as a uniform percent adjustment to all rate elements. Staff further recommends that Spire take reasonable action to ensure that its estimated usage for unmetered gas lighting is as accurate as is practicable, in this and future cases.

Staff Expert/Witness: Sarah L.K. Lange

VI. Complications to Accurate Cost of Service Modeling

A. Concerns with System Growth and Attrition

Spire's residential customer charge is heavily influenced by the presence of underutilized infrastructure. For example, as indicated in Spire East's continuing property record, approximately 815,000 meters are included in Spire East's rate base, at a gross value of approximately $77 million. However, in response to Staff DR, Spire reported the total meter count for Spire East as 690,333 meters, with only 662,286 of those meters providing service to an active account. Spire's DR responses indicate a pattern of continual new additions in support of new service while service is discontinued at other locations, as indicated below:

New small meters pursuant to service extensions 2/16 response to DR 205					
East			**West**		
2018	2019	2020	2018	2019	2020
2,720	2,842	3,225	3,968	4,096	4,115
		8,787			12,179

DR 203-204 meters removed without replacement				
East Res	7,533		West Res	6,453
East SGS	1,643		West SGS	2,501
	9,176			8,954

A summary of the changes in the number of connected and disconnected meters is provided below:[14]

	2018 Connected	2021 Connected	2018 Disconnected	2021 Disconnected	2018 Total	2021 Total	Connected Change	Disconnected Change	Total Change	Current % Disconnected
East Residential	610,954	620,886	36,649	24,811	647,603	645,697	9,932	(11,838)	(1,906)	3.84%
East Combined General Services	40,784	41,188	4,095	3,235	44,879	44,423	404	(860)	(456)	7.28%
East Large Volume non-Transport	69	39	1	1	70	40	(30)	-	(30)	2.50%
East Combined Transportation	165	173	-	-	165	173	8	-	8	0.00%
West Residential	461,254	501,094	17,358	10,938	478,612	512,032	39,840	(6,420)	33,420	2.14%
West Combined General Service	54,770	33,958	3,896	2,160	58,666	36,118	(20,812)	(1,736)	(22,548)	5.98%
West Large Volume Non-Transport	16	15	-	-	16	15	(1)	-	(1)	0.00%
West Combined Transport	476	467	9	3	485	470	(9)	(6)	(15)	0.64%

An approximation of the changes in meters as provided in this case in DR No. 0282 since the most recent Spire rate case as provided in DR No. 0314 is provided below:

East	2017	New Meters Installed	Meters removed not replaced	2021
Meters	692,482	8,787	(9,176)	690,120
Residential Active	610,954			620,886
Total GS Active	40,784			41,188
Residential Inactive	36,649		7,533	24,811
Total GS Inactive	4,095		1,643	3,235
Running total:	692,482	701,269	692,093	**(1,973)**
West				
Meters	537,278	12,179	(8,954)	548,150
Residential Active	461,254			501,094
Total GS Active	54,770			33,958
Residential Inactive	17,358		6,453	10,938
Total GS Inactive	3,896		2,501	2,160
Running total:	537,278	549,457	540,503	**7,647**

It is important to consider that each meter added or removed includes system costs that far exceed the rate base value of the meter. Based on extensive discussions between Staff and Spire, Spire does not have accessible records to track the changes in the system over time; however, it is reasonable to conclude that neighborhoods are built with gas service installed at homes or businesses, but over time, customers cease taking gas service in favor of all-electric energy.

[14] See DR No. 0282 in the instant case, and DR No. 0314 in the most recent Spire case, GR-2017-0215 and GR-2017-0216. Note that shifts have occurred in customer classes served and rate switching has occurred.

Meanwhile and elsewhere, new neighborhoods are being built out with gas services in place. This process leaves an ever-expanding patchwork of costly infrastructure in-ground, and underutilized. A reasonable means to address this issue includes offering an option, such as the Staff's proposed residential retention rate, to keep those marginal usage customers connected and provide some level of defrayment of system costs. However, it is imperative going forward to ensure that extension policies and service area expansions are robustly supported by immediate revenues or contributions offsetting the required rate base.

B. Concerns with Internal Recordkeeping Concerning System Growth and Attrition

Spire has had difficulty retrieving data related to its customer level and the cost-effectiveness of isolated system expansion projects. An internal audit (attached as Appendix 2, Confidential Schedule SLKL-d1) noted that adequate processes are not in place to confirm that customers in expansion areas are paying amounts required under current tariff. The audit issues are not fully resolved at this time. Staff cautions against the grant of further CCNs pending resolution of all audit issues, and a demonstration by Spire of adequate internal record keeping abilities and practices.

Staff Expert/Witness: Sarah L.K. Lange

VII. Weather and Conservation Adjustment Rider (Staff alternative RNA)

Staff's alternative Rate Normalization Adjustment ("RNA") is a mechanism that is designed to insulate the company from fluctuations in residential and SGS customer usage due to weather and conservation.[15] Spire's current mechanism, the Weather Normalization Adjustment Rider ("WNAR"), is limited to insulating the company from fluctuations due to weather only. The RNA does not distinguish between conservation efforts initiated by the company, such as the promotion of ratepayer funded energy efficiency measures, and the actions that residential and SGS customers take to wisely utilize natural gas and minimize waste on their own. For the reasons stated here forthwith, Staff recommends the adoption of the RNA instead of the company's currently effective WNAR.

[15] The authorizing statute, RSMO 386.266.3. does not define "conservation". Webster's Third New International defines "conservation" as "The wise utilization of a natural product especially by a manufacturer so as to prevent waste and insure future use of resources that have been depleted."

