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Witness:	Michael W. Harding
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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. GR-2019-0077

DIRECT TESTIMONY

OF

MICHAEL W. HARDING

ON

BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

St. Louis, Missouri
December, 2018

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DIRECT TESTIMONY

OF

MICHAEL W. HARDING

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I. INTRODUCTION

Q. Please state your name and business address.

A. Michael W. Harding, Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

Q. What is your position with Ameren Missouri?

A. I am employed by Ameren Missouri as the Manager of Rates & Analysis.

Q. Please describe your educational background and employment experience.

A. I received a Bachelor of Science in Business Finance from the University of Kansas in 2007. In 2006, I completed a power marketing internship at Westar Energy in Topeka, Kansas, and was hired to work part-time through my final year of school scheduling physical power contracts and performing analyses in support of the trade floor. Upon completion of my degree, I accepted a full-time position as a Real-Time Scheduler with Westar Energy. At the end of 2007, I accepted a Real-Time Trading Position with Union Electric Company, where my responsibilities included optimizing the Company's real-time position and expanding the scope of the Company's trading opportunities. In May 2008, I was subsequently promoted to Term Trader where my role focused on managing and optimizing the long-term power and transmission assets of the Company in the forward markets. At the beginning of 2014, I accepted a role in the Renewable Development Department within Ameren Services Company. My primary responsibilities during that time included the development of various renewable initiatives, project management, modeling support of proposed renewable generation, and ensuring compliance with the Missouri Renewable Energy Standard. I was promoted to my current position in April 2017, where I lead a team responsible for the Company's class cost of service, rate design, tariff administration, and various regulatory projects.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your direct testimony in this proceeding?

A. My testimony will explain the development and application of the rates necessary to recover the proposed Missouri jurisdictional annual revenue requirement calculated by Ameren Missouri witness Laura Moore. First, though, I explain how the interim income tax reform credit rates were developed. Then, I describe how the billing determinants and revenues were developed, how the revenue requirement changes should be apportioned to the various rate classes, and the estimated impacts of the rate changes on the customers within the classes. Next, I describe the proposed Weather & Conservation Adjustment Rider ("WCAR"), which will stabilize Company revenues while more accurately reflecting the non-gas revenue effects of increases or decreases in customer usage due to variations in weather and/or conservation. Then, I recommend residential rate design changes to the Purchased Gas Adjustment ("PGA") Rider, including consolidation of the Non-Rolla and Rolla PGA rates. Finally, I propose changes to the provisions governing service extensions in the Company's tariff Rules and Regulations, and support some miscellaneous clean-up tariff changes filed along with this case.

Q. Please identify the schedules presented in your testimony and provide a brief description of each.

A. The schedules presented in my testimony include:

<u>Schedule MWH-D1</u>

This schedule consists of the tariff sheets that reflect the revised base rates and miscellaneous tariff revisions being proposed by the Company for approval by the Commission in this proceeding. If approved, these tariffs would provide an increase in the Company's net Missouri jurisdictional normalized test year revenue of approximately $4.26 million, or 3.3%, over the annualized proposed test year (12 months ending June 30, 2018) revenue (i.e., base rate revenue plus PGA revenue) realized from the tariffs which were effective at the time of filing.

<u>Schedule MWH-D2</u>

This schedule shows the distribution of the net revenue increase to the Company's various customer classes resulting from the proposed tariffs in Schedule MWH-D1, excluding gross receipts taxes levied on customer billings by the various municipalities within the Company's service area. The Schedule also details how the charges have been applied within each class for the recovery of the proposed revenue requirement.

<u>Schedule MWH-D3</u>

This schedule illustrates the results of the proposed rates in Schedule MWH-D1 on typical monthly bills of customers served under the Company's present rate classifications.

<u>Schedule MWH-D4</u>

This schedule consists of the tariff sheets to be implemented as part of the interim rate reduction proposed in this case. These tariff sheets and the associated interim rate reduction will be cancelled when a final Commission order disposing of this case takes effect.

<u>Schedule MWH-D5</u>

This schedule shows the proposed residential rate design consisting of the delivery rate, PGA, total combined rate, and customer charge.

<u>Schedule MWH-D6</u>

This schedule summarizes the class revenue requirements necessary to give the Company an opportunity, based upon test year figures, to achieve an approximately equal rate of return from each of its proposed customer classes. This information was developed from the cost of service data contained in Schedule RPR-D2 of Ameren Missouri witness Ryan Ryterski's direct testimony and is based upon the Company's proposed level of Missouri gas retail revenues.

<u>Schedule MWH-D7</u>

This schedule summarizes the class revenue requirements necessary to give the Company an opportunity, based upon test year figures, to achieve its proposed rate of return while recognizing the Company's proposal to move rates closer to the cost of service.

III. RATE DEVELOPMENT & DESIGN

A. Interim Rate Reduction

Q. Please describe in greater detail the interim rate reduction set out in Schedule MWH-D4.

A. The Company is requesting an interim rate reduction to take effect as soon as is practical so it can flow the benefits of federal income tax reforms enacted in 2017 to Ameren Missouri gas customers, and to remain in effect for the duration of this general rate case - until a final order disposing of this case takes effect or compliance tariffs for new base rates take effect. The interim rate reduction would be applied as an equal percentage to all rate classes' delivery charges, which is similar to how the Company recently applied the income tax reduction for Ameren Missouri's electric customers in File No. ER-2018-0362. The development of the total proposed interim revenue requirement decrease is explained in Company witness Laura Moore's direct testimony. The proposed interim rates included in Schedule MWH-D4 are summarized in Table 1 below for the 12 months ending June 30, 2018:

Table 1

	Normal Revenue	Tax Credit	Ccf	Credit per Ccf	
Residential	$44,340,157	$633,347	73,736,862	0.0086	1.43%
General Service	$15,466,259	$220,917	36,442,989	0.0061	1.43%
Interruptible	$379,194	$5,416	1,928,053	0.0028	1.43%
Standard Transportation	$8,055,496	$115,063	32,842,366	0.0035	1.43%
Large Transportation	$5,447,244	$77,808	32,372,682	0.0024	1.43%
	$73,688,351	$1,052,552	177,322,952		1.43%
Special Contract	$310,968	$0			
	$73,999,319	$1,052,552			

B. Overview of Existing Rate Structure

Q. Describe Ameren Missouri's current rate classes.

A. Currently, Ameren Missouri provides natural gas service to the following rate classes: Residential, General Service, Interruptible Service, Standard Transportation Service, and Large Volume Transportation Service. The Residential class is available to customers using natural gas for domestic purposes. The General Service class is available to customers using natural gas in a single metered residential multiple occupancy dwelling, a combined residential and non-residential activity, or for any other non-residential purpose. The Interruptible Service class is available to non-residential customers whose natural gas service is subject to curtailment or interruption at the sole discretion of the Company. The Standard Transportation Service class is available to non-residential customers who purchase gas from someone other than the Company, contract with the Company for the transportation of such gas through the Company's system, and whose annual transportation requirements are expected to be 600,000 Ccf (hundred cubic feet) or less. The Large Volume Transportation Service class is available to non-residential customers who purchase gas from someone other than the Company, contract with the Company for the transportation of such gas through the Company's system, and whose annual transportation requirements are expected to be greater than 600,000 Ccf.

Q. Is Ameren Missouri proposing any revision or addition to the Company's existing rate classes?

A. No.

Q. How are Ameren Missouri natural gas rates currently structured?

A. Residential Service rates consist of a monthly Customer Charge and a volumetric Delivery Charge (with two tiers divided at the 30 Ccf monthly usage threshold). General Service rates consist of a monthly Customer Charge and volumetric Delivery Charge (with two tiers divided at the 7,000 Ccf threshold). Interruptible Service rates consist of a monthly Customer Charge, an Interruptible Gas Delivery Charge (with two tiers divided at the 7,000 Ccf threshold), and an Assurance Gas Surcharge (with two tiers divided at the 250 Ccf per day threshold). Standard Transportation and Large Volume Transportation rates consist of a monthly Customer Charge, an Electronic Gas Meter ("EGM") Charge, Transportation Charge (with two tiers divided at the 7,000 Ccf threshold), and an Aggregation and Balancing Charge for eligible school entities only.

Q. Is Ameren Missouri proposing any revision to the Company's existing rate structures?

A. Yes, the Residential class rate structure should be revised. The Company is proposing to eliminate the split block rate design of the Residential class in favor of a single flat rate if both the WCAR and related PGA revisions are also approved. The Residential split block rate design currently in place was developed to mitigate weather impacts on recovery of non-gas costs. If the WCAR and related PGA revisions are approved, then the Residential split block rate design is no longer necessary. The three proposals - elimination of the split block rate design of the Residential class, implementation of the WCAR, and the related revision to the PGA - are interdependent.

C. Summary of Rate Design Process

Q. Please summarize the Company's rate design process.

A. Simply put, rate design is the process of determining how the Company's non-gas revenue requirement will be allocated among the different customer classes and to specific charge types applicable to each customer class. This encompasses the final allocation of the revenue requirement to each respective rate class, and the development of any new rate classes and the rate mechanisms used to recover the revenue requirement within each class. Again, no new rate classes are being proposed in this case. According to the principle of cost causation, rates should be designed to reflect costs and costs should be allocated to the customers causing those costs to be incurred, to promote economic efficiency in the use of gas and to be equitable across customers. To initially determine cost causation, the results of the embedded Class Cost of Service Study ("CCOSS") conducted by Ryan Ryterski are the starting point for the Company's proposed rate design. The CCOSS is used as a guide to ensure the costs incurred by the Company are being covered from those causing the costs. While it is important to follow the principles of cost causation, the Company acknowledges there are other factors that must be considered in the final application of the respective class revenue requirement and design of the rate structure used to recover these costs.

Q. What were the Company's principal objectives in the design and development of the proposed individual customer class rates to recover the proposed revenue requirement?

A. The Company's principal objectives were as follows:

1) To have total revenue from the proposed rates equal to the annual test year revenue requirement;
2) To have total class revenues from the proposed rates as close as practical to the cost to serve that class while maintaining a gradual approach in rate movement to avoid rate shock;
3) To have the design – i.e., the balance of revenues derived from each charge type – of each rate reflect the class cost of service study as closely as practicable with due consideration to other general rate design principles;
4) To merge the Company's two Purchased Gas Adjustments into one PGA for the Company's entire Missouri natural gas operations; and

5) To replace the Residential Service split block rate design with a flat rate in order to effectively align with the updated PGA rate consolidation and proposed WCAR.

Q. How were the billing units and revenues at present rates determined for the proposed rate design?

A. Detailed billing units (number of bills issued, units of gas sold by class, etc.) are assembled based on test year bills issued by the Company as reflected in the Company's Customer Service System. The revenues that arise from the application of existing rates to these billing units are compared to the general ledger revenue as a check to verify the accuracy of the billing units involved in the calculation. A small deviation between the two numbers is common as adjustments are made throughout the year for initial bills, final bills, and rebills. Any large deviation between the numbers prompts a deeper investigation in order to reconcile and correct the billing units to bring the comparison closer in line. The Company was able to reconcile these amounts resulting in a difference of less than $60,000 in total revenues, confirming the billing units used in the test year are in line with what has been recovered through rates. As explained by Ryan Ryterski, the billing units for each of the customer classes for the 12 months ending June 2018 were then weather normalized, which adjusts for variability of test year gas sales and deliveries due to abnormal weather conditions.

Q. How does Ameren Missouri propose to apply the revenue requirement increase across the rate classes?

A. Schedule MWH-D7 shows each of the class' weather adjusted revenue requirements for the proposed test year ending June 2018 and the respective increases in dollars and percent. Schedule MWH-D6 shows the CCOSS allocation of respective revenue requirements based on each class contributing an equal rate of return – i.e., rates that would fully and accurately reflect each class' cost of service. A comparison of the two schedules (the proposed allocations versus the CCOSS equal rate of return) is provided below in Table 2:

Table 2

	Current Normal	CCOS%Δ	Proposed %Δ	Target
Residential	$44,340,157	7.82%	6.82%	$47,364,156
General Service	$15,466,259	14.00%	8.79%	$16,825,743
Interruptible	$379,194	52.72%	15.00%	$436,074
Standard Trans	$8,055,496	-22.05%	-3.00%	$7,813,831
LVTrans	$5,447,244	3.79%	1.20%	$5,512,865
	$73,688,351	5.79%	5.79%	$77,952,669
			RR Δ	$4,264,318

Q. How were the charges within each rate schedule adjusted to recover each class' proposed class revenue requirement?

A. A detailed description of the adjustment in charges for each class is included in Schedule MWH-D2. For all classes, the Customer Charge was increased to levels that are closer to the customer-related costs per customer as quantified in the direct testimony of Mr. Ryterski. For all non-residential classes except for the Standard Transportation class, the volumetric Delivery Charge (per Ccf) was increased as well in a manner consistent with moving toward cost as reflected in the CCOSS. The increase to the first rate block was consistent across all classes to discourage the potential for customer rate switching in an attempt to game rates. The remaining revenue requirement change not captured in the adjustments to the customer charge and first rate block of these non-residential classes was then recovered through the volumetric Delivery Charges in the second rate block while maintaining the existing rate design for all non-residential customers. The Company is proposing to maintain this design to minimize any rate migration or rate continuity concerns. For the Residential class, the Delivery Charge was increased as necessary to achieve the targeted class revenues given the previously determined Customer Charge.

Q. Do the proposed rates recover each class' respective cost of service based revenue requirement?

A. The proposed rates for the Company's Residential, General Service, Interruptible Service, Standard Volume Transportation, and Large Volume Transportation rate classes recover the cost-based revenue requirement on a combined basis. However, the individual class revenues do not match the CCOSS based revenue requirements due the significant change in price that would be realized by some classes if this change was implemented abruptly. The Company has proposed a reasonable move toward CCOSS, balancing customer bill stability with the goal of recovering the cost to serve each class from each respective class.

Q. Earlier in your testimony you mentioned a change to the Residential rate design. Please describe the change in greater detail.

A. The Company's current Residential rate design is structured in a way that recovers all of the Company's delivery costs in the first 30 Ccf of usage, with an equivalent amount of PGA cost recovered at an identical rate in the second block of the PGA. Any additional deviation in PGA not being recovered through this identical second PGA block rate is applied to both the 1st and 2nd PGA blocks equally. More details regarding PGA rate design impacts are provided within the PGA Tariff section in this testimony. Table 3 below is provided for illustrative purposes and shows the current Residential rate design with no deviation in the PGA beyond that recovered with the equivalent Delivery Charge, and below that, the currently effective PGA rate with additional PGA charges applied equally to each PGA block. Note, the customer's total rate considering both delivery and PGA charges is essentially a flat rate regardless of usage.

Table 3

	Annual Bills	1,365,014			
	Annual Ccf	74,639,315	Delivery Rate	PGA Rate	Total Rate
<30	Block 1 Ccf	30,317,159	0.7952	$ (0.0000)	$ 0.7952
>30	Block 2 Ccf	44,322,156	-	$ 0.7952	$ 0.7952

	Annual Bills	1,365,014			
	Annual Ccf	74,639,315	Delivery Rate	PGA Rate	Total Rate
<30	Block 1 Ccf	30,317,159	0.7952	$ 0.0078	$ 0.8030
>30	Block 2 Ccf	44,322,156	-	$ 0.8030	$ 0.8030

Aside from the obvious issues of complexity and customer understandability presented by this approach, this rate design creates issues with revenue stability and the Company's ability to recover its non-gas delivery charges from customers with usage that drops below 30 Ccfs during warmer than normal periods. When this occurs, customers will effectively pay the same rate, however, the Company will never receive the anticipated delivery revenue from that customer as the PGA does not consider delivery charges when adjusting for under/over recovery. The WCAR discussed later in this testimony and detailed in Schedule MWH-D1 addresses the shortcomings of the currently employed rate design and as a corollary results in the elimination for the requirement of the split block design. Further, this change simplifies the PGA itself, as the block structure that is currently employed tends to cause more volatile PGA rates than a flat PGA will.

