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Issue(s):	*WNR, SRLE, Estimated Bills*
Witness:	*Robin Kliethermes*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Supplemental Testimony*
Case No.:	*ER-2019-0374*
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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF-RATE DESIGN DEPARTMENT

SUPPLEMENTAL TESTIMONY

OF

ROBIN KLIETHERMES

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2019-0374

Jefferson City, Missouri
May 2020

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Q. Please state your name and business address.

A. My name is Robin Kliethermes and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, Missouri, 65102.

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

A. I am employed by the Missouri Public Service Commission ("Commission") as the Rate & Tariff Examination Manager of the Tariff and Rate Design Department of the Industry Analysis Division.

Q. Are you the same Robin Kliethermes that supported sections in Staff's Class Cost of Service report (CCOS), filed rebuttal and surrebuttal testimony in this case?

A. Yes.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to respond to certain Commission questions regarding the Weather Normalization Rider ("WNR"), Sales Reconciliation to Levelized Expectations ("SRLE"), and estimated customer bills.

Q. Is the Global Stipulation and Agreement a reasonable resolution to all issues referenced below?

A. Yes.

WNR AND SRLE ADJUSTMENT MECHANISMS (QUESTIONS: 8,9,10,11,12,13,16)

Q. Statute 386.266(3) references "impact on utility revenue of increases or decreases in residential and commercial customer usage due to variations in either weather, conservation, or both." Based on this Statute, Empire initially proposed a WNR, which Staff had several issues with, including its structure (based on billed amount instead of rate based), application (individual customer instead of customer group), practicality (monthly vs annual) and potential legal implications, as outlined in Michael L. Stahlman's rebuttal testimony.

(a.) In response, Staff proposed the SRLE as an alternative to Empire's WNR. What are the pros and cons of the SRLE and the WNR?

(b.) What revenue impacts has Empire experience due to weather and/or conservation that would justify the need for the SRLE or WNR, and how did Staff determine those revenue impacts were due to weather or conservation?

A. In regards to part (a), the WNR, as proposed, is unworkable, and has no advantages over the SRLE.[1] Staff did consider a mechanism more similar to the Liberty/Spire WNAR, but did not further develop the mechanism for a number of reasons, including:

(1) The weather normalization process used for electric utilities is much more complex than the weather normalization process for natural gas. The usage for electricity includes both heating degree days and cooling degree days, whereas natural gas has not had a significant usage with cooling degree days. The electric weather normalization models also include variables for shoulder months, days of the week (e.g. weekends), and holidays that has not been included in natural gas regression models. For example, the months of March – May and September – November often include both heating and cooling degree days.[2]
(2) Experience with the WNARs of natural gas utilities has shown that the mechanisms are complex, data intensive and dependent upon billing cycle stability.
(3) The WNARs of natural gas utilities also rely on data from third parties. While this has the advantage of being tied to a neutral party, issues can arise if there are any changes to the availability or method of providing that data that are beyond the company's control. For example, a weather station may experience equipment failure.

[1] Rebuttal of Michael L. Stahlman, p. 2 ll. 1-2 "Finally, Empire's proposed WNR is unnecessarily complex and impossible to implement."
[2] Staff Direct Report, p. 42 l. 30 – p. 43 l. 3.

(4) Not only does the Company's WNR not attempt to explicitly adjust for conservation, its design would actually result in a customer who engaged in conservation efforts to repay the company for that customer's reductions in usage from year to year, as adjusted for the number of heating and cooling degree days.[3] With the SRLE the revenue impact of conservation is spread to all customers within the indicated classes. Under the WNR, a customer who reduces consumption would be rebilled for that reduction in consumption, for at least the first 12 months after the reduction occurs.[4]

(5) The WNR and WNAR concepts are incompatible with MEEIA. The existing throughput disincentive ("TD") approach will not work with either the WNAR or WNR.