The RNA accomplishes its designed purpose by insulating the company from fluctuations in the Block 2 portions of its revenue requirement subject to volumetric recovery. All sales in Block 2 are reconciled to rate case billing determinants. The company retains the risk in the Block 1 volumetric recovery; there is no reconciliation of Block 1 sales to rate case billing determinants. The breakpoint between Block 1 and Block 2 is discussed below. This design insulates the company from sales fluctuations associated with deviations in weather-related sales from what is normal, whether driven by the actual weather or by conservation efforts related to weather. The RNA fully protects the company from ratepayer-funded conservation efforts that target customers with usage exceeding the first block.

Under the RNA, the company retains the opportunity to increase its return by increasing the number of customers taking service, but the company retains the risk derived from decreases in its return driven by customers leaving the system. The RNA's impact on customers includes: (1) limitation of the degree to which residential ratepayers collectively under- or over-contribute and (2) passing along to residential ratepayers the benefit (or detriment) of increases (or decreases) in sales associated with customer growth (or loss).

An adjustment to the RNA rate would be filed annually by the utility based on changes, if any, in actual volumetric sales compared to the level of volumetric sales, by block, used in establishing rates in the rate case. Since the RNA measures changes in actual sales, it is not necessary to depend on speculative deemed savings or generic load shapes based on general assumptions of how customers conserve energy. This design also avoids issues that have been associated with the WNAR, including the failure of a third party to record the daily temperatures and the ranking of weather. Appendix 2, Schedule MLS-d1 is a specimen tariff sheet for Staff's alternative RNA.

Staff Expert/Witness: Michael L. Stahlman

Breakpoints to Identify Block 1 and Block 2

Staff reviewed the Spire West residential cumulative frequency information to determine the percentage of customers per month with bills exceeding the level of usage associated with Spire's existing billing Block 1, 50 Ccf.[16] Those results are provided below:

West Res.	JAN-20	FEB-20	MAR-20	APR-20	MAY-20	JUN-20	JUL-20	AUG-20	SEP-20	OCT-19	NOV-19	DEC-19
10	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
20	99%	99%	98%	95%	81%	45%	29%	24%	26%	53%	96%	98%
30	97%	98%	95%	87%	58%	17%	8%	7%	7%	27%	90%	96%
40	95%	96%	91%	75%	38%	7%	3%	3%	3%	14%	82%	93%
50	93%	94%	86%	61%	24%	4%	2%	2%	2%	7%	73%	89%
60	90%	91%	80%	47%	15%	2%	1%	1%	1%	4%	63%	84%
70	86%	88%	72%	34%	9%	2%	1%	1%	1%	3%	53%	77%
80	82%	84%	62%	24%	6%	1%	1%	1%	1%	2%	43%	69%
90	76%	78%	53%	17%	4%	1%	1%	1%	1%	1%	34%	60%
100	70%	72%	44%	12%	3%	1%	1%	1%	1%	1%	26%	51%
110	62%	64%	35%	9%	2%	1%	1%	1%	1%	1%	20%	43%
120	55%	57%	28%	6%	1%	1%	0%	1%	1%	1%	16%	35%
130	48%	49%	23%	5%	1%	1%	0%	0%	1%	0%	12%	29%
140	41%	42%	18%	4%	1%	1%	0%	0%	1%	0%	9%	23%
150	35%	36%	14%	3%	1%	0%	0%	0%	0%	0%	7%	19%

The same information is provided below for Spire East, in billed Therms. Note that the conversion of billed Therms to Ccf is not expected to have a meaningful impact on the results of this review.

East Res.	JAN-20	FEB-20	MAR-20	APR-20	MAY-20	JUN-20	JUL-20	AUG-20	SEP-20	OCT-19	NOV-19	DEC-19
10	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
20	99%	99%	98%	96%	85%	53%	34%	26%	28%	50%	96%	98%
30	98%	98%	97%	90%	65%	21%	10%	8%	8%	24%	90%	97%
40	96%	96%	94%	81%	45%	9%	4%	3%	4%	12%	82%	95%
50	94%	95%	91%	68%	29%	4%	2%	2%	2%	6%	73%	92%
60	92%	93%	87%	55%	18%	3%	1%	2%	2%	4%	63%	88%
70	88%	90%	80%	42%	11%	2%	1%	1%	2%	2%	54%	82%
80	84%	86%	73%	30%	7%	2%	1%	1%	1%	2%	45%	75%
90	78%	81%	64%	22%	5%	1%	1%	1%	1%	1%	37%	67%
100	72%	75%	55%	16%	3%	1%	1%	1%	1%	1%	30%	58%
110	65%	68%	46%	12%	2%	1%	1%	1%	1%	1%	24%	50%
120	58%	60%	38%	8%	2%	1%	0%	1%	1%	1%	19%	42%
130	50%	53%	31%	6%	2%	1%	0%	0%	1%	1%	15%	35%
140	43%	46%	24%	5%	1%	1%	0%	0%	1%	1%	12%	29%
150	37%	39%	20%	4%	1%	1%	0%	0%	1%	0%	10%	23%

[16] Note that the residential break point of 50 Ccf per month coincides with the treatment of achieving equivalent rates under the Staff's proposed residential retention rate option, discussed in Section III.F., above.

A review of this information indicates that the existing billing block of 50 units is not unreasonable for use as a break-point for sales assumed to vary largely with the number of customers taking service, and sales assumed to vary largely due to weather or to be most susceptible to reduction due to conservation.