Q. How does the Company's proposed change to the class customer charges compare to the CCOSS performed by Mr. Ryterski?

A. Table 4 below compares the current, CCOSS-based, and proposed Customer Charges, and shows the difference between the percentage change in proposed Customer Charge versus the CCOSS-based change:

Table 4

	Current	CCOSS (Equal ROR)	CCOSS Δ%	Proposed	Proposed Δ%	ProposedΔ vs. CCOSSΔ
Residential	$ 15.00	$ 18.29	21.9%	$ 17.00	13.3%	-8.6%
General	$ 28.83	$ 42.39	47.0%	$ 32.50	12.7%	-34.3%
Interruptible	$ 264.30	$ 648.81	145.5%	$ 319.00	20.7%	-124.8%
Standard Transport	$ 28.72	$ 125.80	338.0%	$ 32.50	13.2%	-324.9%
LVTransport	$ 1,451.53	$ 1,726.37	18.9%	$ 1,651.00	13.7%	-5.2%

Through its proposed changes to Customer Charges, the Company is making an effort to move the Customer Charge toward cost of service while still employing gradualism and a sensitivity to the impact the change will have on its lower use customers.

D. Bill Impacts

Q. Have you estimated the bill impacts to customers under the proposed rates?

A. Yes, Schedule MWH-D3 displays each class' bill impacts under various usage scenarios for the proposed rates shown in Schedule MWH-D2.

Q. Are the results of the bill impact study reasonable given the proposed increase?

A. Yes, I believe the results are reasonable as the usage impacts appear consistent with what would be expected from the application of the revenue requirement increase through the proposed rate design. Both the Residential and non-Residential classes see a predictable impact at varying usage.

IV. WEATHER AND CONSERVATION ADJUSTMENT RIDER

Q. Please summarize the proposed WCAR presented in Schedule MWH–D1 and its purpose.

A. The WCAR combines a weather normalization adjustment and a conservation adjustment so only one additional line item is required on a customer's bill. This rider is designed to normalize the annual variations in weather and account for the loss in revenues associated with implementation of Company-sponsored conservation measures. As the Commission has recognized in the past, both of these factors – weather and conservation – can have significant impacts on utility revenues that ultimately may impact the utility's opportunity to recover its cost of providing service and earn a reasonable return on its investments. As explained above, the implementation of this recovery mechanism eliminates the need for the Residential split block rate design, which previously provided some mitigation of the effects of weather and conservation on residential revenues.

While I am not an attorney, my understanding is that the mechanisms included in the WCAR are authorized by Subsection 386.266.3, RSMo, which provides:

> Subject to the requirements of this section, any gas or electric corporation may make an application to the commission to approve rate schedules

> authorizing periodic rate adjustments outside of general rate proceedings to adjust rates of customers in eligible customer classes to account for the impact on utility revenues of increases or decreases in residential and commercial customer usage due to variations in either weather, conservation, or both.

The weather adjustment component in the WCAR calculation uses equations and tariff provisions that are generally consistent with the weather normalization adjustment riders recently approved by the Commission in the Laclede Gas Company rate cases (File Nos. GR-2017-0215 & GR-2017-0216) and the Liberty Utilities rate case (File No. GR-2018-0013). However, in the WCAR proposed by Ameren Missouri, the conservation component is added to the weather adjustment component for final billing. The conservation adjustment calculation is analogous to the conservation mechanism used by Ameren Missouri's electric business for recovering lost revenue from the promotion of energy efficiency measures. The calculation of the final WCAR is summarized below and defined in greater detail for each component in Schedule MWH-D1.

<u>Weather & Conservation Rate</u>

$$\mathrm{WCR} = \mathrm{TWA} + \mathrm{CR}$$

WCR = Weather and Conservation Rate to be calculated independently for each of the Company's service classes, including both the Conservation and Weather Adjustment where applicable

TWA = Total Weather Adjustment, rate equaling the sum of the effective Annual Weather Normalization Adjustment ("AWNA") and Annual Reconciliation Rate ("ARR") from the Weather Adjustment Calculation

CR = Conservation Rate, equaling the Net Conservation divided by the expected retail sales for each Service Classification

Q. What will the WCAR accomplish?

A. First, the WCAR reduces complexity of rate design for customers, which supports increased customer understanding of rates. Second, the WCAR will more accurately account for changes in weather and conservation that impact non-gas revenues over time, as allowed by law. Ameren Missouri's current tariff does neither. The current split block rate design attempts to mitigate most of the gains or losses associated with non-gas revenues that vary due to weather by attempting to cover all of the non-gas costs with revenues from the first 30 Ccf of a customer's monthly usage. For some lower use customers around the 30 Ccf break point, warmer than average months drive their usage below 30 Ccf resulting in the Company under-recovering a portion of the non-gas revenue requirement. These unrecovered non-gas costs cannot be recovered through updates to the PGA. In addition to promoting revenue stability for the Company, the WCAR will provide customers with continued predictability and stability on their bills.

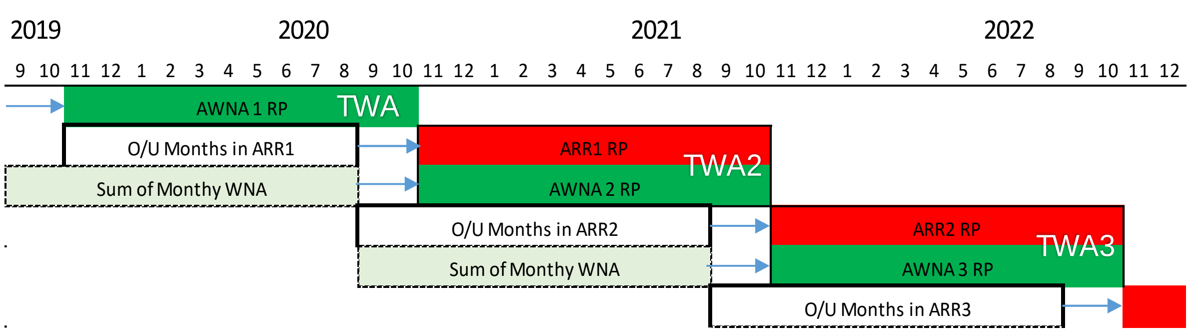
Q. Which classes will the WCAR apply to?

A. The WCAR will apply to all classes, but only the Residential and General Service classes will include the weather adjustment component of the rate previously mentioned.

Q. What are the biggest differences between what Ameren Missouri is proposing in its WCAR compared to what has been approved by the Commission in Laclede's and Liberty Utilities' recent cases?

A. The biggest difference is the addition of the conservation calculation in the Company's proposed WCAR. The Conservation Rate is described later in my testimony and in greater detail in Company witness Laureen Welikson's testimony in this case. Less substantive changes have also been applied to the weather calculation to simplify its design and recovery, and minor changes to inputs unique to each utility are utilized. To simplify the weather calculation's design, the Company is proposing to eliminate the practice of forecasting sales for the final two months of the period used to reconcile actual recoveries under the rider to the expected recoveries. Instead, Ameren Missouri's WCAR uses the first 10 months of actual sales from the most recent annual recovery period, and the last 2 months of actual sales from the previous period to determine the over/under to be applied to the reconciliation. The Company also proposes to reduce the frequency of filings to an annual filing that only requires a single AWNA period to be in effect at a given time instead of two separate, overlapping AWNA periods. Table 5 below demonstrates the timing of the annual AWNA and ARR and associated period being trued up in the ARR. The combined AWNA and ARR will be the TWA component of the WCAR.

Table 5



The Company plans to have the annual WCAR rates take effect in the billing month of November, around the same time the Company makes its annual update to its PGA rates.

Q. How is the conservation component of the WCAR quantified and defined?

A. Gas margin rates and load shapes for the various energy efficiency programs have been developed for measuring the revenue impacts for a given level of gas savings associated with the various technological improvements that empower customers to better conserve. The savings reported from the energy efficiency programs will be allocated to each month using the load shapes, with the margin rates then being applied to convert the Ccf to dollars, and both are included in the WCAR tariff sheets in Schedule MWH-D1. The margin rates reflected in the tariff were based on a marginal rate study of the entire population of Ameren Missouri gas customers for a historical year, which determined the bill reduction that would be associated with an incremental reduction in usage.

Q. Generally, how will the conservation mechanism be calculated and applied to a customer's bill under the WCAR?

A. For a given twelve-month recovery period, the Conservation Rate ("CR") will be determined by taking the total Net Conservation ("NC") divided by the Projected Retail Sales ("PRS") for each service classification.

$$CR = NC/PRS$$

Net Conservation is composed of two parts: the Projected Conservation ("PC") and the Cumulative Conservation Reconciliation ("CCR").

$$NC = PC + CCR$$

The following definitions are set out in the tariff:

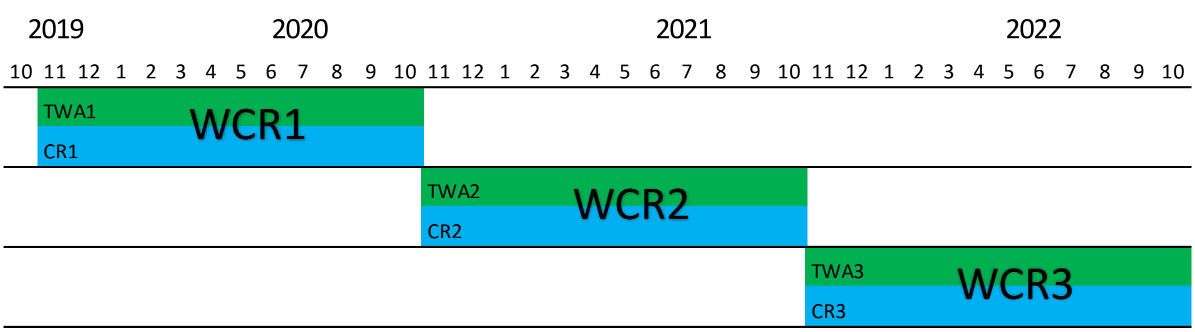
PC = Projected Conservation is the Company’s C projected by the Company to be incurred during the applicable recovery period.

C = Conservation, in dollars, to be collected for a given month, for a given Service Classification

CCR = Cumulative Conservation Reconciliation is equal to the cumulative difference, if any, between the PC revenues billed during the previous recovery period resulting from the application of the NC component of the CR and the Company's C through the end of the previous recovery period (which will reflect projections through the end of the previous recovery period due to timing of adjustments). Such amounts shall include monthly interest charged at the Company's monthly short-term borrowing rate.

The PC is the sum of all the of monthly conservation dollars to be collected over the applicable recovery period, with CCR capturing the cumulative difference, if any, that has been billed during previous recovery periods. As described earlier in this testimony, once the CR is developed it will be combined with the TWA to create the Weather and Conservation Rate ("WCR") for a single rate filing outlined in Table 6 below.

Table 6



Q. Why doesn't Ameren Missouri increase the number and frequency of rate cases in lieu of implementing the WCAR?

A. While more frequent rate cases would provide the Company an opportunity to better account for conservation that had been achieved through Ameren Missouri's energy efficiency programs, more frequent cases would still result in conservation-related losses and weather-related revenue variations to the Company because of regulatory lag.

Further, more frequent rate cases are not preferable due to the cost and resources associated with conducting a rate case. The WCAR will enable the Company to adjust for changes in conservation on a regular basis outside of a rate case, ensuring customers' rates remain stable, the Company's recovery of revenues is adequate and stable, and the cost of administrating the tariffed rates is kept to a minimum.

V. PURCHASED GAS ADJUSTMENT TARIFFS

A. Consolidating Incremental Rolla Area PGA into a Single PGA

Q. Please briefly describe your proposal to consolidate the two PGA rates into one.

A. Currently, Ameren Missouri maintains a separate adder called the Incremental PGA for Rolla area (consisting of Owensville, Rolla, and Salem) customers. The Company is proposing to combine Rolla area customers with the larger non-Rolla customer base for calculating the PGA rate and administering the tariff moving forward. The separate PGA tariff sheet applicable to service in the Rolla area would be removed, and all Ameren Missouri customers in each class would pay the same PGA rate. These changes are shown in Schedule MWH-D1.

Q. Why does Ameren Missouri propose to combine the non-Rolla and Rolla service areas under a single PGA?

A. First, it is common for utilities to consolidate and incorporate smaller service territories into their larger operations over time, provided the potential increase in bills is reasonable and not overly burdensome for customers. The small potential impact on non-Rolla customers of the consolidation into a single PGA is quantified below. Second, gradual consolidation of service territories reduces some of the administrative requirements in tracking and reporting separate areas, maintaining and developing separate tariffs and rates, and reduces the possibility of customer confusion when attempting to interpret which rates should apply to them. Moreover, the justification for prior distinctions between Rolla and non-Rolla customers has eroded over time as the Company's gas system has been jointly planned and operated. The existing non-Rolla PGA actually covers customers served in two distinct geographic areas and by two distinct interstate pipelines. While the costs incurred for the customers served in mid-Missouri by Panhandle Eastern Pipe Line Company, and those incurred for the customers in southeastern Missouri by Texas Eastern Transmission L.P. and Natural Gas Pipeline Company of America are each incurred for the benefit of the specific customers in those geographic regions, the recovery of all of those costs is spread uniformly across all non-Rolla customers. Inclusion of the Rolla customers in this system-wide recovery of all commodity-related costs is a logical extension of the current practice employed for the rest of the Company's gas customers.

Q. What is the impact to non-Rolla Residential class customers of consolidating the PGA into one rate?

A. The incremental PGA allocation applied to Rolla customers is approximately $676,127 - $452,331 for Rolla Residential customers and $223,795 for Rolla General Service customers. If the $452,331 were spread across the entire Residential class, the incremental increase to non-Rolla residential customers would be $.0061 per Ccf, or 32 cents per month. An Ameren Missouri residential customer who uses an average of 52.29 Ccf per month would have a total bill of approximately $57.00. The addition of an incremental $.0061 - or approximately 32 cents per month - equals a 0.56% increase on an average customer's total bill. Table 7 below shows the projected impact on non-Rolla residential customers.

Table 7

Non-Rolla Total Bill Impacts - Residential

73,736,862	Res Test Year Normal Sales
1,410,031	Res Test Year Customers
52.29	Avg Ccf use per Res cust
0.0078	Current Non Rolla PGA Rates Block 1
0.803	Current Non Rolla PGA Rates Block 2
$56.99	Average Non Rolla Bill
$0.32	Monthly Increase from Rolla Cost at 52.29 Ccf
0.56%	Percent Increase Impact to Total Bill

Ccf	Avg Monthly Res Bill	Monthly increase from Incremental RPGA	Non-Rolla Monthly Bill Impact %
10	$23.03	$0.06	0.27%
20	$31.06	$0.12	0.40%
30	$39.09	$0.18	0.47%
40	$47.12	$0.25	0.52%
50	$55.15	$0.31	0.56%
60	$63.18	$0.37	0.58%
70	$71.21	$0.43	0.60%
80	$79.24	$0.49	0.62%
90	$87.27	$0.55	0.63%
100	$95.30	$0.61	0.64%

Q. What is the impact to non-Rolla General Service customers of consolidating the PGA into one rate?

A. The average non-Rolla General Service customer uses approximately 237 Ccfs per month at a cost of around $215 per month. The $223,795 of cost spread across the entire General Service class results in an increase of approximately $1.45 per month for each customer, or a 0.67% increase to the total average bill. Table 8 below shows the impact at various levels of usage.

Table 8

Non-Rolla Total Bill Impacts - General Service

36,482,059	Gen Service Test Year Normal Sales
154,094	Gen Service Test Year Customers
236.75	Avg Ccf use per Gen Service cust
0.48	Current Non Rolla PGA Rate
$215.60	Average Non Rolla Bill
$1.45	Monthly Increase from Rolla Cost at 52.29 Ccf
0.67%	Percent Increase Impact to Total Bill

Ccf	Avg Monthly Res Bill	Monthly increase from Incremental RPGA	Non-Rolla Monthly Bill Impact %
100	$107.72	$0.61	0.57%
200	$186.61	$1.23	0.66%
500	$423.28	$3.07	0.72%
1,000	$817.73	$6.13	0.75%
2,000	$1,606.63	$12.27	0.76%
3,000	$2,395.53	$18.40	0.77%
5,000	$3,973.33	$30.67	0.77%
7,500	$5,892.28	$46.01	0.78%
10,000	$7,598.03	$61.34	0.81%
15,000	$11,009.53	$92.02	0.84%

Q. What is the new PGA rate to be applied to all Residential and General Service class customers under the proposed consolidated flat rate design?