(6) The SRLE is able to include conservation impacts, which in turn facilitates the elimination of the Throughput Disincentive mechanism for the subject classes in the event the Commission authorizes a MEEIA program.[5] The accuracy of the MEEIA TD design is contingent on the accuracy of the underlying data and assumptions, which are then aggregated for class level Residential impact, and remaining total company impact. At a minimum, the following information or assumptions are necessary for a properly designed TD:

- An estimation of the timing of when each measure was actually used or installed. For example, were 12 lightbulbs simultaneously installed on the date of purchase?
- The impact of each energy efficiency measure in an average or series of typical installations. For example, it is fairly easy to determine the level of kWh savings per hour of operation of Lightbulb A versus Lightbulb B. It is less easy to determine a representative average kWh savings of Air Handler A versus Air Handler B. The HVAC professional may know with relative certainty that B is 20% more efficient than A, but the TD analyst must know what number to take 20% off of.
- It is not easy to determine the number of hours a particular customer operates a particular device, or the circumstances associated with its operation that could lead to changes in its usage. Even if we know lightbulb A consumes 100 kWh less than lightbulb B if operated for a month of 720 consecutive hours, we do not know how many hours the lightbulbs under the program will be on, or when they are installed, or what type of lightbulb it is replacing, if any. Another example, an old dryer was being limped along and functioned relatively poorly, but upon purchase of the new dryer, the customer begins washing towels and sheets more frequently.
- The rate impact of applicable changes in usage as it relates to non-flat rate designs may be skewed. Even within a class, the avoided sale of a kWh for customer A may come at a different price than the avoided sale of a kWh for customer B. To accomplish TD calculations in a timely manner and with consistency, these rates are locked down – which may lead to absurd results or obvious but incurable inaccuracies.

[3] Rebuttal of Michael L. Stahlman, p. 4, ll. 1-5.
[4] As discussed on Page 5, Sarah L. K. Lange Surrebuttal.
[5] Page 12, Staff CCOS Report.

- The outputs of the above 4 assumptions must then be summed up over all energy efficiency measures installed within the time period of the MEEIA Cycle which magnifies the errors and inaccuracies of each assumption. If the assumptions were right, then the result would be that the dollar value of the change to the utilities' revenues would allow the utilities to be in the same position – revenue wise –as though MEEIA savings never happened. This end point of the TD is the starting point of the SRLE.
- A laborious and contentious process of rate case annualizations and rebasing is necessary during the compliance phase of each rate case to back out these impacts. The SRLE avoids all of the above. At the time the TD was recommended in other utilities' MEEIA Cycle 2 cases, the SRLE was not legislatively authorized. If the SRLE had been legislatively authorized, it is reasonable that Staff would have recommended the SRLE instead of the TD.

(7) The SRLE has fewer rate changes and filings than Empire's proposals.[6] Frequent rate changes dampen the price signals the Commission has been interested in establishing.[7] The SRLE would smooth the signals sent by changes in FAC rates.[8]

(8) The SRLE is easily compatible with Time-of-Use rate structures. The Empire proposals are not compatible.[9]

(9) The SRLE mechanism assumes a broad interpretation of "conservation"; one that includes the adoption of energy efficiency measures whether funded by ratepayers or not, as well as any other factor inducing changes to the cost of energy sold. This broad interpretation of "conservation" includes customer decisions and actions that reduce the consumption of energy, and also addresses the impact of what might be referred to as "negative conservation," or customer decisions and actions that increase the consumption of energy. This is consistent with the design and interpretation of "conservation" relied upon in the recently-approved, non-appealed Ameren Missouri VIRN for its gas utility business.

(10) The SRLE removes the disincentive Empire faces to promote energy efficiency, even if Empire does not pursue, or is not approved for, real-time program cost recovery or compensation for avoided capital investment opportunities that are available under MEEIA.