Given the noted SGS/LGS rate continuity issues, it is more difficult to undertake this analysis for the SGS class. Based on Staff's realignment of the non-residential rate structures as described above, the range of 300-500 Ccf per month appears to reasonably capture the Spire SGS class's weather-sensitive usage by encompassing approximately 40% - 60% of SGS customers in heating months. This level retains for Spire much of the risk for changes in usage more closely related to the changes in the numbers of customers and for rate switching among classes. The associated tables are provided below:

West SGS	JAN-20	FEB-20	MAR-20	APR-20	MAY-20	JUN-20	JUL-20	AUG-20	SEP-20	OCT-19	NOV-19	DEC-19
100	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
200	76%	77%	70%	56%	45%	47%	54%	53%	53%	50%	63%	71%
300	**58%**	**59%**	**51%**	**35%**	**25%**	**28%**	**34%**	**33%**	**33%**	**31%**	**43%**	**52%**
400	**45%**	**46%**	**38%**	**22%**	**14%**	**16%**	**21%**	**19%**	**19%**	**19%**	**30%**	**39%**
500	**36%**	**37%**	**29%**	**14%**	**7%**	**9%**	**12%**	**10%**	**10%**	**11%**	**21%**	**30%**
600	28%	29%	22%	8%	4%	4%	6%	5%	5%	6%	15%	23%
700	22%	23%	16%	5%	2%	2%	3%	2%	2%	4%	10%	17%
800	17%	18%	12%	3%	1%	1%	1%	1%	1%	2%	7%	13%
900	13%	14%	9%	2%	1%	1%	1%	1%	1%	1%	4%	9%
1,000	10%	10%	6%	1%	0%	0%	0%	0%	1%	1%	3%	7%
1,100	7%	8%	4%	1%	0%	0%	0%	0%	0%	1%	2%	5%
1,200	5%	5%	3%	0%	0%	0%	0%	0%	0%	0%	1%	3%
1,300	3%	4%	2%	0%	0%	0%	0%	0%	0%	0%	1%	2%
1,400	2%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%
1,500	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

East SGS	JAN-20	FEB-20	MAR-20	APR-20	MAY-20	JUN-20	JUL-20	AUG-20	SEP-20	OCT-19	NOV-19	DEC-19
100	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
200	77%	78%	74%	60%	49%	51%	57%	56%	57%	56%	64%	73%
300	**60%**	**62%**	**56%**	**39%**	**29%**	**31%**	**37%**	**36%**	**36%**	**36%**	**45%**	**55%**
400	**48%**	**49%**	**44%**	**26%**	**17%**	**18%**	**23%**	**21%**	**22%**	**23%**	**32%**	**43%**
500	**39%**	**40%**	**34%**	**17%**	**10%**	**10%**	**13%**	**12%**	**12%**	**14%**	**22%**	**33%**
600	31%	32%	26%	11%	5%	5%	7%	6%	7%	8%	16%	25%
700	25%	26%	21%	7%	3%	2%	3%	3%	3%	5%	11%	19%
800	20%	21%	16%	4%	2%	1%	2%	2%	2%	3%	7%	15%
900	15%	17%	12%	3%	1%	1%	1%	1%	1%	2%	5%	11%
1,000	12%	14%	9%	2%	1%	1%	1%	1%	1%	1%	3%	8%
1,100	9%	11%	7%	1%	1%	1%	1%	1%	1%	1%	2%	6%
1,200	7%	9%	5%	1%	1%	0%	0%	0%	1%	1%	1%	4%
1,300	5%	7%	4%	1%	1%	0%	0%	0%	1%	1%	1%	3%
1,400	4%	5%	3%	0%	0%	0%	0%	0%	1%	1%	1%	2%
1,500	3%	4%	2%	0%	0%	0%	0%	0%	0%	1%	0%	1%

Although Staff's rate design reflects that all SGS usage below 5,000 Ccf be priced at the same rate, it will be necessary to create fictitious blocks within the Spire billing system to effectuate the RNA. For example, Block 1a for usage 0-299 Ccf, Block 1b for usage 300-499 Ccf, and Block 1c for usage 500 – 5,000 Ccf.[17]

Staff Expert/Witness: Sarah L.K. Lange and Michael L. Stahlman

<u>RNA Operation</u>

The RNA will be a rider. Staff recommends an annual adjustment be applied to all Ccf sales that occur in a block identified in the tariff. Staff recommends that the timing of these filings be such that the portion of sales that will be projected be during the summer, and that the revised rider rate will take effect prior to October 1. This will allow the same rate to be in effect for essentially all customers' winter usage. [18]

As discussed, this design insulates the company from sales fluctuations associated with deviations in weather-related sales from normal, whether driven by the actual weather, or by conservation efforts related to weather, or any conservation measure that occurs in a month when that customer's usage exceeds the first block. Thus, the RNA protects the company from ratepayer-funded conservation efforts that target customers with usage exceeding the first block, but the company would retain the opportunity to increase its return by increasing the number of customers taking service, and the company and remaining ratepayers retain the risk from decreases in their return driven by customers leaving the system. While customer growth may impact usage in Block 2, this mechanism does not specifically identify and adjust for customer growth; while its volumetric impact is mitigated in Block 2. [19]

Appendices

Appendix 1 - Staff Credentials

Appendix 2 - Other Staff Schedules

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[17] Staff understands that Ameren Missouri implemented this billing system change to facilitate its Delivery Charge Adjustment ("DCA") rider within its General Service class.

[18] It will also be necessary to incorporate appropriate tariff provisions to transfer from the existing mechanism to the revised mechanism, and to true-up amounts due and under- or over-collected pursuant to the existing mechanism.

[19] Staff acknowledges that the departure or addition of a customer does have an impact on second block sales; however the intent of the RNA mechanism is to insulate the company from all sales variations in the second block.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	)))))	Case No. GR-2021-0108

AFFIDAVIT OF ROBIN KLIETHERMES

STATE OF MISSOURI COUNTY OF COLE	)))	ss.

COMES NOW ROBIN KLIETHERMES and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff's Class Cost of Service Report*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Rm Kliethermes

ROBIN KLIETHERMES

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 26th day of May 2021.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	)))))	Case No. GR-2021-0108

AFFIDAVIT OF SARAH L.K. LANGE

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW SARAH L.K. LANGE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff's Class Cost of Service Report*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Sarah LK Lange

SARAH L.K. LANGE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 26th day of May 2021.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	)))))	Case No. GR-2021-0108

AFFIDAVIT OF CHARLES T. POSTON, PE

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW CHARLES T. POSTON, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff's Class Cost of Service Report*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

CHARLES T. POSTON, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 25th day of May 2021.