A. Using the General Service rate as an illustration, since it more explicitly shows the change in PGA without the block splitting, the current PGA rate is $0.4600/Ccf. The proposed PGA rate would increase by $0.0066/Ccf, to $0.4666/Ccf in order to recover the same projected revenue as the current PGA rate design. The $0.4666 would apply to both the General Service and Residential classes as a flat rate. The updated rates and consolidated PGA tariff are reflected in Schedule MWH-D1.

Q. Can you provide a recent example of when the Missouri Public Service Commission has approved the consolidation of separate rates for areas within a utility's service territory?

A. Yes, in an order effective June 25, 2016, in File No. WR-2015-0301, the Commission approved the consolidation of the Missouri American Water Company's 9 rate districts into 3 districts, with the ultimate goal of moving toward a fully consolidated state-wide pricing method.

B. Change to Residential PGA Design

Q. Does Ameren Missouri intend to keep the split block design for the Residential PGA?

A. No. With the implementation of the WCAR, the current Residential block design will no longer be necessary. Since the split block non-gas delivery rate for Residential customers was designed to work in combination with the PGA split block rate design for recovery of their respective revenue requirements or costs, the PGA rate design should also move to a flat rate design.

Q. Please explain the current Residential PGA block design and how the Company proposes to transition it to a flat rate.

A. Under the existing PGA rate design, a flat rate is first calculated for both the fixed service customers (Residential and General Service) and the Interruptible customers. Absent the Residential split block mechanism, this flat rate would apply to both the General Service and Residential classes. Currently, however, the total PGA rate developed for fixed service customers takes one additional step by separating this rate into two blocks for the Residential class. This is required to apply any change in the PGA equally to both Residential blocks. Under the proposed WCAR, the added step of modifying the Residential block would be eliminated as the flat block rate design would no longer require the adjustment and the rate will simply match the rate currently in place for the General Service class. The total amount recovered from the respective classes would not change, merely the rate design.

Q. Please explain why the current Residential rate design requires the PGA to be split into separate blocks.

A. The Residential rate implemented in the Company's last gas rate case was designed so that the >30Ccf PGA rate would be equal to the <30Ccf non-gas delivery rate, with any additional variation in Residential PGA being applied equally to both the first and second PGA blocks. In this way customers paid the same total rate regardless of usage since the total of Block 1 would always equal the total of Block 2, creating what is essentially a rather complicated flat rate design. The unique requirements of the Company's existing residential rate design are what drove the creation of the split block design to recover Residential PGA costs. With the implementation of a flat rate design for the Residential non-gas delivery charges, the split block design becomes unnecessary for recovering PGA costs. Additionally, and as discussed in the Rate Design section of this testimony, the implementation of the WCAR replaces the need for the split block design, as weather and conservation can now be addressed more directly, as opposed to through complex rate design. Schedule MWH-D5 shows what the total Residential rate will look like under a flat rate delivery and flat PGA charge.

VI. MISCELLANEOUS TARIFFS REVISIONS

A. Changes to Rules and Regulations Governing Extensions

Q. Please summarize the Company's proposed changes to its Rules and Regulations governing service line extensions and relocations and how this compares to the current policy.

A. Currently, the Company assesses a $4.30 per foot charge for all footage in excess of 60 feet on the customer's property to determine the customer's contribution for a requested service line extension. This applies to both the Residential and non-residential customers. For Residential service line and meter relocations, $8.50 per foot is charged for relocating service pipe, and a flat $260 is charged for meter relocation. For non-residential customer relocations, the costs are estimated for each project.

The proposed changes to the Company's service extension tariffs are twofold:

1) First, the proposed changes eliminate the current distinction of service line extension costs based on customer type (Residential versus non-Residential customers) and replaces it with a more appropriate distinction based on the size of pipe being installed or relocated.

2) Second, the proposed changes apply the 3-year revenue test used for main extensions to larger service extensions that currently receive no consideration for the additional revenues provided. This is described in greater detail within this section below

Q. What is the proposed distinction in costs mentioned in 1) above?

A. The Company is proposing a more direct "cost to serve" distinction so that customer contributions for service line extensions and relocations are based on the size of the pipe being installed or relocated instead of basing those charges on customer type. A more accurate and direct method of charging for service extensions is through the separation of cost based on the size of the pipe being installed or relocated. The Company uses 1 inch pipes for serving smaller customers and larger 2 inch pipes for serving customers with higher usage requirements, each with its own unique cost and installation considerations. The separation of costs into these buckets provides a better tool for approximating the cost for a particular project. The details of these modifications are on tariff page 19 in Schedule MWH-D1.

Q. What are the benefits of applying the 3-year revenue test mentioned in 2) to larger service line extension projects?

A. Currently, large projects with sufficient revenues to justify their main extension cost don't also receive a consideration of those revenues when factoring in the contribution required for the service extension. The proposed addition in the tariff simply allows the Company, when applicable, to also consider the service extension cost in the 3-year revenue test for pipes greater than 2 inches in diameter. Customers who provide a benefit to the system through higher revenues, which ultimately places more downward pressure on rates for everyone, will finally see some consideration of their expected revenues when calculating their service extension charge. This will result in applicants no longer being required to fund the entire cost of service line extensions when their projected 3 year revenues will cover some, if not all of the service line project cost. Ultimately, this will potentially lessen the upfront cost to the customer looking to develop in Missouri, while still limiting the exposure of uneconomic line extensions to existing customers. The details of these modifications are shown on tariff page 50 in Schedule MWH-D1.

Q. Under this proposal would customers be receiving credit for their revenues twice -- once under the main extension provisions of the tariff and again under the service extension provisions?

A. No, the 3-year revenues projected to be received from the customer can only be applied to either the main extension, service extension, or a combined total cost considering both in the same 3-year revenue test. In this way, expected revenues from the customer are not counted twice in both the main and service extension provisions.

B. Other Clean-Up Tariff Revisions

Q. Please summarize the other clean-up tariff revisions the Company proposes.

A. The Company has updated the following sections of the tariff included in Schedule MWH-D1:

1) Updated various charges listed on tariff sheet 19, Miscellaneous Charges;
2) Updated language on tariff sheet 20 for Excess Flow Valve Charges; and
3) Added language on tariff sheet 20.1 for charges relating to repeated service calls for transportation customers requiring monthly manual download of usage data.

Q. Does Ameren Missouri propose any changes to its Infrastructure System Replacement Surcharge ("ISRS") in this rate case?

A. No. Section 393.1015.6(1), RSMo. states, in part, that "[a] gas corporation that has implemented an ISRS pursuant to the provisions of sections 393.1009 to 393.1015 shall file revised rate schedules to reset the ISRS to zero when new base rates and charges become effective for the gas corporation following a commission order establishing rates in a general rate proceeding…" The Company currently has a Rider ISRS tariff on file, and the ISRS is already set to zero. Thus, a revised tariff is not needed, and has not been included with this filing. Ameren Missouri plans to reactivate its ISRS following the conclusion of this rate case. Plant-in-service additions for inclusion in a future ISRS would be limited to additions subsequent to the last day of the true-up period in this rate case.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Natural Gas Service.	)))	File No. GR-2019-0077

AFFIDAVIT OF MICHAEL W. HARDING

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Michael W. Harding, being first duly sworn on his oath, states:

1. My name is Michael W. Harding. I work in the City of St. Louis, Missouri, and I am employed by Union Electric Company d/b/a Ameren Missouri as the Manager of Rates & Analysis.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 29 pages and Schedule(s) MWH-D1 to MWH-D7, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Michael W. Harding

Subscribed and sworn to before me this 28th day of November, 2018.

Cathleen A Dehne
Notary Public

My commission expires: March 7. 2021

CATHLEEN A DEHNE
Notary Public – Notary Seal
St. Louis City – State of Missouri
Commission Number 17119727
My Commission Expires Mar 7, 2021

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

RESIDENTIAL SERVICE RATE

Applicable to gas service to all residential customers as defined in Section I.H. of Company's Rules and Regulations. As indicated in Section IX., Resale of Service of Company's Rules and Regulations, this service may not be resold.

1. Monthly Customer and Volumetric Meter Reading Rates.

Customer Charge	$17.00 per month
Delivery Charge	31.73¢ per Ccf

2. Minimum Monthly Charge. The Customer Charge.

3. Purchased Gas Adjustment. Applicable to all metered and/or billed Ccf, pursuant to the provisions of Rider A - Purchased Gas Adjustment Clause.

4. Yard Light Service. Any customer with an unmetered gas yard light will have 18 Ccf per month of gas added per light to each month's metered Ccf usage, for billing purposes. This unmetered yard light service is one of limited application. No new such unmetered service will be offered after February 18, 1998.

5. Seasonal Use. This schedule is a continuous service schedule. If service is disconnected at the request of the customer, and thereafter restored at the same location for the same occupant(s) within a six (6) month period following the date of the service disconnection, a reconnection charge will become due and payable when service is restored. The charge shall be computed by multiplying the Customer Charge by the number of months and fractions of months that service is disconnected, plus the Reconnection Charge as indicated in Section D. Miscellaneous Charges, Sheet No. 19. Customer shall not be billed the Customer Charge portion of Seasonal Use charge where a successor account for a Customer has been established at the premises during the interim period; however, the Reconnection Charge shall be applicable unless the premises was not subject to disconnection and reconnection during the entire interim period.

6. Payments. Bills will be rendered at monthly intervals, are due and payable within ten (10) days from their date of rendition and become delinquent after twenty-one (21) days from their date of rendition. The date of rendition is the date of mailing by the Company. Late payment charges shall be determined pursuant to Section VIII.F. of Company's Rules and Regulations.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

RESIDENTIAL SERVICE RATE (Con't.)

7. Term of Contract. Gas service will be provided under this rate for a period of not less than one year.

8. Tax Adjustment. Any license, franchise, gross receipts, occupation or similar charge or tax levied by any taxing authority on the amounts billed hereunder will be so designated and added as a separate item to bills rendered to customers under the jurisdiction of the taxing authority.

9. Rules and Regulations. Service will be rendered in accordance with the Company's Rules and Regulations for Gas Service on file with the Missouri Public Service Commission.

DATE OF ISSUE December 3, 2018 DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

GENERAL SERVICE RATE

Applicable to gas service to non-residential customers. As indicated in Section IX., Resale of Service of Company's Rules and Regulations, this service may not be resold.

1. Monthly Customer and Volumetric Meter Reading Rates.

Customer Charge	$ 32.50	per month
Delivery Charge		
First 7,000 Ccf	33.10¢	Per Ccf
Over 7,000 Ccf	21.92¢	Per Ccf

2. Minimum Monthly Charge. The Customer Charge.

3. Purchased Gas Adjustment.
Applicable to all metered and/or billed Ccf, pursuant to the provisions of the Rider A - Purchased Gas Adjustment Clause.

4. Payments.
Bills will be rendered at monthly intervals and are due and payable within ten (10) days from their date of mailing and become delinquent after twenty-one (21) days from their date of mailing. Pursuant to Section VIII.F. of Company's Rules and Regulations, any portion of any bill, other than deposit arrears, remaining unpaid after the delinquent date will have a late payment charge added thereto.

5. Term of Contract.
Gas service will be provided under this rate for a period of not less than one year.

6. Tax Adjustment.
Any license, franchise, gross receipts, occupation or similar charge or tax levied by any taxing authority on the amounts billed hereunder will be so designated and added as a separate item to bills rendered to customers under the jurisdiction of the taxing authority.

7. Rules and Regulations.
Service will be rendered in accordance with the Company's Rules and Regulations for Gas Service on file with the Missouri Public Service Commission.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

INTERRUPTIBLE SERVICE RATE WITH AN ASSURANCE GAS OPTION

1. Availability.
Whenever, in Company's sole judgment, gas is available for interruptible service, Company will make such service available to any qualified non-residential customer. To qualify, customer shall either provide adequate standby facilities and fuel for its use during periods when gas service is interrupted or shall give Company satisfactory evidence of its ability and willingness to curtail or cease operations during interruption. Gas service under other rates cannot be used for the same process, facility or equipment served under this rate. As indicated in Section IX. Resale of Service of Company’s Rules and Regulations, this service may not be resold.

2. Character of Service.
All gas delivery under this rate will be subject to interruption under Section 9. hereof and all gas consumed by customer during periods of non-interruption will be billed at the Interruptible Gas Delivery Charge, except for Assurance volumes as provided below. As a part of the contract for interruptible service, customer may request the Company to provide a specified daily quantity of firm sales gas to be available during periods of interruption, to be categorized as Assurance Gas and billed by Company at the Interruptible Gas Delivery Charge plus the Assurance Gas Surcharge and the firm Purchased Gas Adjustment (PGA) factor rate. For billing purposes Assurance Gas volumes shall be considered the first through the meter. Customer will be required to contract with Company, by June 1 of the initial contract year, for the daily quantity of Assurance Gas desired. Customer must notify Company of any changes in such Assurance Gas Level by June 1 of subsequent contract extension years. All other gas consumed by customer during any period of interruption shall be considered and billed by Company as Unauthorized Gas.

3. Monthly Customer and Volumetric Meter Reading Rates.

Customer Charge:	$319.00	per month
Interruptible Gas Delivery Charge:		
First 7,000 Ccf	33.10¢	Per Ccf
Over 7,000 Ccf	19.13¢	Per Ccf
Assurance Gas Surcharge:		
First 250 Ccf per day	1.17¢	Per Ccf
All Over 250 Ccf per day	1.63¢	Per Ccf

DATE OF ISSUE December 3, 2018 DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn (Name of Officer), President (Title), St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

INTERRUPTIBLE SERVICE RATE WITH AN ASSURANCE GAS OPTION

Unauthorized Gas Use Charge:
All volumes of natural gas taken by a customer in excess of the level of contracted daily Assurance Gas, during any period of curtailmant called by the Company, is ''unauthorized use'' and will be assessed ''Unauthorized Gas Use Charges''. This charge shall be applicable to customers that are impacted by Critical Day and/or curtailment provisions. Company will provide customer no less than two (2) hours advance notification before assessing Unauthorized Gas Use Charges. Unauthorized Gas Use Charges shall be billed as follows:

Unauthorized Gas Use Charges:

1) $6.00 (six dollars) for each Ccf of unauthorized use, plus
2) 150% (one hundred fifty percent) of the highest cost of gas purchased by the Company during the Unauthorized Gas Use Charge period (period of interruption), plus
3) all intrastate and/or interstate pipeline penalties and other charges incurred by the Company which are attributable to a customer's unauthorized use.

All intrastate and interstate pipeline penalties and other charges shall be attributed and assigned to the unauthorized gas used by the specific Interruptible Service customer.

All Unauthorized Gas Use Charge revenues billed to customers will be considered as gas cost recovery and will be used in the development of the Actual Cost Adjustment (ACA) factor of the Company's Purchased Gas Adjustment (PGA) Clause.

4. Minimum Monthly Charge. The Customer Charge.

5. Purchased Gas Adjustment.
Applicable to all metered and/or billed Ccf, pursuant to the provisions of Rider A - PGA Clause. The difference between the Interruptible Sales Total PGA factor and the Firm Sales Total PGA factor of Rider A shall apply to the monthly billed Assurance Gas Ccf. The Interruptible Sales Total PGA factor of Rider A shall apply to all of the monthly billed Ccf.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

INTERRUPTIBLE SERVICE RATE WITH AN ASSURANCE GAS OPTION

6. Payments.
   Bills will be rendered at monthly intervals and are due and payable within ten (10) days from their date of mailing and become delinquent after twenty-one (21) days from their date of mailing. Pursuant to Section VIII.F. of Company's Rules and Regulations, any portion of any bill, other than deposit arrears, remaining unpaid after the delinquent date will have a late payment charge added thereto.