In regards to part (b), the value of Staff's weather normalization adjustment in this case is a reduction in revenue of approximately $4,550,884. Staff's normal weather and weather normalization procedures are provided on Pages 40 through 45 of Staff's Cost of Service Report. Staff did not attempt to calculate revenue impacts related to conservation. It is near to

[6] Page 12, Staff's CCOS Report.
[7] Page 13, Staff's CCOS Report.
[8] Page 13, Staff's CCOS Report and Page 7 of Sarah L. K. Lange Surrebuttal Testimony.
[9] Page 7 of Sarah L. K. Lange Surrebuttal Testimony.

impossible to provide a revenue impact that includes all changes in kWh that are considered conservation that does not include arbitrary assumptions regarding customer behavior. [10]

Q. In the Ameren gas rate case (GR-2019-0077) Staff tested the Volumetric Indifference Reconciliation to Normal (VIRN) using various rate structures and considering various factors. The results indicated that certain types of rate structure work better than others. What are the differences between the VIRN and the SRLE? How does the SRLE work with the residential rate structure (proposed by Staff in it CCOS), which with both inclining and declining designs for the summer and winter seasons respectively?

A. The rate structure comparisons in Ameren's gas case were very time intensive to prepare, and relied on reflecting a debt-equity relationship in rate design that was not included in the final settled VIRN and class rate design. The SRLE was premised on the settled–upon VIRN. The VIRN and the SRLE "work" identically, the tariff attached as an appendix to the Global Stipulation filed in this case includes only minimal edits, generally to address the use of an FAC and tax rider in lieu of a PGA/ACA. Given the very small revenue requirement changes contemplated in the CCOS, the residential rate design changes described in the CCOS would be minimal from the existing rates and Global Stipulation design. The SRLE would work equally with the existing rates, or with a rate increase or decrease implementing the rate design as recommended in Staff's CCOS Report for a mild summer incline and a slight reduction to the winter decline.

Q. Empire's proposed tariff sheet No. 25, states that the WNR "adjusts each customer's bill for the difference in electric usage caused by the variation between actual Heating Degree Days (HDDs) and normal HDDs during the Heating billing period, and the

[10] Changes in usage due to energy efficiency programs are deemed for purposes of MEEIA and are evaluated through after the fact EM&V.

variation between actual Cooling Degree Days (CDDs) and normal CDDs during the Cooling billing period." Hence the WNR was designed to adjust for weather. Why did Staff recommend the SRLE, which adjusts for both weather and conservation?

A. As addressed in the entirety of the rebuttal testimony of Michael L. Stahlman, Empire's proposed WNR tariff is flawed and unworkable. Whereas, the SRLE is workable, and it is beneficial to adjust for weather and conservation when possible because (1) weather and conservation are interrelated, and (2) the SRLE is an easier-to-apply mechanism, and (3) the SRLE will take the place of the TD portion of a MEEIA Cycle proposal, or remove any disincentive for Empire to promote energy efficiency outside of MEEIA.

Q. Robin Kliethermes in her rebuttal testimony (pages 2 through 4) present information on Empire's estimated bills and the impact of estimated data on the WNR. Subsequently in her surrebuttal, she stated that one of the latent benefits of the SRLE is that it "would effectively true-up the over or under estimation of normalized residential billing determinants used to set rates in this case."

(a.) Has the SRLE been tested with Empire's data over the Empire's test period and Staff's test period?

(b.) Has staff performed any analysis on the quantity of Empire's estimated bills that are over and under estimated; the degree of the over or under estimation and the net impact of the total over and under estimations?

A. In regards to part (a), Staff did not specifically calculate the impact the SRLE would have had, had it been in place during Staff's test period or Empire's test period. However, the billing determinants used to establish the SRLE are Staff's billing determinants for Staff's test period (which is a similar period as Empire's test period), so any test would not have

resulted in a meaningful representation of the outcome of the SRLE. In regards to part (b), Staff does not have the data to perform such an analysis and understands that the data does not exist to perform such an analysis.[11]

Q. Robin Kliethermes' surrebuttal states "Given the expected uptick in residential energy consumption due to the response to COVID-19, the SRLE would have the latent benefit of returning, to residential customers, a portion of the anticipated increase in residential revenues associated with more time being spent at home."