D Suzie Mankin

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc.'s d/b/a Spire Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	)))))	Case No. GR-2021-0108

AFFIDAVIT OF MICHAEL L. STAHLMAN

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW MICHAEL L. STAHLMAN and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff's Class Cost of Service Report*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

MICHAEL L. STAHLMAN

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 25th day of May 2021.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin
Notary Public

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

CLASS COST OF SERVICE

APPENDIX 1

Staff Credentials

SPIRE MISSOURI, INC., d/b/a SPIRE

SPIRE EAST and SPIRE WEST
GENERAL RATE CASE

CASE NO. GR-2021-0108

Jefferson City, Missouri
May 26, 2021

APPENDIX 1

STAFF CREDENTIALS

Alpha by LAST NAME

TABLE OF CONTENTS

Robin Kliethermes

Present Position:

I am the Regulatory Compliance Manager of the Tariff and Rate Design Department, Industry Analysis Division, of the Missouri Public Service Commission ("Commission"). I have held this position since July 16th, 2016. I have been employed by the Commission since March of 2012. In May of 2013, I presented on Class Cost of Service and Cost Allocation to the National Agency for Energy Regulation of Moldova ("ANRE") as part of the National Association of Regulatory Utility Commissioners ("NARUC") Energy Regulatory Partnership Program. I am also a member of the Electric Meter Variance Committee.

Educational Background and Work Experience:

I have a Bachelor of Science degree in Parks, Recreation and Tourism with a minor in Agricultural Economics from the University of Missouri – Columbia in 2008, and a Master of Science degree in Agricultural Economics from the same institution in 2010. Prior to joining the Commission, I was employed by the University of Missouri Extension as a 4-H Youth Development Specialist and County Program Director in Gasconade County.

Additionally, I completed two online classes through Bismarck State College: Energy Markets and Structures (ENRG 420) in December, 2014 and Energy Economics and Finance (ENRG 412) in May, 2015.

<u>**Previous Testimony of Robin Kliethermes**</u>

Case No.	Company	Type of Filing	Issue
ER-2012-0166	Ameren Missouri	Staff Report	Economic Considerations
ER-2012-0174	Kansas City Power& Light Company	Staff Report	Economic Considerations
ER-2012-0175	KCP&L Greater Missouri Operations Company	Staff Report	Economic Considerations & Large Power Revenues
ER-2012-0345	Empire District Electric Company	Staff Report	Economic Considerations, Non-Weather Sensitive Classes & Energy Efficiency
HR-2014-0066	Veolia Kansas City	Staff Report	Revenue by Class and Class Cost of Service
GR-2014-0086	Summit Natural Gas	Staff Report	Large Customer Revenues
GR-2014-0086	Summit Natural Gas	Rebuttal	Large Customer Revenues
EC-2014-0316	City of O'Fallon Missouri and City of Ballwin, Missouri v. Union Electric Company d/b/a Ameren Missouri	Staff Memorandum	Overview of Case
EO-2014-0151	KCP&L Greater Missouri Operations Company	Staff Recommendation	Renewable Energy Standard Rate Adjustment Mechanism (RESRAM)
ER-2014-0258	Ameren Missouri	Staff Report	Rate Revenue by Class, Class Cost of Service study, Residential Customer Charge
ER-2014-0258	Ameren Missouri	Rebuttal	Weather normalization adjustment to class billing units
ER-2014-0258	Ameren Missouri	Surrebuttal	Residential Customer Charge and Class allocations
ER-2014-0351	Empire District Electric Company	Staff Report	Rate Revenue by Class, Class Cost of Service study, Residential Customer Charge

Case No.	Company	Type of Filing	Issue
ER-2014-0351	Empire District Electric Company	Rebuttal & Surrebuttal	Residential Customer, Interruptible Customers
ER-2014-0370	Kansas City Power & Light Company	Staff Report	Rate Revenue by Class, Class Cost of Service study, Residential Customer Charge
ER-2014-0370	Kansas City Power & Light Company	Rebuttal & Surrebuttal	Class Cost of Service, Rate Design, Residential Customer Charge
ER-2014-0370	Kansas City Power & Light Company	True-Up Direct & True-Up Rebuttal	Customer Growth & Rate Switching
EE-2015-0177	Kansas City Power & Light Company	Staff Recommendation	Electric Meter Variance Request
EE-2016-0090	Ameren Missouri	Staff Recommendation	Tariff Variance Request
EO-2016-0100	KCP&L Greater Missouri Operations Company	Staff Recommendation	RESRAM Annual Rate Adjustment Filing
ET-2016-0185	Kansas City Power & Light Company	Staff Recommendation	Solar Rebate Tariff Change
ER-2016-0023	Empire District Electric Company	Staff Report	Rate Revenue by Class, CCOS and Residential Customer Charge
ER-2016-0023	Empire District Electric Company	Rebuttal & Surrebuttal	Residential Customer Charge and CCOS
ER-2016-0156	KCP&L Greater Missouri Operations	Staff Report	Rate Revenue by Class, CCOS and Residential Customer Charge
ER-2016-0156	KCP&L Greater Missouri Operations	Rebuttal & Surrebuttal	Data Availability, Energy Efficiency Revenue Adj., Residential Customer Charge
ER-2016-0179	Ameren Missouri	Rebuttal	Blocked Usage
ER-2016-0285	Kansas City Power & Light Company	Rebuttal & Surrebuttal	Clean Charge Network Tariff, Rate Design
GR-2017-0215	Spire (Laclede Gas Company)	Staff Report, Rebuttal & Surrebuttal	Tariff Issues, Rate Design and Class Cost of Service