7. Term of Contract.
   Gas will be provided under this rate for a term of not less than one (1) year. Said term shall continue on a year-to-year basis thereafter unless cancelled by either customer or Company in writing at least sixty (60) days prior to contract termination.

8. Tax Adjustment.
   Any license, franchise, gross receipts, occupation or similar charge or tax levied by any taxing authority on the amounts billed hereunder will be so designated and added as a separate item to bills rendered to customers under the jurisdiction of the taxing authority.

9. Rate Application.
   Gas delivery under this rate shall be interrupted when in the Company's sole judgment it is necessary to limit the Company's system sendout or when the gas supply is limited by other system operating restrictions. Any interruption of service will be performed in accordance with the Curtailment of Service Schedule contained in the Company's Rules and Regulations.

   Assurance Gas will be billed by Company during all months of the year as the first gas through the meter up to the Assurance Gas level. All additional gas consumed each day shall be considered as Interruptible Gas during non-interruptible periods and as Unauthorized Gas during periods of interruption.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

INTERRUPTIBLE SERVICE RATE WITH AN ASSURANCE GAS OPTION

10. Rules and Regulations. Service will be rendered in accordance with the Company's Rules and Regulations for Gas Service on file with the Missouri Public Service Commission.

11. Critical Day

    A. Critical Day Declaration

    A Critical Day may be declared by the Company for a specific area or the Company's entire gas system whenever, in the Company's sole judgment, one of the following conditions occurs or is anticipated to occur:

    1. Company experiences failure of transmission, distribution, or gas storage facilities
    2. Transmission or distribution system pressures or other unusual conditions that may jeopardize the operation of Company's gas system
    3. Company's transportation, storage, or supply resources are being used at or near their maximum rated, tariff, or contractual limits
    4. Any of Company's transporters or suppliers declares the functional equivalent of a Critical Day or force majeure conditions.

    B. Unauthorized Use Related to Critical Days

    Unauthorized Use Related to Critical Days shall mean the unauthorized use of Company-supplied gas on a critical day. If such unauthorized use of gas occurs, the Company shall charge the customer, and the customer shall pay a penalty for all unauthorized use as set forth in Section 3 herein.

12. Discontinuation of Service

    Regardless of the assessment of the aforementioned Unauthorized Gas Use Charge, the Company retains the right to terminate such unauthorized use by disconnecting the customer's service if necessary, including any Assurance Gas, to protect the reliability of service to other customers.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

NATURAL GAS TRANSPORTATION SERVICE

1. Availability

This service schedule is available: 1) to all non-residential customers on a per meter basis and 2) to the premises of "Eligible School Entities," which are the eligible school entities as defined in Section 393.310 RSMo, 3) to the premises of eligible school entities as defined in Section 393.310 RSMo which were on sales service during the immediately preceding twelve (12) months ("New Eligible School Entities"). Such service is applicable to individual customers that can individually secure and arrange for the delivery of sufficient supplies of natural gas to the Company's designated city gate and to the Eligible School Entities and New Eligible School Entities that can do so through aggregate contracts negotiated by and through a not-for-profit school association. The Company will not provide this service to any customer who uses such gas primarily to heat premises that provides temporary or permanent living quarters for individuals, unless the customer demonstrates to the Company that it has contracted for primary firm capacity with the upstream supplying intrastate and/or interstate pipelines to meet the customer's peak needs, or unless the customer demonstrates to the Company that the customer has adequate and usable alternative fuel facilities to meet the customer's energy needs.

The "transportation customer" shall be responsible for the purchase and transportation of its gas needs to the Company's city gate which serves such customer.

The Company shall not sell gas to any of its transportation customers except as specifically provided for in this service classification.

2. Monthly Customer, EGM and Volumetric Meter Reading Rates(4)

	Standard Transportation(1)	Large Volume Transportation(2)
Customer Charge:	$32.50	$1,651.00 per month
Electronic Gas Meter (EGM) Charges(3):		
Administrative Charge:	$45.96	$45.96 per month
Meter Equipment Charge:	Section G. Misc Charges Sheet No. 20.1, as applicable.	
Transportation Charge:		
First 7,000 Ccf	33.10¢ per Ccf	33.10¢ per Ccf
All Over 7,000 Ccf	13.98¢ per Ccf	14.77¢ per Ccf
Aggregation and Balancing Charge:		
Eligible School Entities and New Eligible School Entities Only	0.47¢ per Ccf	0.47¢ per Ccf

DATE OF ISSUE December 3, 2018 DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

NATURAL GAS TRANSPORTATION SERVICE

(1) A customer, at the date of its contract, whose annual transportation requirements are expected to be 600,000 Ccf or less.
(2) A customer, at the date of its contract, whose annual transportation requirements are expected to be greater than 600,000 Ccf.
(3) Not applicable, to the individual meters of Eligible School Entities, and New Eligible School Entities as defined in paragraph 1. above, using less than one hundred thousand Ccfs annually.
(4) In addition to the charges contained herein all Eligible School Entities and New Eligible School Entities shall pay all costs necessary to ensure that the Company, its other customers and local taxing authorities will not have or incur any negative financial impact as a result of the natural gas aggregation program established by Section 393.310, RSMo.

Authorized Gas Use Charge:

All Ccf of Company-owned gas consumed by customer with authorization from Company during periods of non-interruption of any sales service will be billed at the applicable service area’s firm sales service Purchased Gas Adjustment (PGA) factor plus 40%. The payment of the Authorized Gas Use Charge will be in addition to the above Customer, EGM and Transportation Charges. Company will not actively market the sale of Company-owned gas to transportation customers and will sell such gas only in response to the transportation customer’s request. Authorized Use gas shall not be available to a transportation customer for more than twenty (20) days out of any calendar month.

Unauthorized Gas Use Charge:

All Ccf of Company-owned gas consumed by customer without authorization from Company, will be billed at the “Unauthorized Gas Use Charge”. This charge shall be applicable to customers that are impacted by Critical Day and/or curtailment provisions. Company will provide Customer no less than two (2) hours advance notification before assessing Unauthorized Gas Use Charges. The payment of the Unauthorized Gas Use Charge will be in addition to all other charges specified in this rate. Regardless of the assessment of the Unauthorized Gas Use Charge, the Company retains the right to terminate such unauthorized use by disconnecting the customer’s service if necessary to protect the reliability of service to other customers. Unauthorized Gas Use Charges shall be billed as follows:

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

NATURAL GAS TRANSPORTATION SERVICE

Unauthorized Gas Use Charge:

1) $6.00 (six dollars) for each Ccf of unauthorized use, plus
2) 150% (one hundred fifty percent) of the highest cost of gas purchased by the Company during the Unauthorized Gas Use Charge Period, plus
3) all intrastate and/or interstate pipeline penalties and other charges incurred by the Company which are attributable to a customer's unauthorized use.

All intrastate and interstate pipeline penalties and other charges shall be attributed and assigned to the unauthorized gas used by the specific transportation customer.

All Unauthorized Gas Use Charge revenues billed to customers will be considered as gas cost recovery and will be used in the development of the Actual Cost Adjustment (ACA) factor of the Company's Purchased Gas Adjustment (PGA) Clause.

3. Minimum Monthly Charge
The Customer Charge, EGM Administrative Charge and, as applicable, the EGM Meter Equipment Charge.

4. Purchased Gas Adjustment
All customers receiving transportation service will be subject to the provisions of the Company's PGA clause, Rider A. The ACA component of the Company's PGA clause shall be applicable to New Eligible School Entities for the first twelve (12) months of their participation in the gas aggregation program.

5. Payments
Bills will be rendered at monthly intervals and are due and payable within ten (10) days from their date of mailing and become delinquent after twenty-one (21) days from their date of mailing. Pursuant to Section VIII.F. of Company's Rules and Regulations, any portion of any bill, other than deposit arrears, remaining unpaid after the delinquent date will have a late payment charge added thereto.

6. Term of Contract
Service hereunder shall be for a minimum period of one (1) year.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

NATURAL GAS TRANSPORTATION SERVICE

7. Tax Adjustment

Any license, franchise, gross receipts, occupation or similar charge or tax levied by any taxing authority on the amounts billed hereunder will be so designated and added as a separate item to bills rendered to the customers under the jurisdiction of the taxing authority. For New Eligible School Entities participating in aggregate purchasing contracts, all applicable taxes shall be computed based on billed revenues determined under paragraph 2. above. Additional applicable taxes shall also be levied and computed based upon the total actual gas supply and capacity release costs incurred on behalf of each of the accounts within the group of individual New Eligible School Entities. Such additional taxes applicable to the latter accounts will be paid each month directly to the appropriate taxing authority by each school or by the school's agent.

8. Terms and Conditions

A. Transportation service under this schedule will be made available to customers upon request when the Company has sufficient distribution capacity to supply such service. If the Company determines that it does not have sufficient distribution capacity to provide the requested service it will, within 30 days of receiving a request for transportation service, provide to the customer requesting said service a written explanation of its capacity determination including a preliminary indication of changes to facilities necessary to effectuate such service, approximate cost to customer and time required to provide the requested service.

B. Service under this schedule shall require execution of a Gas Transportation Service Contract ("Contract") between the Company and the customer requesting transportation service in a form similar to that contained in Section 11 below.

C. Service will be provided only after requisite contracts and authority have been obtained by the customer to transport gas to the Company's facilities. Eligible School Entities or New Eligible School Entities participating in the school natural gas aggregation program must make a written request for pipeline capacity release to the Company on or before close of business May 31, to be effective July 1, of each year, except where said entities have switched from Standard Transportation Service. The Company will release its firm interstate pipeline transportation capacity, at its actual capacity cost, from the applicable interstate pipeline directly to the school or to the agent acting on behalf of the school for this program. Such release will be for a minimum term of one year and will be performed in accordance with the capacity release procedures and policies contained in the applicable interstate pipeline's Federal Energy Regulatory Commission approved tariff. Such release will be provided on a recallable basis, but the Company will not recall such capacity unless requested by the school or by the school's agent.

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

NATURAL GAS TRANSPORTATION SERVICE

D. All volumes of gas transported hereunder shall be of compatible pipeline quality

E. Gas delivered under this schedule shall not be resold by the customer.

F. Except as otherwise provided herein, gas transported for all current and future customers hereunder shall be metered by an electronic recording device with remote monitoring features for the recording of the customer's daily gas usage and real time flow data. The Company will install and the customer will pay for said meter at the monthly charge indicated in Section G. Miscellaneous Charges, Sheet No. 20.1. In addition, the customer shall arrange and pay for the installation and monthly costs of a commercial telephone line and 120 volt AC electrical power source, at a location designated by the Company, to facilitate the remote interrogation of the electronic recording meter by the Company.

G. In addition to collection of the rates and charges provided for in Section 2. above, the Company shall retain two percent (2%) of the quantities of natural gas received from the customer for reimbursement in kind from the customer for shrinkage or line losses.

H. Nominations

The following provisions shall be utilized by customers for nomination of customer owned gas:

(a) Customer’s deliveries for any day shall not exceed one hundred fifty percent (150%) of customer’s peak daily usage in the past 12 months.

(b) Customer may appoint a nominating agent, but customer retains responsibility for nominations as described herein.

(c) Nomination Deadlines

1. Month Ahead: The customer or their designee shall enter each month’s nomination in the Company’s gas transportation system by no later than 11:30 a.m. CCT on the first business day prior to the first day of the calendar month for which gas is being nominated.

2. Day Ahead: The customer or their designee shall enter changes to nominations in the Company’s gas transportation system by no later than 11:30 a.m. on the business day prior to the effective date of any subsequent change in the nomination. Such change in nomination shall be subject to approval by the Company.

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3. Intra-Day: Customer desiring a change of nomination for transportation of customer-owned gas after the day-ahead deadline specified in 2) above shall notify Company by 4:00 p.m. CCT of the day, subject to confirmation by the pipeline. Company may accept such change to nomination if the Company determines in its sole discretion that such change to nomination will not adversely impact the operation of Company’s gas system or adversely impact Company’s purchase and receipt of gas for other service classifications. Intra-day nominations shall conform to Company’s current gas transportation nomination form and must include customer’s name, account number, MMBtu per day, nomination effective date, pipeline, pipeline contract number, shipper and contact information.

I. Balancing Provisions

Daily Balancing and Cash-out of Customer-Owned Gas - Daily transportation gas receipts and deliveries shall be maintained in balance by the customer to the maximum extent practicable. Any daily imbalance which does occur, not related to a Critical Day, shall be subject to the terms and conditions of this Section. Should one of the interstate/intrastate pipelines serving the Company, elect to allow balancing on their system for any of the Company’s transportation customers, the customer’s actual metered volumes grossed up for system losses will be allocated by the Company directly to the applicable interstate/intrastate pipeline company.

Group Balancing of Customer-Owned Gas – On or after October 1, 2004, Group Balancing will be available to an entity (“Group Manager”), under contract with the Company, who represents one or more Natural Gas Transportation Service customer accounts (“Customer Group”) on Company’s Natural Gas Transportation Service tariffs. Group Balancing is a service provided by the Company that allows a Group Manager to deliver gas to the Company, on an aggregated basis, for two or more accounts that comprise the membership in a Customer Group. The Customer Groups’ metered locations must all be served by the same interstate pipeline.

Customer shall provide written notification, no later than ten (10) business days prior to the beginning of the month in which service is to begin, to the Company, of its intent that its account be managed by a Group Manager. Customer must also provide written notification, no later than ten (10) business days prior to the end of the month in which service is intended to be terminated, of its intent to terminate participation in a Customer Group. Not withstanding the foregoing notifications, a Customer’s account must stay in a Customer Group for a minimum of one (1) billing cycle.

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The Group Manager shall enter into a contract with Company for service hereunder on a form, prescribed by Company, which shall include without limitation, terms and provisions addressing contract term, customer account information, nomination and curtailment, procedures, billing and payment, security/creditworthiness assurances, assignment limitations, and notices.

The Customer Group will be considered as one customer for purposes of calculating the daily balancing and cash-out provisions of this Section I. The Group Manager will be billed and is responsible for any such imbalance, Unauthorized Use Charges, and all intrastate and/or interstate pipeline penalties and other charges incurred by the Company which are attributable to a Customer Group’s unauthorized use. All other transportation service tariff charges will be billed to the individual customer accounts, including but not limited to Customer Charges, Transportation Charges, Administrative Charges, and where applicable, Meter Equipment Charges and Transportation Charge Adder.

Eligible School Entities or New Eligible School Entities, using less than one hundred thousand Ccfs annually, positive and negative imbalances will be netted and cashed-out on a monthly basis in accordance with the appropriate pricing provision under this Section I with the monthly PGA and the monthly average of the daily midpoint prices being used as the base for the determination of the cash-out imbalances.

A negative imbalance is created when the customer's gas nominated to the Company as adjusted by the loss factor is less than the quantities of gas used by the customer. A negative imbalance during periods of a Company Critical Day Notification will be considered unauthorized use and billed at the Unauthorized Gas Use Charge set forth in Section 2. herein.

A negative imbalance during other times will be considered balancing use and will be billed at the following tiers and referred to as the “Balancing Gas Use Charge”:

Daily negative imbalances of 5% or less of nominations as adjusted by the loss factor will be billed at the greater of the applicable service area’s firm sales service PGA factor or at the daily midpoint indexed commodity price as quoted in the publication “Platt’s Gas Daily” for that date plus a transportation charge of $0.150 per Ccf. Daily negative imbalances greater than 5% of nominations as adjusted by the loss factor will be billed at the greater of the applicable service area’s firm sales service PGA factor plus 10% or at the daily midpoint indexed commodity price as quoted in the publication “Platt’s Gas Daily” for that date plus a transportation charge of $0.150 per Ccf.

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A positive imbalance is created when the customer's gas nominated to the Company as adjusted by the loss factor exceeds the quantities of gas used by the customer. The Company will purchase positive imbalances at the following tiers:

Daily positive imbalances of 5% or less of nominations as adjusted by the loss factor will be purchased at the daily midpoint index commodity price as quoted in the publication "Platt's Gas Daily" for that date. Daily positive imbalances greater than 5% of nominations as adjusted by the loss factor will be purchased at ninety percent (90%) of the daily midpoint indexed commodity price as quoted in the publication "Platt's Gas Daily" for that date.