(a.) Please explain how changes in usage consumption due to COVID-19 restrictions would fall under variations in weather and/or conservation.

(b.) If the SRLE was implemented during a period similar to COVID-19, what would be the impact on commercial customers?

A. In regards to part (a), the SRLE mechanism assumes a broad interpretation of "conservation"; one that includes the adoption of energy efficiency measures whether funded by ratepayers or not, as well as any other factor inducing changes to the cost of energy sold. This broad interpretation of "conservation" includes customer decisions and actions that reduce the consumption of energy, and also addresses the impact of what might be referred to as "negative conservation," or customer decisions and actions that increase the consumption of energy. In regards to part (b), the SRLE will capture the net changes in usage in the CB/SH customer class, as adjusted for the following aspects detailed in the agreed-upon tariff:

> _- the actual usage for Commercial Service and Small Heating Service customers shall be adjusted to include usage associated with customers who switch the rate schedule on which that customer takes service after the submittal date of the tariff referenced in part 6 of this section; and
>
> - the normalized annual energy usage for Commercial Service and Small Heating Service customers shall be revised to address rate switching in tariff revisions submitted by the Company no later than January 1, 2021.

[11] Company response to Staff Data Request No. 0246.

Staff is reviewing the impact of these adjustments and at this time cannot confirm their expected interaction with any COVID-related changes in usage.

Q. What mechanisms and provisions have been incorporated in the implementation of SRLE to deal with changes in usage that are not caused by weather or conservation?

A. The exclusion of block 1a for the Residential class which is usage below 400 kWh and block 1 for CB and SH, and the adjustments for customer growth and rate switching are mechanisms to deal with other causes of changes in usage. As previously explained, the SRLE mechanism assumes a broad interpretation of "conservation"; one that includes the adoption of energy efficiency measures whether funded by ratepayers or not, as well as any other factor inducing changes to the cost of energy sold. This is consistent with the design and interpretation of conservation relied upon in the recently-approved Ameren Missouri VIRN for its gas utility business.

Q. Under MEEIA, a utility is already made whole for conservation resulting from implemented programs, the throughput disincentive. Why would it be preferable to do it through a SRLE verses the traditional MEEIA process?

A. As described more fully in response to Question 8, the MEEIA throughput disincentive ("TD") recovery mechanism is imprecise at best. The TD was a better replacement for the net shared benefits mechanism used in previous MEEIA Cycles for other electric utilities, and the SRLE captures actual changes in usage better than the TD. The SRLE removes the incentive the TD creates to push programs with high projected savings and low actual savings, which may not be adequately captured and addressed through after the fact evaluation, measurement and verification or EM&V. The MEEIA TD-like mechanism continues to evolve as parties gain experience with MEEIA, and as subsequent statutory changes allow other mechanisms to be considered.

WNR AND SRLE ADJUSTMENT MECHANISMS (QUESTIONS: 3 & 7)

Q. Referring to Stipulation, Appendix C-Filing (1) mentions monthly Actual Blocked Usage (ABU) yet the rate formula uses annual Adjustment Period (AP). What if any importance is monthly ABU? If monthly ABU is to be used, provide the Normalized energy usage to be used in the calculation by month.

A. Although this question was directed to Empire, Staff would like to also explain the use of Actual Block Usage ("ABU") since Staff drafted the tariff and it is based on the Ameren Missouri Gas VIRN. ABU is defined in the tariff as "that usage which occurred during the Adjustment Period (AP) for the rate schedules' adjustable KWh usage range." The ABU is an annual amount. There is a reference to a month's ABU in the definition of AP since the Company will likely need to project usage for the last billing month in each annual adjustment period due to not having the complete information available in time for that annual filing. Any difference between the projected ABU and actual ABU will be included in the subsequent filing's reconciliation adjustment. The normalized energy usage to be used per month is not applicable since the month's usage that will be a projection for calculation and reconciliation in subsequent filings is usage that actually occurred during the Adjustment Period.