cont'd Previous Testimony of
Robin Kliethermes

Case No.	Company	Type of Filing	Issue
GR-2017-0216	Spire (Missouri Gas Energy)	Staff Report, Rebuttal & Surrebuttal	Tariff Issues, Rate Design and Class Cost of Service
EC-2018-0103	Kansas City Power & Light Company	Staff Report	Customer Complaint
EO-2015-0055	Ameren Missouri	Rebuttal	Flex-Pay Program
GR-2018-0013	Liberty	Staff Report	Class Cost of Service and Rate Design Report
ER-2018-0145	Kansas City Power & Light Company	Staff Report & Rebuttal & Surrebuttal	Tariff Issues, Rate Design, Revenue, Class Cost of Service
ER-2018-0146	KCP&L Greater Missouri Operations	Staff Report & Rebuttal & Surrebuttal	Tariff Issues, Rate Design, Revenue, Class Cost of Service
EO-2018-0211	Ameren Missouri	Staff Rebuttal Report	MEEIA Margin Rates
GO-2019-0059	Spire Missouri West	Staff Recommendation & Rebuttal	Weather Normalization Adjustment Rider (WNAR)
GO-2019-0058	Spire Missouri East	Staff Recommendation & Rebuttal	Weather Normalization Adjustment Rider (WNAR)
ET-2018-0132	Ameren Missouri	Surrebuttal	Risk Sharing Mechanism
ER-2019-0291	Ameren Missouri	Staff Recommendation	MEEIA EEIC rates
GR-2019-0077	Ameren Missouri	Staff Report, Rebuttal & Surrebuttal	Tariff Issues, Rate Design, Revenue, Class Cost of Service
EO-2019-0132	KCPL and GMO	Staff Rebuttal Report	MEEIA DSIM mechanism, Tariff Issues
ER-2019-0335	Ameren Missouri	Staff Report, Rebuttal and Surrebuttal	Cost of Service and Class Cost of Service
ER-2019-0374	Empire District Electric Company	Staff Report, Rebuttal and Surrebuttal	Class Cost of Service and Estimated Bills
ER-2019-0374	Empire District Electric Company	Supplemental and Surrebuttal Supplemental	Estimated Bills and Billing Determinants
EU-2020-0350	Evergy Missouri Metro and Evergy Missouri West	Rebuttal Testimony	Lost Revenue Recovery

Sarah L.K. Lange

I received my J.D. from the University of Missouri, Columbia, in 2007, and am licensed to practice law in the State of Missouri. I received my B.S. in Historic Preservation from Southeast Missouri State University, and took courses in architecture and literature at Drury University. Since beginning my employment with the MoPSC I have taken courses in economics through Columbia College and courses in energy transmission through Bismarck State College, and have attended various trainings and seminars, indicated below.

I began my employment with the Commission in May 2006 as an intern in what was then known as the General Counsel's Office. I was hired as a Legal Counsel in September 2007, and was promoted to Associate Counsel in 2009, and Senior Counsel in 2011. During that time my duties consisted of leading major rate case litigation and settlement, and presenting Staff's position to the Commission, and providing legal advice and assistance primarily in the areas of depreciation, cost of service, class cost of service, rate design, tariff issues, resource planning, accounting authority orders, construction audits, rulemakings and workshops, fuel adjustment clauses, document management and retention, and customer complaints.

In July 2013 I was hired as a Regulatory Economist III in what is now known as the Tariff / Rate Design Department. In this position my duties include providing analysis and recommendations in the areas of RTO and ISO transmission, rate design, class cost of service, tariff compliance and design, and regulatory adjustment mechanisms and tariff design. I also continue to provide legal advice and assistance regarding generating station and environmental control construction audits and electric utility regulatory depreciation. I have also participated before the Commission under the name Sarah L. Kliethermes.

Presentations

Midwest Energy Policy Series – Impact of ToU Rates on Energy Efficiency (August 14, 2020)

Billing Determinants Lunch and Learn (March 27, 2019)

Support for Low Income and Income Eligible Customers, Cost-Reflective Tariff Training, in cooperation with U.S.A.I.D. and NARUC, Addis Ababa, Ethiopia (February 23-26, 2016)

Fundamentals of Ratemaking at the MoPSC (October 8, 2014)

Ratemaking Basics (Sept. 14, 2012)

Participant in Missouri's Comprehensive Statewide Energy Plan working group on Energy Pricing and Rate Setting Processes.

Relevant Trainings and Seminars

Regional Training on Integrated Distribution System Planning for Midwest/MISO Region (October 13-15, 2020)

"Fundamentals of Utility Law" Scott Hempling lecture series (January – April, 2019)

Today's U.S. Electric Power Industry, the Smart Grid, ISO Markets & Wholesale Power Transactions (July 29-30, 2014)

MISO Markets & Settlements training for OMS and ERSC Commissioners & Staff (January 27–28, 2014)

Validating Settlement Charges in New SPP Integrated Marketplace (July 22, 2013)

PSC Transmission Training (May 14 – 16, 2013)

Grid School (March 4–7, 2013)

Specialized Technical Training - Electric Transmission (April 18–19, 2012)

The New Energy Markets: Technologies, Differentials and Dependencies (June 16, 2011)

Mid-American Regulatory Conference Annual Meeting (June 5–8, 2011)

Renewable Energy Finance Forum (Sept. 29–Oct 3, 2010)

Utility Basics (Oct. 14–19, 2007)

Testimony and Staff Memoranda

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of the Request of Union Electric Company d/b/a Ameren for Approval of its Surge Protection Program	ET-2021-0082
Union Electric Company d/b/a Ameren Missouri In the Matter of the Request of Union Electric Company d/b/a Ameren Missouri to Implement the Delivery Charge Adjustment for the 1st Accumulation Period beginning September 1, 2019 and ending August 31, 2020	GT-2021-0055
The Empire District Electric Company In the Matter of The Empire District Electric Company's Tariffs Approval of a Transportation Electrification Portfolio for Electric Customers in its Missouri Service Area	ET-2020-0390