The index to be used will be specific for each transportation customer account as follows:
"Panhandle Eastern Pipe Line Co. – Panhandle, Tx.-Okla."
"Texas Eastern Transmission Corp. – Texas Eastern, ELA"
"Natural Gas Pipeline Co. of America – NGPL, Texok Zone"

In the absence of such published "Platt's Gas Daily" index, the Company will determine, subject to Commission's review in Company's Actual Cost Adjustment (ACA) filing, a suitable replacement source for such daily market price information.

The daily negative and positive imbalance billings so calculated will be applied to the customer's monthly bill. Net payments to customer will be included in the Company's PGA Clause ACA computation as purchased gas costs and net payments to Company will be included as revenue recovery.

J. Except as specifically provided for herein, all of the Company's Rules and Regulations for natural gas service which are not in conflict herewith shall apply to service rendered hereunder.

K. A contract existing between the Company and a customer on February 18, 1998 may continue in effect as an executed transportation contract, to the extent its provisions are not superseded by or in conflict with the provisions of this tariff, until such contract expires by its terms or is replaced by an executed transportation contract. Such existing contracts will be assigned to the Standard Transportation Rate if deliveries to the customer during the preceding calendar year totalled 600,000 Ccf or less and to the Large Volume Transportation Rate if deliveries during such period totalled in excess of 600,000 Ccf. For customers who do not have gas usage history for the preceding calendar year, such existing contracts will be assigned the applicable transportation rate based on estimated or projected deliveries.

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L. The Company shall have the right to interrupt, curtail or discontinue transportation service, in whole or in part at any time for reasons of force majeure or when in the Company's sole judgment, capacity or operating conditions so require, or it is desirable or necessary to make modifications, repairs or operating changes to its system. The Company shall provide customer such notice of the interruption, curtailment or discontinuance of service as is reasonable under the circumstances. The Company shall not discriminate between transportation and sales customers for purposes of determining the order and priority of interruption. The Company shall not be liable for and the customer shall indemnify the Company against and hold the Company harmless from any and all damages, claims, suits, actions or proceedings whatsoever threatened or initiated as a result of any interruption, curtailment or discontinuance of transportation service invoked by the Company.

M. All transportation service is firm in nature. If the Company’s local distribution system capacity is inadequate to meet all of its demands for service, the services supplied under this schedule will be curtailed in accordance with the Curtailment of Service Schedule contained in the Company’s Rules and Regulations.

9. Rules and Regulations

Service will be rendered in accordance with the Company’s Rules and Regulations for Gas Service on file with the Missouri Public Service Commission.

10. Critical Day

A. Critical Day Declaration:

A Critical Day may be declared by the Company for a specific area or the Company’s entire gas system whenever, in the Company’s sole judgement, one of the following conditions occurs or is anticipated to occur.

1. Company experiences failure of transmission, distribution, or gas storage facilities
2. Transmission or distribution system pressures or other unusual conditions that may jeopardize the operation of Company’s gas system
3. Company’s transportation, storage, or supply resources are being used at or near their maximum rated, tariff, or contractual limits
4. Any of Company’s transporters or suppliers declares the functional equivalent of a Critical Day or force majeure conditions

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B. Unauthorized Use Related to Critical Days:

Unauthorized Use Related to Critical Days shall mean the unauthorized use of Company-supplied gas on a Critical Day. If such unauthorized use of gas occurs, the Company shall charge the customer, and the customer shall pay a penalty for all unauthorized use as indicated below.

If the Company declares a Critical Day for its gas system or for a specific area of its gas system and Customer or Customer Group has an imbalance on such Critical Day in the same direction as an imbalance for Company's gas system or area thereof that results in the Company incurring penalties or fees for the day from one or more pipelines, customer or Customer Group may be billed Unauthorized Gas Use charges set forth in Section 2 herein.

C. Critical Day Notification:

The Company shall give notice to all Natural Gas Transportation Service customers impacted by the Critical Day of all Critical Day periods. Where feasible, notice shall be provided to the customer once Company receives such notice from the pipeline. The notice shall specify the expected duration of the Critical Day period. The means by which notification is given, whether by phone, fax, electronic mail, or some other means, shall be at the Company's option. Each holder of a Contract shall provide notification information, which may include but is not limited to a telephone number, fax number, or e-mail address, by which to receive notice on a 24-hour basis. The customer shall be deemed to have received notice upon issuance of the notice to the customer by the Company. The customer shall be deemed to have received notice if the telephone is not answered when called by the Company, or in the event of a mechanical breakdown or interruption of telephone service which prevents the call from being received.

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11. Form of Natural Gas Transportation Agreement

THIS AGREEMENT, made and entered into this ____ day of __________, 20___, by and between *UNION ELECTRIC COMPANY*, a Missouri corporation, its successors or assigns, hereinafter referred to as "Company," and the Transportation Customer, ______________________, a _____________ corporation with a facility in ________________, Missouri, its successors or assigns, hereinafter referred to as "Customer,"

WITNESSETH:

WHEREAS, Company owns and operates facilities for the distribution and sale of natural gas to Customer's premises; and

WHEREAS, Customer is entering into contracts for the purchase of natural gas for its own use from producers, marketers or from other suppliers and is arranging for the delivery of said gas to Company at one of its city gate stations; and

WHEREAS, Customer desires to contract with Company for the transportation of said gas through the distribution mains and pipes of Company to Customer's premises; and

WHEREAS, Company has agreed to the said request for transportation and Customer has agreed to transportation service from Company, subject to the terms and conditions of Company's Missouri Public Service Commission (Commission) approved Natural Gas Transportation Service tariffs.

NOW, THEREFORE, in consideration of the mutual covenants and agreements as herein set forth, both Company and Customer agree as follows:

ARTICLE I - SERVICE AND RATES

Company agrees to receive and transport for Customer's account quantities of natural gas up to a Maximum Daily Quantity (MDQ) of _____ Ccfs per day, plus a quantity of gas for Shrinkage or Line Losses as provided for in Article III below. Customer agrees to pay Company for all services provided under this Agreement at the applicable rate and other charges specified in Company's Commission approved Natural Gas Transportation Service tariffs, as the same may be revised from time to time.

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ARTICLE II - TERMS AND CONDITIONS

This Agreement in all respects shall be and remain subject to the terms and conditions of Company's Commission approved tariffs, including without limitation its applicable rates, service classifications, riders and general rules and regulations, all of which are by this reference made a part hereof. This Agreement, including Company's Commission approved tariffs, shall be subject at all times to review, control, modification and regulation by the Commission in accordance with law.

Customer agrees that Company shall have the unilateral right to file with the Commission or any other appropriate regulatory authority and make changes effective in Company's Commission approved tariffs applicable to the service rendered hereunder. Company agrees that Customer may protest or contest such filings, and Customer does not waive any rights it may have with respect to such filings.

ARTICLE III - LINE LOSSES

In addition to collection of the rates and charges provided for in Article I above, Company shall retain the applicable percentage provided pursuant to Company's Commission approved tariffs of the quantities received from Customer hereunder, for reimbursement in kind from Customer for shrinkage or line losses.

ARTICLE IV - TERM

This Agreement shall be effective for one (1) year and shall be automatically renewed in increments of one (1) year. Termination of this agreement is subject to the Company’s Commission approved tariffs.

Any portions of this Agreement necessary to correct or cash-out imbalances under this Agreement as required by Company's Commission approved tariffs shall survive the other parts of this Agreement until such time as such balancing has been accomplished.

ARTICLE V - DELIVERY POINTS

Customer will provide for delivery to Company of the volumes of natural gas to be transported at the city gate station on the distribution system of Company which serves Customer's premises, and Company shall deliver said volumes of gas to the outlet side of the Company meter at Customer's premises. In cases where Customer is served from a "Main Line Tap," the outlet of the city gate meter and Company delivery to Customer may be one and the same. Gas transported hereunder will be delivered to Company in the state of Missouri.

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ARTICLE VI - BILLING

All matters relating to billing, including, but not limited to, late payment charges and termination of service for nonpayment, shall be governed by Company's Commission approved tariffs regarding transportation service and applicable sales service.

ARTICLE VII - VOLUME OF GAS AND MEASURING EQUIPMENT

The volume of gas delivered to Customer will be that measured by the Company's meter at Customer's premises. It is Customer's responsibility to purchase or otherwise have delivered to its upstream transporter(s) sufficient quantities of gas to provide for the delivery through Company's meter. For all transport gas passing through Company's meter, 1000 CF and 1 dekatherm shall be considered equal.

Company will not be a party to solving disputes which arise between Customer, its upstream transporter(s), producers, marketers, or others, or agents of any of the above parties. Customer will be responsible for providing Customer's upstream transporter(s), producers, marketers, or others, any notices which are required by their contract for gas and delivery service.

Company reserves the right to provide a billing based on estimated quantities of gas delivered to Customer if a breakdown or other difficulty with metering equipment should occur.

Company is not in any way responsible for quality or quantity of gas delivered by a producer, marketer or other supplier to Customer's upstream transporter(s), and makes no warranties of any kind, express or implied, in such regard.

ARTICLE VIII - QUALITY AND PRESSURE OF GAS DELIVERED FOR TRANSPORTATION

The gas delivered by a producer or supplier to Company for transportation to Customer shall at all times be merchantable gas continuously conforming to the specifications applicable to gas delivered to Company by Customer's upstream transporter(s). Company shall have the right to refuse delivery of any gas not conforming to those specifications.

Delivery pressures to Customer shall be consistent with those presently provided for in Company's Commission approved tariffs. The maintenance of delivery pressure shall be subject to the demands of firm sales customers of Company being served at any particular time.

Company recognizes that the gas delivered to Customer will be commingled with other gas owned by Company. Therefore, to the extent gas delivered to Customer is not the same gas received by Company for transportation hereunder, the Company warrants that such gas will meet the Company's quality standards for gas sold to Customer under the Company's applicable Commission approved rate tariffs.

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ARTICLE IX - TITLE TO GAS

It is understood and agreed by the parties that in the performance of this Agreement, Company is engaged in a transportation service only and that ownership of the gas transported will at all times remain vested in Customer.

Customer hereby warrants its title to all gas delivered to Company hereunder and that such gas shall be free and clear from all liens, claims, and encumbrances whatsoever.

Company shall have no liability or responsibility for control of the gas to be transported until it is received by the Company from Customer's upstream transporter(s) at the point of interchange between the Company and Customer's upstream transporter(s). From such point, said gas shall be in the exclusive control of Company until redelivered to Customer's premises and Company shall be solely responsible for loss of (except as otherwise provided herein with respect to line losses or shrinkage), and damage caused by said gas.

ARTICLE X - LIABILITIES

Each party hereto assumes full responsibility and liability for its negligence in the operation of facilities owned by it or otherwise in connection with the purchase and/or transportation of gas. If gas service is discontinued by Customer's supplier for whatever reason, Customer agrees to waive with respect to Company any loss, claim, damage, or expense that Customer may incur by reason of such discontinuance.

ARTICLE XI - REPRESENTATIONS

Customer represents and warrants that if it uses natural gas primarily to heat a premise that provides temporary or permanent living quarters for individuals that: (i) it has contracted for primary firm capacity with the upstream supplying intrastate and/or interstate pipelines to meet Customer's peak needs or (ii) it has adequate and usable alternative fuel facilities to meet Customer's energy needs. In connection with representation (i) above, Customer agrees to provide Company copies of all of its contract(s) for primary firm upstream transportation capacity. Customer agrees to permit Company to inspect Customer's premises to verify its compliance with representation (ii) above. These representations and warranties shall survive the execution and delivery of this Agreement and shall continue in force throughout the term of this Agreement.

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ARTICLE XII - NOTICES

Any notice or notices given by either party under the terms of this Agreement shall be sent by certified mail to the following addresses:

To Company: Union Electric Company
____
____
____
Attn:____________________
Customer Services-Advisor

Customer: _________________________
____
____
____
____

or to such other addresses as either party may from time to time designate in writing.

The parties agree to notify the other of the name and address of the person or persons authorized to act for the party in respect to the routine operating matters under this Agreement and routine operating requests, reports, billings, and other matters of a routine nature shall, upon such notification, be directed to the persons so designated.

IN WITNESS WHEREOF, the parties hereto, in consideration of the agreements contained herein, have caused this Agreement to be executed by their duly authorized officials as of the day and year first above written.

UNION ELECTRIC COMPANY	***CUSTOMER***
	_____________________________
By_________________________	By_____________________________
Title:_____________________	Title:_________________________

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

THIS SHEET IS RESERVED FOR FUTURE USE

DATE OF ISSUE December 3, 2018 DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn President St. Louis, Missouri
Name of Officer Title Address

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

THIS SHEET IS RESERVED FOR FUTURE USE

DATE OF ISSUE December 3, 2018 **DATE EFFECTIVE** January 2, 2019

ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

MISCELLANEOUS CHARGES

A. Service Pipe Charges

Sheet No. 50 Paragraph B –
1. Service lines less than 2" - $260.00 per connection (tap), plus $6.00 per foot for all footage in excess of sixty (60) feet on customer’s property.
2. Service lines 2" and greater will utlize the approach set forth in Section V.B. in the Rules and Regulations

If for engineering reasons, the Company selects a route which results in more footage than the normal route to customer’s meter, then the lesser distance shall be utilized for footage charges, if any. Service pipe installations are based on normal pre-development and unobstructed conditions. Additional costs due to changes in surface conditions, unanticipated subsurface conditions or anticipated subsurface conditions (rock and underground conflicts) will be charged to the customer.

B. Service and Meter Relocations(1)

Sheet No. 51 Paragraph E and Sheet No. 55.1–
1. Meter relocation only - $260.00
2. Service lines less than 2" - $260.00 per connection (tap), plus $8.50 per foot
3. Service lines 2" and greater will estimate individual project cost

C. Meter Testing Charges

Sheet No. 54 Paragraph F - Meters less than 500 cfh. (at ½ inch water column pressure drop) $65.00 per meter. Meters greater than 500 cfh. (at ½ inch water column pressure drop) $150.00 per meter

D. Reconnection Charges per Connection Point

Sheet Nos. 5 and 68, Par. H-1 (Disconnection & Reconn.) $70.00

E. Returned Check Charge

A charge of $15.00 shall be assessed for any check submitted to the Company for payment for each occurrance where such check has been returned to the Company unpaid.

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MISCELLANEOUS CHARGES

F. Excess Flow Valve (EFV) Charges

1. Installation of an EFV shall be made by the Company in the case of a new service line or a scheduled replacement of a service line, without charge to the following customers:
   - Single family residences
   - Multi-family residences
   - Small commercial entities consuming natural gas volumes not exceeding 1,000 Standard Cubic Feet per Hour

2. Where customer requests an EFV on an existing service line without said device and where such service line is not otherwise scheduled for replacement, an EFV will be installed provided customer pays $1200.00 to the Company in advance of such installation.

3. Installation of an EFV shall only be available where service is provided to a customer served from a delivery system with a pressure of ten (10) pounds per square inch or greater throughout the year, where the service line is connected directly to the gas distribution main, and where the Company has no engineering or other valid reasons for not installing the EFV.

G. Electronic Gas Meter (EGM) Equipment Charge

Sheet No. 10 Paragraph 2, Sheet No. 12 Paragraph 3 and Sheet No. 13 Paragraph F. - This EGM Meter Equipment Charge shall apply to transportation customers who enter into contracts with the Company for transportation service to be provided under the Company's Natural Gas Transportation Service tariff commencing after November 1, 2000.