Q. Referring to Stipulation, Appendix C, Rate Case Information-Does every customer's usage exceed the kWhs included in the base charge? If not how is that considered in this rider? Does this information need to be provided by month? How were the normalized annual energy usage amounts determined? Are these negotiated amounts? If so, please explain how these amounts were determined. Provide the normalized annual energy usage amounts generated by each party in the case and cite to the testimony where this information is found.

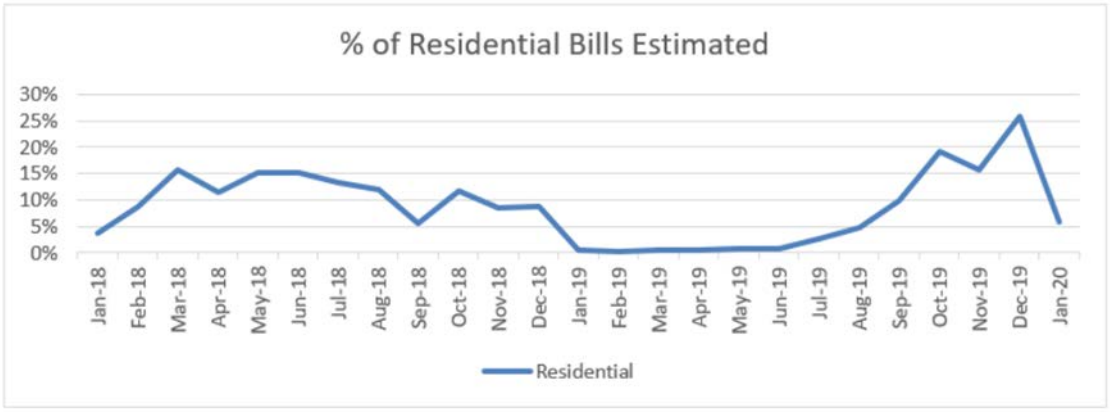
A. Although this question was directed at Empire, Staff provides a response to a couple questions as further guidance to the Commission. A residential customer's usage that is 400 kWh or below is excluded from the SRLE. The normalized annual energy amounts used in the Stipulation are derived from Staff's billing determinants at the time of true-up and as provided in Staffs Statement of Positions. The SRLE is an annual adjustment and the difference between actual and rate case usage is not calculated monthly.

ESTIMATED BILLS (QUESTION: 5 & 6)