Company	Case No.
The Empire District Electric Company In the Matter of The Empire District Electric Company's Tariffs to Increase Its Revenues for Electric Service	ER-2019-0374
Union Electric Company d/b/a Ameren Missouri In the Matter of of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service	ER-2019-0335
KCP&L Greater Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company Request for Authority to Implement Rate Adjustments Required by 4 CSR 240-20.090(8) And the Company's Approved Fuel and Purchased Power Cost Recovery Mechanism	ER-2019-0413
Union Electric Company d/b/a Ameren Missouri In the Matter of of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Natural Gas Service	GR-2019-0077
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri Revised Tariff Sheets	ET-2019-0149
The Empire District Electric Company In the Matter of The Empire District Electric Company's Revised Economic Development Rider Tariff Sheets	ET-2019-0029
The Empire District Electric Company In the Matter of a Proceeding Under Section 393.137 (SB 564) to Adjust the Electric Rates of The Empire District Electric Company	ER-2018-0366
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2018-0202
Kansas City Power & Light Company KCP&L Greater Missouri Operations Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2018-0145 ER-2018-0146
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff	ET-2018-0063
Laclede Gas Company Laclede Gas Company d/b/a Missouri Gas Energy In the Matter of Laclede Gas Company's Request to Increase Its Revenue for Gas Service, In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenue for Gas Service.	GR-2017-0215 GR-2017-0216
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0316
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0167
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Annual RESRAM Tariff Filing	ET-2017-0097
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2016-0358
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2016-0325
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	ER-2016-0285
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff	EA-2016-0207

Company	**Case No.**
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2016-0179
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0156
Empire District Electric Company In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0023
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri to the Iowa Border and an Associated Substation Near Kirksville, Missouri	EA-2015-0146
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line in Marion County, Missouri and an Associated Switching Station Near Palmyra, Missouri	EA-2015-0145
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's 2nd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	EO-2015-0055
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2014-0370
Empire District Electric Company In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area	ER-2014-0351
Union Electric Company d/b/a Ameren Missouri City of O'Fallon, Missouri, and City of Ballwin, Missouri, Complainants v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0316

Company	Case No.
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2014-0258
Union Electric Company d/b/a Ameren Missouri Noranda Aluminum, Inc., et al., Complainants, v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0224
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2014-0207
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Application for Authority to Establish a Renewable Energy Standard Rate Adjustment Mechanism	EO-2014-0151
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Filing for Approval of Demand-Side Programs and for Authority to Establish A Demand-Side Programs Investment Mechanism	EO-2014-0095
Veolia Energy Kansas City, Inc. In the Matter of Veolia Energy Kansas City, Inc. for Authority to File Tariffs to Increase Rates	HR-2014-0066

Charles T. Poston, P.E.

Current Position

I am currently employed as a Senior Professional Engineer in the Engineering Analysis Department of the Missouri Public Service Commission.

Education and Prior Work Experience

I received a Bachelor of Science degree in Civil Engineering from the University of Missouri-Columbia in 2006 and a Master of Science degree in Nuclear Engineering from the same institution in 2008.

From May 2008 through August 2013 I was employed by Ameren Missouri as an engineer in the Safety Analysis and Reactor Engineering Departments at the Callaway Energy Center. My duties consisted of post-accident thermo-hydraulic analyses, radiation dose calculations, atmospheric dispersion estimates for radiological and chemical hazards, and root cause determinations.

From September 2013 to March 2015, I worked in the Safety Engineering Unit of the Missouri Public Service Commission. In that capacity I conducted comprehensive gas safety inspections and participated in incident investigations following natural gas explosions. After March 2015 I was employed by the Commission in the Engineering Analysis Department where I was assigned to cases for both electric and natural gas utilities. I have provided testimony before the Commission on topics including natural gas incident investigations, power plant cost allocations, ISRS cost recovery, and production cost modeling.

I have been a licensed professional engineer in the State of Missouri since January 2015.

Charles T. Poston Case History:

Case Number	Utility	Testimony	Issue
GS-2014-0226	Laclede Gas Company	Staff Report	Staff investigation following natural gas explosion
EO-2015-0320	Union Electric Company d/b/a Ameren Missouri	Staff Recommendation	SO_2 and NO_x emission allowance trading and reporting
ER-2016-0023	Empire District Electric Company	Staff Report	Heat Rate Testing
EC-2016-0230	KCP&L Greater Missouri Operations Company	Staff Report Staff Investigation	Consumer Complaint in reference to "Smart Meter" installation
ER-2016-0156	KCP&L Greater Missouri Operations Company	Staff Report	Variable Fuel Costs, Lake Road Allocations, Heat Rate Testing
		Rebuttal	Lake Road Allocations
		Surrebuttal	Lake Road Allocations
ER-2016-0285	Kansas City Power & Light Company	Staff Report	Variable Fuel Costs
		Rebuttal	
		True-Up Direct	
		True-Up Rebuttal	
ER-2018-0146	KCP&L Greater Missouri Operations Company	Staff Report	Variable Fuel Cost Lake Road Allocations
		Rebuttal	Lake Road Allocations
		Surrebuttal	Greenwood Solar Allocation, Lake Road Allocations, Variable Fuel Costs
		True-Up Direct	
GO-2019-0115 GO-2019-0116	Spire Missouri, Inc.	Staff Recommendation Staff Direct Report	Avoided Cost Studies
GO-2019-0356 GO-2019-0357	Spire Missouri, Inc.	Staff Recommendation	Engineering Review
AO-2021-0264[1] EO-2021-0359 EO-2021-0360	Evergy Missouri West, Inc., Evergy Missouri Metro, Inc.	Staff Report(s)	February 2021 Cold Weather Event

[1] This case contained a Staff report concerning the response of numerous Missouri utilities to the cold weather event of February 2021. I was a contributor only to the sections concerning Evergy Missouri West and Evergy Missouri Metro.

Michael L. Stahlman

Education

2009	M. S., Agricultural Economics, University of Missouri, Columbia.
2007	B.A., Economics, Summa Cum Laude, Westminster College, Fulton, MO.