Gas transported under the Natural Gas Transportation Service tariff shall be metered by an electronic recording device with remote monitoring features for the recording of the customer's daily gas usage and real time flow data. The transportation customer will pay the Company a monthly per meter charge for said metering as follows:

EGM Meter Equipment Charge...........$21.00 per meter per month

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MISCELLANEOUS CHARGES

H. Daily Usage Information Charge

Applicable to Customers who enter into contracts with the Company for transportation service to be provided under the Company's Natural Gas Transportation Service tariff:

In order to facilitate remote interrogation of interval metering by the Company and provide daily usage information to Customer, the Company will install a remote monitoring device at each meter location where Customer receives Transportation Service. For each remote monitoring device, the Customer, at Customer's expense, shall provide access to a commercial telephone line and 120 volt AC electric power at a location designated by the Company. The telephone line shall be dedicated for Company's use. If a Customer does not provide access to a commercial telephone line and 120 volt AC electric power at a location designated by the Company, or, if interrogation is not possible due to a telephone service outage, Company will dispatch technicians each month with specialized equipment to capture the daily usage information necessary to bill Customer.

The charge to the Customer will be $170.00 for each occurrence.

If phone line is installed and Company is unable to retrieve daily usage information it will be the Customer's responsibility to verify that the Customer's phone line is in working condition. In addition, Company reserves the right to charge Customers for each service call to investigate the remote monitoring device if such service call is the sole result of telephone service outage.

I. Customer Benefit Projects

Where work is done by Company on Company and/or customer facilities for the benefit and/or convenience of the customer/customer designees, the costs of such nonstandard service shall be billed to customer on the basis of Company's cost quotation agreed to by customer prior to starting project. Such "Customer Benefit" work shall include, but not be limited to, temporary service for construction sites, service calls and cost estimates for new business extensions which in the Company's determination will require excessive time to prepare for the customer. When any advance payments are collected prior to starting a project to be based on actual costs, any over payment will be refunded to payee.

DATE OF ISSUE December 3, 2018 DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn President St. Louis, Missouri
Name of Officer Title Address

UNION ELECTRIC COMPANY
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RIDERS

DATE OF ISSUE December 3, 2018 DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
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RIDER A
PURCHASED GAS ADJUSTMENT CLAUSE

APPLICABILITY

The Purchased Gas Adjustment (PGA) Clause applies to all sales and transportation services provided under all natural gas rate schedules and contracts,including sales to transportation customers. For purposes of this clause,the term “cost of gas” shall be as defined under Section I.B.

Any increase or decrease in any PGA factor, including the Actual Cost Adjustment (ACA) factor, resulting from the application of this Rider A, shall be applied prorata to customers' bills for service rendered on and after the effective date of the change. Bills which contain multiple PGA rate changes, including the ACA component of such rate changes, during a customer’s billing period shall be prorated between the old and new rates in proportion to the number of days in the customer’s billing period that such rates were in effect.

I. PURCHASED GAS COST ADJUSTMENT

A. Filing of the PGA

The Company shall be allowed to make up to four (4) PGA filings during each calendar year. One such filing will be effective in November of each year, but no more than one PGA filing shall become effective in any two consecutive calendar months unless specifically ordered by the Commission. Such PGA filings shall be made at least ten (10) business days prior to their effective dates.

All PGA filings shall be accompanied by detailed work-papers supporting the filing in an electronic format. Sufficient detail shall be provided so the level of hedging that is used to develop the gas supply commodity charge for the PGA factor can be determined.

B. Contents of PGA Filings

When proposing revisions to its filed PGA factors, the Company shall file PGA tariff sheets with the Commission for approval which consist of:

The Regular Purchased Gas Adjustment (RPGA) Factor - A ¢/Ccf factor to reflect the current estimate of the annualized cost of various natural gas services purchased by the Company, including but not limited to firm and interruptible gas supply, gathering services, firm and interruptible transportation service, storage services, gas price volatility mitigation instruments, including but not limited to, financial instruments, and any service which bundles or aggregates these various services. The RPGA factor for the Residential Service Rate will vary depending on customer usage.

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RIDER A
PURCHASED GAS ADJUSTMENT CLAUSE

The Actual Cost Adjustment (ACA) Factor - A ¢/Ccf factor to reflect the annual reconciliation of actual purchased gas and pipeline service costs with the actual recovery of such costs through the application of this Rider A. Revised ACA factors shall be filed with the PGA filing to be effective in November of each year.

In addition, in any PGA filing, the Company may include a rate adjustment, hereinafter referred to as the “PGA Filing Adjustment Factor (FAF), not to exceed five cents (5.0¢) per Ccf which is designed to refund to, or recover from customers any over or under recoveries of gas costs that have accumulated since the Company’s last ACA filing.

The Residential Service Rate PGA shall be calculated based on customer’s usage with the applicable PGA factors as noted in this Schedule.

For the purpose of the computations herein, the cost of gas recoverable through the RPGA and ACA shall include:

a) The cost of any liquid or gaseous hydrocarbons purchased for injection into the gas stream;
b) Gathering, transportation and storage costs related to such liquid or gaseous hydrocarbons;
c) Costs associated with mitigating price volatility in the Company’s gas supply portfolio, including but not limited to, financial instruments; and
d) All other costs associated with the purchase, transportation and/or storage of natural gas under a rate, tariff or contract subject to regulation by the Federal Energy Regulatory Commission (FERC) or successor agency including, but not limited to, costs billed as take-or-pay and transition charges.

As used in this Rider, the following definitions shall apply:

"filing month" - the month in which a RPGA or ACA is determined by the Company and filed with the Commission;

"base period" - the first twelve (12) of the thirteen (13) months immediately preceding the filing month;

"firm sales" - the sales associated with the Company's Residential, General Service, and Interruptible (Assurance Gas) rate classifications;

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RIDER A
PURCHASED GAS ADJUSTMENT CLAUSE

II. DETERMINATION OF REGULAR PURCHASED GAS ADJUSTMENT (RPGA)
The RPGA will be determined in accordance with the following:

A. Commodity-Related Charges
The commodity-related charges shall include but not be limited to producer gas supply commodity charges, pipeline transmission and gathering commodity charges, expected costs or cost reductions to be realized for the entire applicable period, storage withdrawals, gas purchases under fixed-price contracts, and the Company’s cost of gas price volatility mitigation instruments, including but not limited to, financial instruments, except for call options for which only cost reductions expected to be realized during the months covered by the Company’s PGA filing shall be reflected. A commodity-related per unit ¢/Ccf factor shall be determined by dividing commodity-related costs by total sales volumes during the base period.

B. Demand-Related (Capacity, Reservation, Space, Deliverablity) Charges
For the purpose of the computations herein "demand-related" shall mean gas costs relating to fixed pipeline transportation and storage charges, fixed gas supply charges, and other FERC-authorized fixed charges.

1. Purchased Gas
For each natural gas supply purchased during the base period multiply the number of units of demand purchased during the base period by their respective charge(s) in effect on the first day of the filing month and divide by firm sales volumes during the base period.

2. Supplemental Gas
For each supplemental (temporary and emergency) gas supply purchased during the base period multiply the number of units purchased each month of the base period by the charge(s) in effect on the first day of the filing month and divide by firm sales volumes during the base period; in the case of a supply initially accounted for as an inventory item, multiply the number of units taken from inventory each month of the base period by the most current inventory unit price for such supply and divide by firm sales volumes during the base period.

3. Purchased Seasonal/Peaking Storage
For each seasonal/peaking type storage service purchased during the base period multiply the units of demand purchased during the base period by their respective charge(s) in effect on the first day of the filing month and divide by firm sales volumes during the base period; if there is no purchase of a specific storage service for he filing month, the last charge(s) paid for such storage service purchased in the base period shall be used.

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4. Purchased Balancing Storage

For each balancing type storage service purchased during the base period multiply the units of demand purchased during the base period by their respective charge(s) in effect on the first day of the filing month and divide by total sales volumes during the base period; if there is no purchase of a specific storage service for the filing month, the last charge(s) paid for such storage service purchased in the base period shall be used.

5. Transportation Service

For each separate related transportation service purchased during the base period multiply the number of units of demand purchased during the base period by their respective charge(s) in effect on the first day of the filing month, less 1.25¢ per Ccf times the units of interruptible sales, and divide the resulting balance of demand costs by firm sales volumes during the base period; if there is no purchase of a specific transportation service for the filing month, the last charge(s) paid for such transportation service purchased during the base period shall be used.

C. Other Costs of Gas

The total amounts of any costs, different from those referred to above, associated with the supply, transportation and/or storage service of natural gas during the base period under a rate, tariff or contract subject to regulation by the FERC or successor agency, divided by total sales and/or transported volumes, as applicable, during the base period. These costs include, but are not limited to, costs billed as take-or-pay and transition charges.

D. Determination of Class RPGA Factors

The RPGA factor for the firm sales rate classifications of natural gas service shall be calculated by summing the factors determined in Sections II.A. through II.C. above.

The RPGA factor for the interruptible sales rate classification of natural gas service shall be calculated by summing the factors determined in Sections II.A., II.B.4., and II.C. above plus 1.25¢ per Ccf.

The RPGA factor for the transportation rate classification shall be as calculated in Section II.C. above.

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ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

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III. ACTUAL COST ADJUSTMENT (ACA) ACCOUNT:

An ACA account shall be maintained for the Company's service area to which natural gas is transported. Said account shall be credited by the amount of any gas costs recovered through the action of this Rider in excess of actual gas costs incurred by the Company, and debited by the amount of any such recovered gas costs which is less than actual gas costs incurred by the Company. Such reconciliation of gas costs incurred and recovered shall be for the twelve (12) month period ending with August of each year, as defined herein.

Such excess or deficiency in total gas cost recovery for each sales rate classification and transportation rate classification shall be determined by a monthly comparison of the actual cost of gas for each month, including the prior period's ACA balance to the gas cost revenues recovered for the corresponding revenue month.

1. Demand-related costs applicable to "Purchased Gas" supply service, "Purchased Seasonal/Peaking Storage" service, "Supplemental Gas" service and "Transportation" of peaking storage service shall be allocated to the firm sales rate classifications.
2. Demand-related costs applicable to pipeline "Transportation" service and "Purchased Balancing Storage" service shall be allocated to firm sales and interruptible sales rate classifications. The interruptible sales customers will be allocated a portion of such "Transportation" demand costs. The balance of demand costs will then be allocated to the firm sales rate classification.
3. Commodity-related costs applicable to "Purchased Gas" supply service, "Purchased Seasonal/Peaking Storage" service, "Purchased Balancing Storage" service and "Transportation" service shall be allocated to each sales rate classification based on the ratio of each such classes' respective actual sales to the sum of total sales for the related revenue month.
4. "Other Cost of Gas" incurred shall be allocated as applicable to each sales rate classification and transportation rate classification based on the ratio of each such classes' respective actual sales and transported volumes to the sum of such sales and transported volumes for the related revenue month.

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5. Any refunds which the Company receives in connection with natural gas services purchased, together with any interest included in such refunds, will be refunded to the Company's applicable customers unless otherwise ordered by the Commission. Such refunds shall be credited to the ACA account in the month received and shall be a part of the overall ACA interest calculation.

   The refund amount will be allocated to each firm sales, interruptible sales and transportation rate classification based upon the same allocation of such costs as calculated during the base period in Section II. herein.

6. The total gas cost recovered each month shall be equal to the product of the billed Ccf of each rate classification times the sum of the applicable RPGA and ACA factors. The RPGA factor will include, if applicable, the FAF factor.

7. For the ACA period ending with August of each year, the aggregate excess or deficiency in gas cost recovery as described above shall be accumulated to produce a cumulative balance of excess or deficiency of gas cost recovery by sales and transportation rate classifications. ACA factors shall be computed by dividing these cumulative balances by the estimated sales and transportation volumes during the subsequent twelve-month billing period of November - October, for each of the sales and transportation rate classifications. All actual ACA revenue recovered shall be debited or credited to the appropriate monthly balance of the ACA account.

8. For each month during the ACA period and for each month thereafter interest, at a simple rate equal to the prime bank lending rate (as published in the Wall Street Journal on the first business day of the following month), minus two (2) percentage points (but not less than zero) shall be credited to customers for any over-recovery of gas costs or credited to the Company for any under-recovery of gas costs. Interest shall be computed based upon the average of the accumulated beginning and ending monthly ACA account balances. The Company shall maintain detailed work-papers that provide the interest calculation on a monthly basis.

9. These ACA factors shall be rounded to the nearest 0.01¢/Ccf and applied to billings of each applicable sales and transportation rate classification, commencing in November of each year, and shall remain in effect until superseded by subsequent ACA factors calculated according to this provision.

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10. The Company concurrently with its annual ACA filing, shall:

(a) Provide all documentation necessary to reconcile the Company's actual gas costs with its billed revenue. Provide all documentation of all natural gas purchases (commodity, demand or reservation charges or other charges) to support that the claimed costs are properly attributed to the ACA period and that the pipelines, natural gas suppliers, and any other vendors have charged or invoiced the Company for the volumes nominated and received at the proper rates.

(b) Provide all documentation to support decisions made at the time of the Company's natural gas supply planning, capacity planning, purchasing practices, and operating decisions for the ACA period.

(c) Provide documentation of the financial impact on customers of the Company's decisions regarding its gas supply, transportation and storage contracts.

(d) Provide copies of all contracts in effect at any time during the ACA period. Include copies of all contracts related to the procurement of natural gas including but not limited to transportation, storage, and supply contracts and all schedules and exhibits and letter agreements related to gas procurement, gas costs and/or gas constraints.

(e) Provide all documentation to support the impact of discontinuing the transition mechanism.

(f) The documentation provided shall include fully functioning electronic spreadsheets. The term "document(s)" includes publication of any format, workpapers, letters, memoranda, notes, reports, analyses, computer analyses, test results, studies or data, recordings, transcriptions and printed, typed electronic or written materials of every kind in Company's possession, custody or control or within Company's knowledge.

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Name of Officer Title Address

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Name of Officer Title Address

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PGA Statement

The PGAs (in ¢/Ccf) to be applied to the Company's basic rate schedules on and after the effective date of this tariff for gas sold or delivered to customers in the Company's service area, are as follows:

	RPGA	ACA	TOTAL PGA
Residential	53.39¢/Ccf	(6.72)¢/Ccf	46.66¢/Ccf
General Service	53.39¢/Ccf	(6.72)¢/Ccf	46.66¢/Ccf
Interruptible Service	33.08¢/Ccf	(1.21)¢/Ccf	31.87¢/Ccf
Transportation Service	0.00¢/Ccf	0.00¢/Ccf	0.00¢/Ccf

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WEATHER & CONSERVATION ADJUSTMENT RIDER (WCAR)

APPLICABILITY

The Weather and Conservation Adjustment Rider (WCAR) is applicable to all Ccf of gas delivered to all customers served under all of the Company's service classifications. The Rider will be applied as a separate line item on a customer's bill.

FILING

The Company shall make a WCAR filing each calendar year to be effective for the November billing month at least thirty (30) days prior to the effective date.

WEATHER & CONSERVATION ADJUSTMENT RATE

$$WCR = TWA + CR$$

Where:

WCR = Weather and Conservation Rate to be calculated independently for each of the Company's service classes, including both the Conservation and Weather adjustment where applicable

TWA = Total Weather Adjustment rate equaling the sum of the effective AWNA and ARR from the Weather Adjustment Calculation

CR = Conservation Rate equaling the Net Conservation divided by the expected retail sales for each Service Classification

WEATHER ADJUSTMENT CALCULATION

$$TWA = AWNA + ARR$$

Where:

Annual WNA ("AWNA") = the sum of the Monthly WNA_i for the billing months in the applicable twelve month period, divided by the expected retail sales in the twelve month recovery period for each applicable service classification.

Annual Reconciliation Rate ("ARR") = Prior to the end of the twelve months of billing of each AWNA, the over- or under-billing of the numerator of the AWNA shall be calculated based on twelve months of actual sales, consisting of the last two months of the recovery period related to the prior AWNA and the first 10 months of the recovery period related to the currently effective AWNA. The amount of over- or under-billing shall be adjusted as ordered by the Commission. The resulting amount shall be divided by the expected retail sales in the twelve month recovery period for each applicable service classification.