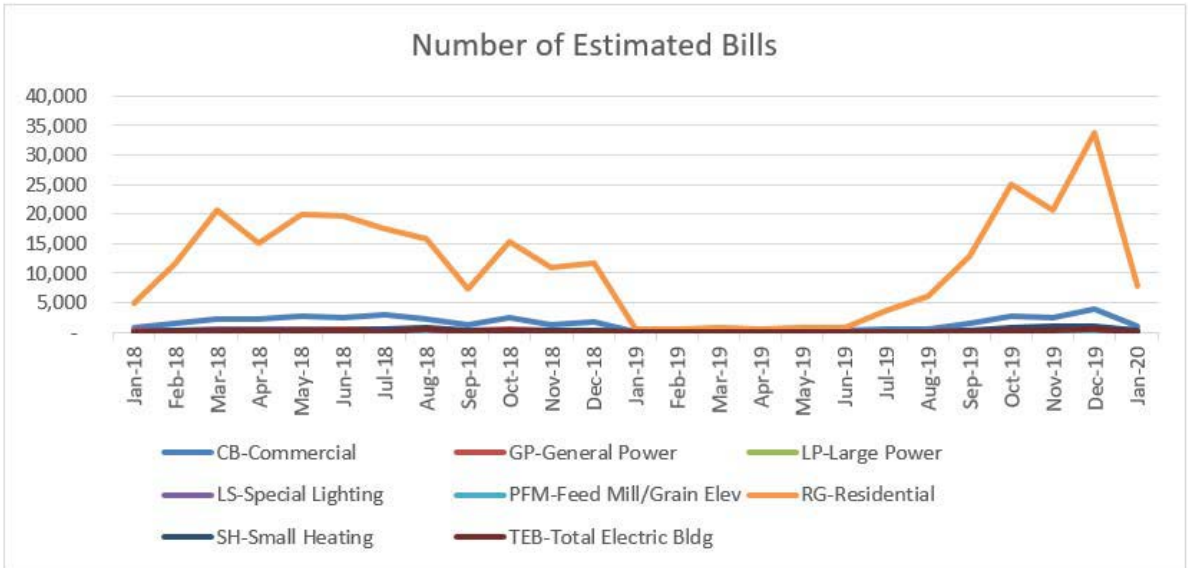
Q. In Robin Kliethermes' rebuttal she states that a large percentage of estimated usage causes errors in both staff and the company's weather normalization model. What do you consider a "large percentage" of estimated bills? What was Empire's average and peak estimated billing percentage during the test year period?

A. For the months of January through June of 2019, the Company reported less than 1% of customer bills were estimated. Generally, in any given month there should be few if any bills being estimated. Since Empire can achieve estimating less than 1% of customer bill's for an extended period of time, any percentage greater than 1% is of concern. Please see the chart below and the supplemental testimony of Staff witness Gary Bangert regarding the percentage of estimated bills for the Residential class within the test period.[12]

[12] As discussed on Page 2, Rebuttal Testimony of Robin Kliethermes.



For purposes of weather normalization and normalized revenues, Staff used a test period of August 2018 through July 2019. Since Staff's test period did not include the beginning of 2018 and the end of 2019, Staff's test period contains a lower percent of estimated bills than the Company's direct-filed test period, as shown in the graph above.[13] The Residential class had the highest number of estimated bills. Below is a table showing the number of estimated bills that occurred from January 2018 through January 2020.[14]



[13] As discussed on Page 3, Rebuttal Testimony of Robin Kliethermes.
[14] As discussed on Page 2, Rebuttal Testimony of Robin Kliethermes.

Q. How can Empire's level of estimated bills impact the confidence in customer usage levels?

A. If a customer's bill is estimated then it is not the actual usage of the customer. A customer's bill can be estimated up to three consecutive months.[15] Therefore, it may be three months before the accuracy of the estimation is known and the accuracy of the individual monthly estimation may never be known if a customer has an estimated bill for two or more consecutive months. Further customer usage levels also impact the results of weather normalization. As discussed in my rebuttal testimony filed on March 9, 2020, Staff's and the Company's weather normalization models are dependent upon the usage that is used to find the relationship between weather and electric usage. If that usage is not an accurate reflection of the level of usage a customer actually used, then the relationship calculated by each model is flawed. Although Staff's test period includes less estimated bills than the Company's test period, Staff's weather model uses two years of usage and weather data and is impacted by the large number of estimated bills in 2018. The Company's weather model is also impacted by the same number of estimated bills in 2018.

Q. Does this conclude your testimony?

A. Yes.

[15] Tariff Sheet No. 24.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of The Empire District Electric Company's Request for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in its Missouri Service Area	)))))	Case No. ER-2019-0374

AFFIDAVIT OF ROBIN KLIETHERMES

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW ROBIN KLIETHERMES and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Supplemental Testimony*; and that the same is true and correct according to her best knowledge and belief, under penalty of perjury.

Further the Affiant sayeth not.

/s/ *Robin Kliethermes*
Robin Kliethermes