Professional Experience

2010 -	Regulatory Economist, Missouri Public Service Commission
2007 – 2009	Graduate Research Assistant, University of Missouri
2008	Graduate Teaching Assistant, University of Missouri
2007	American Institute for Economic Research (AIER) Summer Fellowship Program
2006	Price Analysis Intern, Food and Agricultural Policy Research Institute (FAPRI), Columbia, MO
2006	Legislative Intern for State Representative Munzlinger
2005 – 2006	Certified Tutor in Macroeconomics, Westminster College, Fulton, MO
1998 – 2004	Engineering Watch Supervisor, United States Navy

Expert Witness Testimony

Union Electric Company d/b/a AmerenUE — GR-2010-0363
In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Natural Gas Service Provided to Customers in the Company's Missouri Service Area

Union Electric Company d/b/a Ameren Missouri — GT-2011-0410
In the Matter of the Union Electric Company's (d/b/a Ameren Missouri) Gas Service Tariffs Removing Certain Provisions for Rebates from Its Missouri Energy Efficient Natural Gas Equipment and Building Shell Measure Rebate Program

KCP&L Great Missouri Operations Company — EO-2012-0009
In the Matter of KCP&L Greater Missouri Operations Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism

Union Electric Company d/b/a Ameren Missouri — EO-2012-0142
In the Matter of Union Electric Company d/b/a Ameren Missouri's Filing to Implement Regulatory Changes Furtherance of Energy Efficiency as Allowed by MEEIA

Kansas City Power & Light Company — EO-2012-0323
In the Matter of the Resource Plan of Kansas City Power & Light Company

KCP&L Great Missouri Operations Company — EO-2012-0324
In the Matter of the Resource Plan of KCP&L Greater Missouri Operations Company

Kansas City Power & Light Company, KCP&L Great Missouri Operations Company, and Transource Missouri — EA-2013-0098, EO-2012-0367
In the Matter of the Application of Transource Missouri, LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Finance, Own, Operate, and Maintain the Iatan-Nashua and Sibley-Nebraska City Electric Transmission Projects

Kansas City Power & Light Company EO-2012-0135
KCP&L Great Missouri Operations Company EO-2012-0136
In the Matter of the Application of Kansas City Power & Light Company [KCP&L Great Missouri Operations Company] for Authority to Extend the Transfer of Functional Control of Certain Transmission Assets to the Southwest Power Pool, Inc.

Kansas City Power & Light Company EU-2014-0077
KCP&L Great Missouri Operations Company
In the Matter of the Application of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company for the Issuance of an Accounting Authority Order relating to their Electrical Operations and for a Contingent Waiver of the Notice Requirement of 4 CSR 240-4.020(2)

Kansas City Power & Light Company EO-2014-0095
In the Matter of Kansas City Power & Light Company's Notice of Intent to File an Application for Authority To Establish a Demand-Side Programs Investment Mechanism

Veolia Energy Kansas City, Inc HR-2014-0066
In the Matter of Veolia Energy Kansas City, Inc for Authority to File Tariffs to Increase Rates

Grain Belt Express Clean Line, LLC EA-2014-0207
In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line

Union Electric Company d/b/a Ameren Missouri ER-2014-0258
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service

Empire District Electric Company ER-2014-0351
In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area

Kansas City Power & Light Company ER-2014-0370
In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service

Kansas City Power & Light Company EO-2014-0240
In the Matter of Kansas City Power & Light Company's Filing for Approval of Demand-Side Programs and for Authority to Establish a Demand-Side Programs Investment Mechanism
KCP&L Great Missouri Operations Company EO-2014-0241
In the Matter of KCP&L Greater Missouri Operations Company's Filing for Approval of Demand-Side Programs and for Authority to Establish a Demand-Side Programs Investment Mechanism

Ameren Transmission Company of Illinois EA-2015-0146
In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri to the Iowa Border and an Associated Substation Near Kirksville, Missouri

Empire District Electric Company ER-2016-0023
In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service

KCP&L Great Missouri Operations Company ER-2016-0156
In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service

Kansas City Power & Light Company ER-2016-0285
In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service

Union Electric Company d/b/a Ameren Missouri ER-2016-0179
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service

Grain Belt Express Clean Line, LLC EA-2016-0358
In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Operate, Control, Manage and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345kV transmission line.

Spire Missouri, Inc. GR-2017-0215 and GR-2017-0216
In the Matter of Spire Missouri, Inc.'s Request to Increase Its Revenues for Gas Service

Liberty Utilities GR-2018-0013
In the Matter of Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities' Tariff Revisions Designed to Implement a General Rate Increase for Natural Gas Service in the Missouri Service Areas of the Company

Spire Missouri, Inc. GO-2019-0058 and GO-2019-0059
In the Matter of Spire Missouri, Inc. d/b/a Spire's Request to Decrease [Increase] WNAR

Grain Belt Express Clean Line LLC EM-2019-0150
Invenergy Transmission LLC
Invenergy Investment Company LLC
In the Matter of the Joint Application of Invenergy Transmission LLC, Invenergy Investment Company LLC, Grain Belt Express Clean Line LLC and Grain Belt Express Holding LLC for an Order Approving the Acquisition by Invenergy Transmission LLC of Grain Belt Express Clean Line LLC

Union Electric Company d/b/a Ameren Missouri GR-2019-0077
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase its Revenues for Natural Gas Service

Union Electric Company d/b/a Ameren Missouri ER-2019-0335
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service

Empire District Electric Company ER-2019-0374
In the Matter of The Empire District Electric Company's Request for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in its Missouri Service Area

Union Electric Company d/b/a Ameren Missouri EA-2020-0371
In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Under 20 CSR 4240-3.105

Selected Manuscripts

Stahlman, Michael and Laura M.J. McCann. "Technology Characteristics, Choice Architecture and Farmer Knowledge: The Case of Phytase." Agriculture and Human Values (2012) 29: 371-379.