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WEATHER & CONSERVATION ADJUSTMENT RIDER (WCAR)

The Monthly WNA Factor will be calculated for each billing month as follows:

$$\mathrm{WNA}_i = \sum_{j=1}^{21}\left(\left(CWA * C\beta\right) + \left(MWA * M\beta\right)\right) * C_{ij}$$

Where:

WNA_i = Weather Normalization Adjustment

i = the applicable billing month

j = billing cycle

CWA = the cold weather adjustment is the difference between actual HDD's and Normal HDD's that occur equal to or over 200 HD, calculated as ADD_{ij} – NDD_{ij}, except when either or both of these is below 200 HDD. Where only ADD_{ij} is less than 200, CWA shall be 200 – NDD_{ij}. Where only NDD_{ij} is less than 200, CWA shall be ADD_{ij} – 200. Where both ADD_{ij} and NDD_{ij} are less than 200, CWA is zero.

MWA = the mild weather adjustment is the difference between actual HDD's and Normal HDD's less the value of CWA

Cβ = applicable coefficient:

Residential >200 HDD	0.110762135
General Service >200 HDD	0.452443315

Mβ = applicable coefficient:

Residential <=200 HDD	0.068751507
General Service <=200 HDD	0.178076149

C_{ij} = the total number of customer charges charged in billing cycle j and billing month i

NDD_{ij} = the total normal heating degree days for the days in the applicable billing month and billing cycle based upon the weighted average daily normal weather associated with the Columbia, MO Airport weather station and the Cape Girardeau, MO Airport weather station as determined in the most recent gas general rate case.

ADD_{ij} = the total actual heating degree days for the days in the applicable billing month and billing cycle, based on a 85.5% weighting of heating degree days observed at the Columbia, MO Airport weather station and a 14.5% weighting of the heating degree days observed at the Cape Girardeau, MO Airport weather station for the Residential class. The weightings for the General Service class are 79.3% for the Columbia, MO Airport weather station and 20.7% for the Cape Girardeau, MO Airport weather station.

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WEATHER & CONSERVATION ADJUSTMENT RIDER (WCAR)

$$\text{Monthly WNA}_i = \text{WNA}_i * \text{Weighted Volumetric Rate ("WVR")}$$

Where:

WVR(Residential) = the WVR will be equal to the Residential Distribution Commodity Rate established at the conclusion of each gas general rate case. For Case No. GR-2019-0077, the amount is $0.3173.

WVR(General Service) = the WVR will be equal to the General Service Distribution Commodity Rate established at the conclusion of each gas general rate case. For Case No. GR-2019-0077, the amount is $0.3243.

1. The Company will make an annual rate filing with the Commission 30 days prior to the first effective day referenced in the AWNA table to adjust the WCAR. Each AWNA and ARR will remain in effect for twelve billing months.
2. There shall be a limit of $0.05 per Ccf on upward adjustments for the WNA, and no limit on downward adjustments. Any WNA adjustment amounts in excess of $0.05 per Ccf will be deferred for recovery from customers in the next WNA adjustment and applicable to part a. below.
   a. Each month, carrying costs, at a simple rate of interest equal to the prime bank lending 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 average beginning and ending monthly WNA balances. 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 WNA deferral period.

CONSERVATION ADJUSTMENT CALCULATION

DEFINITIONS

As used in this Rider WCA, the following definitions shall apply:

Deemed Savings Table
A list of Measures derived from the Company's Technical Resource Manual that characterizes associated gross energy and demand savings with Company-specific Measure parameters where available.

End Use Category
The unique summary category of end-use load shapes. The list of End Use Categories is included in this Rider.

Measure
An end-use measure, energy-efficiency measure, and energy-management measure as defined in 4 CSR 240-22.020(18), (20), and (21).

Programs
Programs listed in tariff sheet nos. 81.1 and 81.2.

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WEATHER & CONSERVATION ADJUSTMENT RIDER (WCAR)

CR DETERMINATION

The CR during each applicable recovery period is a dollar amount per Ccf rate for each applicable Service Classification calculated as follows:

$$CR = NC/PRS$$

Where:

NC = Net Conservation for the applicable recovery period as defined below,

$$NC = PC + CCR$$

PC = Projected Conservation is the Company's C projected by the Company to be incurred during the applicable recovery period. For the detailed method for calculating the C, reference the C Determination section below.

CCR = Cumulative Conservation Reconciliation is equal to the cumulative difference, if any, between the PC revenues billed during the previous recovery period resulting from the application of the NC component of the CR and the Company's C through the end of the previous recovery period (which will reflect projections through the end of the previous recovery period due to timing of adjustments). Such amounts shall include monthly interest charged at the Company's monthly short-term borrowing rate.

PRS = Projected Retail Sales in Ccf expected for the recovery period for each applicable Service Classification

C DETERMINATION

The C for each End Use Category shall be determined by the following formula:

$$C = [MS * NMR]$$

Where:

C = Conservation, in dollars, to be collected for a given month, for a given Service Classification.

MS = Monthly Savings, is the sum of all Programs' monthly savings, in Ccf, for a given month, for a given Service Classification. The MS for each End Use Category shall be determined by the following formula:

$$MS = \left(\left(\frac{MAS_{CM}}{2}\right) + CAS - RB\right) * LS * UCF_{CM}$$

Where:

MAS_{CM} = The sum of (MC x ME) for all Measures in a Program in the current calendar month.

MC = Measure Count. MC for a given month, for a given Service Classification, for each Measure, is the number of each Measure installed in the current calendar month.

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ME = Measure Energy. ME will be determined as follows, for each Measure:
- a. For Measures in the Statewide Deemed Savings Table, the ME is the annual total of normalized savings for each Measure at customer meter per Measure defined in the current Statewide Deemed Savings Table.
- b. For Measures not in the Statewide Deemed Savings Table, the ME will be the annual value attributable to the installations following the Statewide Technical Resource Manual.

CM = Current calendar month.

CAS = Cumulative sum of MAS of all prior calendar months for each End Use Category beginning with the effective date rates are set in case GR-2019-0077

RB = Rebasing Adjustment. The RB shall equal the CAS applicable as of the date used for billing determinants when base rates are adjusted in any general gas rate case or otherwise resulting in new retail gas rates. The RB is cumulative and therefore shall include each and every prior RB calculation.

LS = Load Shape. The LS is the monthly load shape percent (%) for each End-Use Category. (See below)

UCF = Unit Conversion Factor. The UCF is the conversion factor to convert the Measure Energy from therms to Ccf. The source for the UCF will be the Company's general accounting system.

NMR = Net Margin Revenue. NMR values for each applicable Service Classification are defined in the Margin Rates Table within this Rider

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WEATHER & CONSERVATION ADJUSTMENT RIDER (WCAR)

Margin Rates by Customer Class					
Month	Res $/Ccf	GS $/Ccf	Interrupt $/Ccf	Std Trans $/Ccf	LVT $/Ccf
January	0.317300	0.314552	0.228676	0.195079	0.147700
February	0.317300	0.315242	0.195353	0.190357	0.147700
March	0.317300	0.319994	0.205380	0.195301	0.147700
April	0.317300	0.319379	0.200280	0.190580	0.147951
May	0.317300	0.321755	0.195342	0.192629	0.148422
June	0.317300	0.317024	0.192881	0.175280	0.147700
July	0.317300	0.315998	0.193838	0.174418	0.147700
August	0.317300	0.316751	0.193342	0.175024	0.147700
September	0.317300	0.313833	0.192195	0.171408	0.147700
October	0.317300	0.316863	0.198594	0.178455	0.147700
November	0.317300	0.318937	0.197375	0.186872	0.147960
December	0.317300	0.318987	0.200412	0.196419	0.147700

End-Use Category Energy Load Shapes

	Residential			Business		
Month	Heating	Water Heating	Misc.	Heating	Water Heating	Misc.
January	21.7905%	10.3527%	8.4893%	21.0397%	10.8255%	8.5109%
February	18.2135%	9.0720%	7.7366%	17.7436%	9.1078%	7.7715%
March	13.4833%	9.5543%	8.4863%	13.1924%	8.5240%	8.6136%
April	5.8486%	8.4799%	8.2144%	5.9718%	7.2980%	7.9796%
May	1.7144%	8.3600%	8.4847%	2.6769%	7.9849%	8.5335%
June	0.0510%	7.7065%	8.2122%	0.4295%	7.2721%	8.1995%
July	0.0006%	6.7712%	8.4883%	0.2895%	7.4930%	8.4099%
August	0.0009%	6.3688%	8.4840%	0.3432%	7.5862%	8.4199%
September	0.8809%	6.9373%	8.2136%	0.9402%	7.5734%	8.2512%
October	5.4962%	7.9644%	8.4869%	5.5497%	8.2808%	8.5277%
November	11.5899%	8.4752%	8.2122%	11.5452%	8.6345%	8.2589%
December	20.9301%	9.9577%	8.4915%	20.2781%	9.4200%	8.5238%

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The WCR (in $/Ccf) to be applied to the Company's general rate schedules for the November 2019 through October 2020 billing months for gas sold or delivered to customers in the Company's service area.

	Weather Adjustment		Conservation Adjustment			
	WNA	ARR	PC	CCR	OA	WCR
Residential	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Service	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Interruptible	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Standard Transport	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LV Transport	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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ISSUED BY Michael Moehn, Name of Officer; President, Title; St. Louis, Missouri, Address

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V. Installation of Service Pipe

A. Specifications

Company will specify the connection point to its distribution main, the route of the service pipe and the point of delivery for the requested service, and will furnish, install and maintain such facilities. Where in Company's judgment an existing service pipe meets the requirements for the service being requested, Company will use the existing service.

B. Customer Payment

Service Lines less than 2": The service pipe charges indicated on Sheet No. 19, Miscellaneous Charges, will be billed to the customer upon Company's completion of the installation of the specified service facilities.

Service Lines 2" and greater: The projected 3 year revenues to be recieved from the customer(excluding PGA and billing tax revenues) will be applied against the total cost of the customer's service extension, net of any revenue applied under Section IV to offset main extension cost, if applicable. Any service extension cost that remains after applying net projected revenues will be billed to the customer upon Company's completion of the installation of the specified service facililites. Where feasible, service extension cost may be combined with the main extension cost for determining total customer contribution, if applicable, as described in section IV.

C. Customer Owned Service Pipe

When Company becomes aware of the need to do so, Company will repair or replace as necessary customer owned service pipe installed by customers prior to April 1, 1977 in former Missouri Utilities Company's Central and Mid-Mo Districts and prior to December 1, 1979 in former Missouri Utilities Company's Southeast and Ozark Districts, but will not assume ownership responsibility for such service facilities until their replacement by Company, which will be done based upon Company's sole judgment and discretion.

D. Company Liability

Company will not be liable for and customer will indemnify and save Company harmless from all claims for trespass, injury to persons, or damage to lawn, trees, shrubs, buildings, or other property that may be caused by the installation or replacement of service pipe and other necessary facilities to serve customer unless the injury to persons or damage to property has been caused by negligence of the Company or its employees.

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V. Installation of Service Pipe (Cont'd.)

E. Service Relocations

Company will, upon request, relocate customer's service pipe following the payment by customer of the service pipe charges indicated on Sheet No. 19, Miscellaneous Charges and any additional cost associated with disconnecting and removing the existing service pipe, as applicable.

For relocation of lines 2" and greater where an incremental increase in revenue is expected to accompany the service relocation, the provisions under this section V shall apply.

F. Excess Facilities Installations

Where customers request and Company agrees to provide facilities the Company does not normally provide during the course of business (excess facilities) customer shall be able to receive such non-standard facilities pursuant to this Section. Customers that request excess facilities shall pay a non-refundable contribution equal to 1.9 times the installation cost. This non-refundable contribution will cover the installation costs, ongoing operation and maintenance costs, replacement costs, and any removal costs associated with the facilities. A revenue test will not be used in the determination of the customers non-refundable contribution, nor will it be used as an offset to any amounts due as a non-refundable contribution.

Current Revenue	$73,999,319
Increase	$4,264,318
Target	$78,263,637
Special Contracts	$310,968
Target less Special Contracts	$77,952,669
Current less Special Contracts	$73,688,351
	1.0579

Residential		Present Rates		Proposed Rates	Proposed Revenues	
Customers	1,410,031	$15.00	$21,150,465	$17.00	$23,970,527	13.3%
0-30 Ccf	29,162,088	$0.7952	$23,189,692	$0.3173	$23,393,629	0.9%
Over 30 Ccf	44,574,775		$0			
	73,736,862	$0.3145	$44,340,157		$47,364,156	6.8%
General Service						
Customer Bills	154,094	$28.83	$4,442,530	$32.50	$5,008,055	12.7%
0-7,000 Ccf	34,252,458	$0.3089	$10,580,584	$0.3310	$11,337,564	7.2%
Over 7,000 Ccf	2,190,531	$0.2023	$443,144	$0.2192	$480,124	8.3%
	36,442,989		$15,466,259		$16,825,743	8.8%
Interruptible Service						
Customer Bills	82	$264.30	$21,673	$319.00	$26,158	20.7%
0-7,000 Ccf	294,191	$0.3089	$90,876	$0.3310	$97,377	7.2%
Over 7,000 Ccf	1,633,861	$0.1632	$266,646	$0.1913	$312,538	17.2%
Total	1,928,053					
Assurance Gas						
First 250 per day	0	$0.0111	$0	$0.0117	$0	
Over 250 per day	0	$0.0154	$0	$0.0163	$0	
			$379,194	Total	$436,074	15.0%

		Present Rates				
Standard Transportation						
Customer Bills	7,979	$28.72	$229,157	$32.50	$259,318	13.2%
Admin. Charge	3,456	$43.45	$150,179	$45.96	$158,855	5.8%
0-7,000 Ccf	14,562,677	$0.3089	$4,498,411	$0.3310	$4,820,246	7.2%
Over 7,000 Ccf	18,279,689	$0.1728	$3,158,730	$0.1398	$2,555,097	-19.1%
Total Ccf	32,842,366		$8,036,477		$7,793,516	
School Entities (volumes)						
0-7,000 Ccf	3,968,513	$0.0044	$17,461	$0.0047	$18,652	6.8%
Over 7,000 Ccf	353,953	$0.0044	$1,557	$0.0047	$1,664	6.8%
			$19,019		$20,316	
			$8,055,496	Total	$7,813,831	-3.0%
Large Volume Transportation						
Customer Bills	244	$1,451.53	$354,173	$1,651.00	$402,844	13.7%
Admin. Charge	252	$43.45	$10,949	$45.96	$11,582	5.8%
0-7,000 Ccf	1,732,185	$0.3089	$535,072	$0.3310	$573,353	7.2%
Over 7,000 Ccf	30,640,497	$0.1484	$4,547,050	$0.1477	$4,525,086	-0.5%
Total Ccf	32,372,682		$5,447,244		$5,512,865	1.2%
		Base Rate Revenue	$73,688,351		$77,952,669	5.79%
		Special Contracts	$310,968		$310,968	
			$73,999,319		$78,263,637	5.76%
					Over/Under	$0

AMEREN MISSOURI

TYPICAL MONTHLY BILL COMPARISON

	Present	Proposed
Cust Chg	15	17
0-30 Delivery	0.7952	0.3173
Over 30 Delivery	0	0.3173
0-30 PGA	-0.0122	0.4666
Over 30 PGA	0.7830	0.4666

RESIDENTIAL

Ccf	Present *	Proposed *	Change	% Change
10	$22.83	$24.84	$2.01	8.80%
20	$30.66	$32.68	$2.02	6.58%
30	$38.49	$40.52	$2.03	5.27%
40	$46.32	$48.36	$2.04	4.40%
50	$54.15	$56.20	$2.05	3.78%
60	$61.98	$64.03	$2.05	3.31%
70	$69.81	$71.87	$2.06	2.96%
80	$77.64	$79.71	$2.07	2.67%
90	$85.47	$87.55	$2.08	2.43%
100	$93.30	$95.39	$2.09	2.24%
110	$101.13	$103.23	$2.10	2.08%
120	$108.96	$111.07	$2.11	1.93%
130	$116.79	$118.91	$2.12	1.81%
140	$124.62	$126.75	$2.13	1.71%
150	$132.45	$134.59	$2.13	1.61%
160	$140.28	$142.42	$2.14	1.53%
170	$148.11	$150.26	$2.15	1.45%
180	$155.94	$158.10	$2.16	1.39%
190	$163.77	$165.94	$2.17	1.33%
200	$171.60	$173.78	$2.18	1.27%
210	$179.43	$181.62	$2.19	1.22%
220	$187.26	$189.46	$2.20	1.17%
230	$195.09	$197.30	$2.21	1.13%
240	$202.92	$205.14	$2.22	1.09%
250	$210.75	$212.98	$2.22	1.06%
260	$218.58	$220.81	$2.23	1.02%
270	$226.41	$228.65	$2.24	0.99%
280	$234.24	$236.49	$2.25	0.96%
290	$242.07	$244.33	$2.26	0.93%
300	$249.90	$252.17	$2.27	0.91%