Stahlman, Michael. "The Amorality of Signals." Awarded in top 50 authors for SEVEN Fund essay competition, "The Morality of Profit."

Selected Posters

Stahlman, Michael, Laura M.J. McCann, and Haluk Gedikoglou. "Adoption of Phytase by Livestock Farmers." Selected poster at the American Agricultural Economics Association Annual Meeting, Orlando, FL, July 27-29, 2008. Also presented at the USDA/CSREES Annual Meeting in St. Louis, MO in February 2009.

McCann, Laura, Haluk Gedikoglu, Bob Broz, John Lory, Ray Massey, and Michael Stahlman. "Farm Size and Adoption of BMPs by AFOs." Selected poster at the 5th National Small Farm Conference in Springfield, IL in September 2009.

Non-Peer-Reviewed Works

Poole-King, Contessa, Henry Warren, and Michael Stahlman. "Forecasters Predicting Cold, Wet Winter For Most Of Midwest." PSConnection (Fall 2013) 3(7):3-4.

Poole-King, Contessa, Henry Warren, and Michael Stahlman. "Low Income Weatherization Programs Provides Services To Help Consumers." PSConnection (Fall 2013) 3(7):5-6.

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

CLASS COST OF SERVICE

APPENDIX 2

Other Staff Schedules

SPIRE MISSOURI, INC., d/b/a SPIRE

SPIRE EAST and SPIRE WEST
GENERAL RATE CASE

CASE NO. GR-2021-0108

Jefferson City, Missouri
May 26, 2021

** Denotes Confidential Information **

RATE NORMALIZATION ADJUSTMENT
(RNA)

A. APPLICABILITY

The Rate Normalization Adjustment (RNA) is applicable to all customers taking service under the Residential or Small General Service rate schedules. This adjustment will be applied as a separate line item on a customer's bill to all ccfs of gas usage.

B. FILING

The RNA rider

(1) Adjustment Period (AP): The RNA AP will begin on the ninth billing month of a given year, and continue through the eighth billing month of the subsequent year. The initial AP under this rider shall begin on September 1, 2021. Actual Block Usage (ABU) for the final billing month of an AP may be projected for purposes of a RNA rate calculation included in a filing under this Rider if necessary. Prior to the end of the subsequent twelve (12) month AP, the difference between the ABU previously projected and the observed ABU for that month, multiplied by the Rate that was in effect during that month, will be added to or subtracted from the calculation of the over- or under-billing of the RNA during the RP as appropriate.

(2) Recovery Period (RP): An annual period during which a RNA rate is in effect, beginning with the eleventh calendar month of a given year, and continuing through the tenth calendar month of the subsequent year. The RP shall be calculated based on nine (9) months actual sales, including estimated unbilled sales for the ninth month, and three (3) months projected sales. The 3 months projected sales associated with each RP shall be trued up with actuals upon calculation of the subsequent RA.

(3) After November 1, 2021, the Company shall file its RNA revisions with the Commission each calendar year at least sixty (60) days prior to the first day of the eleventh calendar month unless otherwise provided for by the Commission.

C. CALCULATIONS

The RNA applicable to each rate schedule subject to this Rider and calculated separately for Residential customers and Small General Service customers, shall be revised annually to reflect (1) the difference between the normalized annual natural gas usage in Block 2 for Residential customers and Block 2 for Small General Service customers authorized in the Company's last general rate case and the actual usage billed in those blocks for the applicable AP; (2) to reconcile the over- or under-recovery from the previous RNA rate adjustment; and (3) any adjustments ordered by the Commission.

$$RNA = \left[\frac{(RCBU - ABU) * Rate}{RCU} + \frac{(OA + RA)}{RCU}\right]$$

Where:

RNA = "Revenue Normalization Adjustment Rate" to be calculated independently for each of the Company's applicable service classes and applied to all ccf of the applicable service class during the RP.

RCBU = Rate Case Block Usage will be the normalized annual natural gas usage in Block 2 for Residential customers and Block 2 for Small General Service customers established in the most recent general rate case.

RCU = Rate Case Usage will be the estimated total usage in ccf for the applicable class established in the most recent general rate case.

ABU = Actual Block Usage is the usage which occurred in Block 2 during the Adjustment Period (AP) for the class's adjustable ccf usage range

Rate = The currently effective class rate for usage in Block 2 for Residential customers and Block 2 for Small General Service customers

OA = Ordered Adjustment is the amount of any adjustment to the RNA ordered by the Commission as a result of corrections under this Rider. Such amounts shall include monthly interest equal to the reconciliation adjustment interest rate

RA = Reconciliation Adjustment is the amount due to the Company (+RA) or Customers (-RA) arising from adjustments under this Rider that were under- or over-billed in the prior 12 month RP

In the event that there is more than one set of non-gas base rates in effect during the AP the rates and rate case block usage will be prorated accordingly.

D. RECONCILIATION ADJUSTMENT INTEREST RATE
Each month, carrying costs, at a simple rate of interest equal to the utility's short-term borrowing rate (as published in The Wall Street Journal on the first business day of such month), minus two percentage points, shall be applied to the Company's ending monthly RNA balance. In no event shall the carrying cost rate be less than 0%. Corresponding interest income and expense amounts shall be recorded on a net cumulative basis for the RNA deferral period.

E. Rate Case Information
From GR-2021-0108, the normalized annual natural gas usage in Block 2 (greater than 50 ccf) for Residential customers is XX,XXX,XXX ccf and Block 2 (greater than 50 ccf) for Small General Service customers is XX,XXX,XXX ccf.

The Block 2 rate for the Residential Class is $0.XXXX and the rate for Block 2 for the Small General Service Class is $0.XXXX.

RCU: Total Residential Usage is X, total General Service Usage X.

SCHEDULE SLKL-d1

HAS BEEN DEEMED

CONFIDENTIAL

IN ITS ENTIRETY