* Includes an average monthly PGA of 46.66¢/Ccf and excludes taxes

AMEREN MISSOURI

TYPICAL MONTHLY BILL COMPARISON

	Present	Proposed
Cust Chg	28.83	32.5
Delivery	0.3089	0.3310
	0.2023	0.2192
PGA	0.4666	0.4666

GENERAL SERVICE

Ccf	Present *	Proposed *	Change	% Change
50	$67.61	$72.38	$4.77	7.06%
100	$106.38	$112.26	$5.88	5.53%
150	$145.16	$152.14	$6.98	4.81%
200	$183.93	$192.02	$8.09	4.40%
250	$222.71	$231.90	$9.19	4.13%
300	$261.48	$271.78	$10.30	3.94%
350	$300.26	$311.66	$11.41	3.80%
400	$339.03	$351.54	$12.51	3.69%
450	$377.81	$391.42	$13.62	3.60%
500	$416.58	$431.30	$14.72	3.53%
1,000	$804.33	$830.10	$25.77	3.20%
1,500	$1,192.08	$1,228.90	$36.82	3.09%
2,000	$1,579.83	$1,627.70	$47.87	3.03%
2,500	$1,967.58	$2,026.50	$58.92	2.99%
3,000	$2,355.33	$2,425.30	$69.97	2.97%
3,500	$2,743.08	$2,824.10	$81.02	2.95%
4,000	$3,130.83	$3,222.90	$92.07	2.94%
4,500	$3,518.58	$3,621.70	$103.12	2.93%
5,000	$3,906.33	$4,020.50	$114.17	2.92%
5,500	$4,294.08	$4,419.30	$125.22	2.92%
6,000	$4,681.83	$4,818.10	$136.27	2.91%
6,500	$5,069.58	$5,216.90	$147.32	2.91%
7,000	$5,457.33	$5,615.70	$158.37	2.90%
7,500	$5,791.78	$5,958.60	$166.82	2.88%
8,000	$6,126.23	$6,301.50	$175.27	2.86%
8,500	$6,460.68	$6,644.40	$183.72	2.84%
9,000	$6,795.13	$6,987.30	$192.17	2.83%
9,500	$7,129.58	$7,330.20	$200.62	2.81%
10,000	$7,464.03	$7,673.10	$209.07	2.80%
15,000	$10,808.53	$11,102.10	$293.57	2.72%
20,000	$14,153.03	$14,531.10	$378.07	2.67%
25,000	$17,497.53	$17,960.10	$462.57	2.64%

* Includes an average monthly PGA of 46.66¢/Ccf and excludes taxes

AMEREN MISSOURI

TYPICAL MONTHLY BILL COMPARISON

	Present	Proposed
Cust Chg	264.3	319
Delivery	0.3089	0.3310
	0.1632	0.1913
PGA	0.3187	0.3187

INTERRUPTIBLE SERVICE

Ccf	Present *	Proposed *	Change	% Change
1,000	$891.90	$968.70	$76.80	8.61%
2,000	$1,519.50	$1,618.40	$98.90	6.51%
3,000	$2,147.10	$2,268.10	$121.00	5.64%
4,000	$2,774.70	$2,917.80	$143.10	5.16%
5,000	$3,402.30	$3,567.50	$165.20	4.86%
6,000	$4,029.90	$4,217.20	$187.30	4.65%
7,000	$4,657.50	$4,866.90	$209.40	4.50%
8,000	$5,139.40	$5,376.90	$237.50	4.62%
9,000	$5,621.30	$5,886.90	$265.60	4.72%
10,000	$6,103.20	$6,396.90	$293.70	4.81%
12,500	$7,307.95	$7,671.90	$363.95	4.98%
15,000	$8,512.70	$8,946.90	$434.20	5.10%
17,500	$9,717.45	$10,221.90	$504.45	5.19%
20,000	$10,922.20	$11,496.90	$574.70	5.26%
22,500	$12,126.95	$12,771.90	$644.95	5.32%
25,000	$13,331.70	$14,046.90	$715.20	5.36%
27,500	$14,536.45	$15,321.90	$785.45	5.40%
30,000	$15,741.20	$16,596.90	$855.70	5.44%
35,000	$18,150.70	$19,146.90	$996.20	5.49%
40,000	$20,560.20	$21,696.90	$1,136.70	5.53%
45,000	$22,969.70	$24,246.90	$1,277.20	5.56%
50,000	$25,379.20	$26,796.90	$1,417.70	5.59%
55,000	$27,788.70	$29,346.90	$1,558.20	5.61%
60,000	$30,198.20	$31,896.90	$1,698.70	5.63%
65,000	$32,607.70	$34,446.90	$1,839.20	5.64%
70,000	$35,017.20	$36,996.90	$1,979.70	5.65%
75,000	$37,426.70	$39,546.90	$2,120.20	5.66%
80,000	$39,836.20	$42,096.90	$2,260.70	5.67%
85,000	$42,245.70	$44,646.90	$2,401.20	5.68%
90,000	$44,655.20	$47,196.90	$2,541.70	5.69%
95,000	$47,064.70	$49,746.90	$2,682.20	5.70%
100,000	$49,474.20	$52,296.90	$2,822.70	5.71%

* Includes an average monthly PGA of 31.87¢/Ccf and excludes taxes

AMEREN MISSOURI

TYPICAL MONTHLY BILL COMPARISON

	Present	Proposed
Cust Chg	28.72	32.5
EGM	43.45	45.96
Delivery	0.3089	0.3310
	0.1728	0.1938
Gas	0.40	0.40

STANDARD TRANSPORTATION SERVICE

Ccf	Present *	Proposed *	Change	% Change
500	$426.62	$443.96	$17.34	4.06%
1,000	$781.07	$809.46	$28.39	3.63%
1,500	$1,135.52	$1,174.96	$39.44	3.47%
2,000	$1,489.97	$1,540.46	$50.49	3.39%
2,500	$1,844.42	$1,905.96	$61.54	3.34%
3,000	$2,198.87	$2,271.46	$72.59	3.30%
3,500	$2,553.32	$2,636.96	$83.64	3.28%
4,000	$2,907.77	$3,002.46	$94.69	3.26%
4,500	$3,262.22	$3,367.96	$105.74	3.24%
5,000	$3,616.67	$3,733.46	$116.79	3.23%
5,500	$3,971.12	$4,098.96	$127.84	3.22%
6,000	$4,325.57	$4,464.46	$138.89	3.21%
6,500	$4,680.02	$4,829.96	$149.94	3.20%
7,000	$5,034.47	$5,195.46	$160.99	3.20%
7,500	$5,320.87	$5,492.36	$171.49	3.22%
8,000	$5,607.27	$5,789.26	$181.99	3.25%
8,500	$5,893.67	$6,086.16	$192.49	3.27%
9,000	$6,180.07	$6,383.06	$202.99	3.28%
9,500	$6,466.47	$6,679.96	$213.49	3.30%
10,000	$6,752.87	$6,976.86	$223.99	3.32%
10,500	$7,039.27	$7,273.76	$234.49	3.33%
11,000	$7,325.67	$7,570.66	$244.99	3.34%
11,500	$7,612.07	$7,867.56	$255.49	3.36%
12,000	$7,898.47	$8,164.46	$265.99	3.37%
12,500	$8,184.87	$8,461.36	$276.49	3.38%
13,000	$8,471.27	$8,758.26	$286.99	3.39%
13,500	$8,757.67	$9,055.16	$297.49	3.40%
14,000	$9,044.07	$9,352.06	$307.99	3.41%
14,500	$9,330.47	$9,648.96	$318.49	3.41%
15,000	$9,616.87	$9,945.86	$328.99	3.42%
15,500	$9,903.27	$10,242.76	$339.49	3.43%
16,000	$10,189.67	$10,539.66	$349.99	3.43%

* Includes an average monthly gas cost of 40.00¢/Ccf and excludes taxes

AMEREN MISSOURI

TYPICAL MONTHLY BILL COMPARISON

	Present	Proposed
Cust Chg	1451.53	1651
EGM	43.45	45.96
Delivery	0.3089	0.3310
	0.1484	0.1477
PGA	0.4	0.4

LARGE VOLUME TRANSPORTATION SERVICE

Ccf	Present *	Proposed *	Change	% Change
1,000	$2,203.88	$2,427.96	$224.08	10.17%
3,000	$3,621.68	$3,889.96	$268.28	7.41%
5,000	$5,039.48	$5,351.96	$312.48	6.20%
7,000	$6,457.28	$6,813.96	$356.68	5.52%
10,000	$8,102.48	$8,457.06	$354.58	4.38%
15,000	$10,844.48	$11,195.56	$351.08	3.24%
20,000	$13,586.48	$13,934.06	$347.58	2.56%
25,000	$16,328.48	$16,672.56	$344.08	2.11%
30,000	$19,070.48	$19,411.06	$340.58	1.79%
35,000	$21,812.48	$22,149.56	$337.08	1.55%
40,000	$24,554.48	$24,888.06	$333.58	1.36%
45,000	$27,296.48	$27,626.56	$330.08	1.21%
50,000	$30,038.48	$30,365.06	$326.58	1.09%
60,000	$35,522.48	$35,842.06	$319.58	0.90%
70,000	$41,006.48	$41,319.06	$312.58	0.76%
80,000	$46,490.48	$46,796.06	$305.58	0.66%
90,000	$51,974.48	$52,273.06	$298.58	0.57%
100,000	$57,458.48	$57,750.06	$291.58	0.51%
110,000	$62,942.48	$63,227.06	$284.58	0.45%
120,000	$68,426.48	$68,704.06	$277.58	0.41%
130,000	$73,910.48	$74,181.06	$270.58	0.37%
140,000	$79,394.48	$79,658.06	$263.58	0.33%
150,000	$84,878.48	$85,135.06	$256.58	0.30%
160,000	$90,362.48	$90,612.06	$249.58	0.28%
170,000	$95,846.48	$96,089.06	$242.58	0.25%
180,000	$101,330.48	$101,566.06	$235.58	0.23%
190,000	$106,814.48	$107,043.06	$228.58	0.21%
200,000	$112,298.48	$112,520.06	$221.58	0.20%
210,000	$117,782.48	$117,997.06	$214.58	0.18%
220,000	$123,266.48	$123,474.06	$207.58	0.17%
230,000	$128,750.48	$128,951.06	$200.58	0.16%
240,000	$134,234.48	$134,428.06	$193.58	0.14%

* Includes an average monthly gas cost of 40.00¢/Ccf and excludes taxes

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

RESIDENTIAL SERVICE RATE

INTERIM RATE REDUCTION

This bill line is temporarily being added to allow the Company to pass the benefits of service cost reductions on to customers from the federal Tax Cuts and Jobs Act of 2017 and will remain effective until new general rates are ordered by the Missouri Public Service Commission as part of the general rate proceeding Case No. GR-2019-0077.

The below flat rate will be applied as a credit to all metered Ccf of gas to all Residential Customer Bills.

Residential Interim Rate Reduction	$(0.0086)

DATE OF ISSUE December 3, 2018 _ DATE EFFECTIVE January 2, 2019

ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

GENERAL SERVICE RATE

INTERIM RATE REDUCTION

This bill line is temporarily being added to allow the Company to pass the benefits of service cost reductions on to customers from the federal Tax Cuts and Jobs Act of 2017 and will remain effective until new general rates are ordered by the Missouri Public Service Commission as part of the general rate proceeding Case No. GR-2019-0077.

The below flat rate will be applied as a credit to all metered Ccf of gas to all General Service Customer Bills.

General Service Interim Rate Reduction $(0.0061)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

INTERRUPTIBLE SERVICE RATE WITH AN ASSURANCE OPTION

INTERIM RATE REDUCTION

This bill line is temporarily being added to allow the Company to pass the benefits of service cost reductions on to customers from the federal Tax Cuts and Jobs Act of 2017 and will remain effective until new general rates are ordered by the Missouri Public Service Commission as part of the general rate proceeding Case No. GR-2019-0077.

The below flat rate will be applied as a credit to all metered Ccf of gas to all Interruptible Customer Bills.

Interruptible Sevice Interim Rate Reduction $(0.0028)

DATE OF ISSUE December 3, 2018 _ **DATE EFFECTIVE** January 2, 2019

ISSUED BY Michael Moehn (Name of Officer) President (Title) St. Louis, Missouri (Address)

UNION ELECTRIC COMPANY
GAS SERVICE

Applying to MISSOURI SERVICE AREA

NATURAL GAS TRANSPORTATION SERVICE

INTERIM RATE REDUCTION

This bill line is temporarily being added to allow the Company to pass the benefits of service cost reductions on to customers from the federal Tax Cuts and Jobs Act of 2017 and will remain effective until new general rates are ordered by the Missouri Public Service Commission as part of the general rate proceeding Case No. GR-2019-0077.

The below flat rate will be applied as a credit to all metered Ccf of gas to all Transportation Customer Bills.

Standard Transportation Interim Rate Reduction	$(0.0035)
Large Volume Transportation Interim Rate Reduction	$(0.0024)

AMEREN MISSOURI
GR-2019-0077

RESIDENTIAL RATE DEVELOPMENT

Revenue Requirement	$	47,364,156
PGA Rate	$	0.4666
PGA Revenue	$	34,405,620
Total Revenue Requirement	$	81,769,776
Customer Charge	$	17.00
Customer Charge Revenue	$	23,970,527
Non-Fuel Revenue in Volumetric Rate	$	23,393,629
Unrounded Delivery Rate	$	0.317258

		Delivery Rate	PGA Rate	Total Rate
Annual Bills	1,410,031			
Annual Ccf	73,736,862	0.3173	0.4666	$ 0.7839

Target	$	47,364,156
Actual	$	47,367,233
Deviation	$	3,078

Ameren Missouri Gas Operations
12 Months Ending June 2018

	Class Cost of Service Results			
	Current Rates	Equal ROR	Change	%
Residential	$ 44,340,157	$ 47,809,345	$ 3,469,188	7.8%
General Service	$ 15,466,259	$ 17,630,948	$ 2,164,689	14.0%
Interruptible	$ 379,194	$ 579,091	$ 199,897	52.7%
Standard Transportation	$ 8,055,496	$ 6,279,479	$ (1,776,017)	-22.0%
Large Volume Transportation	$ 5,447,244	$ 5,653,806	$ 206,562	3.8%
Subtotal	$ 73,688,350	$ 77,952,669	$ 4,264,319	5.8%
Special Contract	$ 310,968	$ 310,968	$ -	0.0%
Other Revenues	$ 1,826,787	$ 1,826,787	$ -	0.0%
Total	$ 75,826,105	$ 80,090,424	$ 4,264,319	5.6%

Ameren Missouri Gas Operations
12 Months Ending June 2018

	Class Cost of Service Results			
	Current Rates	Proposed	Change	%
Residential	$ 44,340,157	$ 47,364,156	$ 3,023,999	6.8%
General Service	$ 15,466,259	$ 16,825,743	$ 1,359,484	8.8%
Interruptible	$ 379,194	$ 436,074	$ 56,879	15.0%
Standard Transportation	$ 8,055,496	$ 7,813,831	$ (241,665)	-3.0%
Large Volume Transportation	$ 5,447,244	$ 5,512,865	$ 65,621	1.2%
Subtotal	$ 73,688,351	$ 77,952,669	$ 4,264,318	5.8%
Special Contract	$ 310,968	$ 310,968	$ -	0.0%
Other Revenues	$ 1,826,787	$ 1,826,787	$ -	0.0%
Total	$ 75,826,106	$ 80,090,424	$ 4,264,318	5.6%