

Exhibit No. 253

Exhibit No.:
Issue(s): School Aggregation
Witness: Keenan B. Patterson, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: GR-2021-0241
Date Testimony Prepared: October 15, 2021

MISSOURI PUBLIC SERVICE COMMISSION
FINANCIAL AND BUSINESS ANALYSIS DIVISION
PROCUREMENT ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

KEENAN B. PATTERSON, PE

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

CASE NO. GR-2021-0241

Jefferson City, Missouri
October 2021

1
2
3
4
5
6
7
8
9
10
11
12
13
14

TABLE OF CONTENTS
OF
REBUTTAL TESTIMONY OF
KEENAN B. PATTERSON, PE
UNION ELECTRIC COMPANY
d/b/a Ameren Missouri
CASE NO. GR-2021-0241

INTRODUCTION1
EXECUTIVE SUMMARY1
MSBA PILOT DESCRIPTION.....3
BALANCING AND USE OF CASH-OUTS6
MSBA PILOT EXTENSION10
SCHOOL AGGREGATION PROGRAM REVISIONS.....11

1 **REBUTTAL TESTIMONY**

2 **OF**

3 **KEENAN B. PATTERSON, PE**

4 **UNION ELECTRIC COMPANY**
5 **d/b/a Ameren Missouri**

6 **CASE NO. GR-2021-0241**

7 **INTRODUCTION**

8 Q. Please state your name and business address.

9 A. Keenan B. Patterson, 200 Madison Street, P.O. Box 360, Jefferson City, MO,
10 65102.

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

12 A. I work for the Missouri Public Service Commission (Commission) as a Senior
13 Professional Engineer.

14 Q. Please describe your background and relevant work experience.

15 A. A summary of my background and education is attached as Schedule KBP-r1.

16 Q. What is the purpose of your testimony in this case?

17 A. My purpose is to address proposals related to the school aggregation program as
18 described in the direct testimonies of Timothy L. Eggers, a witness for Ameren Missouri, and
19 Louie R. Ervin II, a witness for the Missouri School Boards' Association (MSBA).

20 **EXECUTIVE SUMMARY**

21 Q. Please summarize the Ameren Missouri and MSBA proposals.

22 A. There are two proposed actions in the Ameren Missouri and MSBA direct
23 testimony related to the school aggregation program. First, both Ameren Missouri and

Rebuttal Testimony of
Keenan B. Patterson, PE

1 MSBA request an extension of the current MSBA pilot, with the extension to terminate on
2 May 1, 2022.

3 Second, MSBA proposes that it, Ameren Missouri and Staff work out permanent
4 revisions to the school aggregation program to be completed by September 1, 2022. Though
5 MSBA is not especially clear as to how this process should work, its description suggests
6 Ameren Missouri would then file a tariff case shortly after this current rate case with the
7 intention of implementing a revised school aggregation program beginning with the winter of
8 2022. MSBA also suggests changes to the current program, which I will address in more detail
9 later in this testimony.

10 Q. Please summarize Staff's recommendation related to Ameren Missouri's and
11 MSBA's request to extend the MSBA pilot.

12 A. Staff has no objection to the extension of the pilot to May 1, 2022, and
13 recommends that the Commission approve the extension.

14 Q. Please summarize Staff's recommendation regarding MSBA's request to initiate
15 a special process aimed at significant changes to the school aggregation program.

16 A. So far, the results of the MSBA pilot do not seem to justify revisions to
17 Ameren Missouri's school aggregation program. The specific changes suggested by MSBA are
18 not likely to produce more accountability in the program or improve oversight over the
19 marketers that operate school aggregation pools. The changes merely shift responsibilities that
20 properly belong to schools as transportation customers onto Ameren Missouri. In addition,
21 MSBA can propose changes to the school aggregation program in the next rate case, using
22 information from the MSBA pilot, if it desires to do so. Staff recommends that the Commission
23 deny MSBA's request for a special process to revise the school aggregation program before the
24 winter of 2022-2023.

1 MSBA PILOT DESCRIPTION

2 Q. Please describe the MSBA pilot.

3 A. In the last Ameren Missouri natural gas rate case, Case No. GR-2019-0077, the
4 Commission approved a stipulation and agreement (Stipulation) that created the MSBA pilot.
5 The pilot modified the cash-out balancing provisions for MSBA school aggregation pools,
6 while leaving the provision applying to other school aggregation pools unchanged.

7 Q. What special provisions are applicable to MSBA school pools under the pilot?

8 A. The pilot set up a separate method for determining cash-outs for the balancing
9 of MSBA school pools that differs from the previously established method that continues to
10 apply to other schools pools.

11 First, MSBA school pools under the pilot are not cashed-out for monthly
12 imbalances of 5 percent or less. Non-MSBA school pools, along with all other transportation
13 customers, are cashed out for *all* imbalances.

14 Second, cash-outs of imbalances greater than five percent that occur when the
15 MSBA schools deliver less gas than they use are priced at 110 percent of a monthly average of
16 the Platt's Gas Daily index. Non-MSBA school under-deliveries are cashed out at the greater
17 of 110 percent of the Purchased Gas Adjustment (PGA) factor or the Platt's Gas Daily-based
18 index plus a transportation charge. Over-deliveries for both MSBA and non-MSBA school
19 pools are cashed out on the same basis.

20 Q. What else is required under the pilot?

21 A. In addition to the special cash-out provisions for MSBA, the stipulation required
22 Ameren Missouri to collect and provide to Staff and MSBA various information on school
23 aggregation pool usage and imbalances, cash-outs and costs associated with operating the pilot
24 and the school aggregation program.

Rebuttal Testimony of
Keenan B. Patterson, PE

1 Q. What is the purpose of the pilot?

2 A. From Staff's perspective, the purpose of the pilot was to gather information that
3 may help resolve issues specifically identified by MSBA in Case No. GR-2019-0077. In that
4 case, MSBA's witness asserted that "Ameren's cash-out penalties and application of its
5 Purchase Gas Adjustment (hereinafter 'PGA') charge to the STP should be rejected because
6 these charges are unjust and in conflict with Section 393.310, RSMo."¹ Staff's intention for the
7 pilot was to discover if there was justification for altering the cash-out provision or other
8 charges related to the school aggregation program.

9 Q. What information has the pilot produced to date?

10 A. As required by the stipulation, Ameren Missouri submitted a report on the
11 pilot in April 2021. This report provided information on school pool usage and imbalances,
12 cash-outs and costs of the pilot. Ameren Missouri submitted additional information on the pilot
13 in response to Staff data requests in this case.

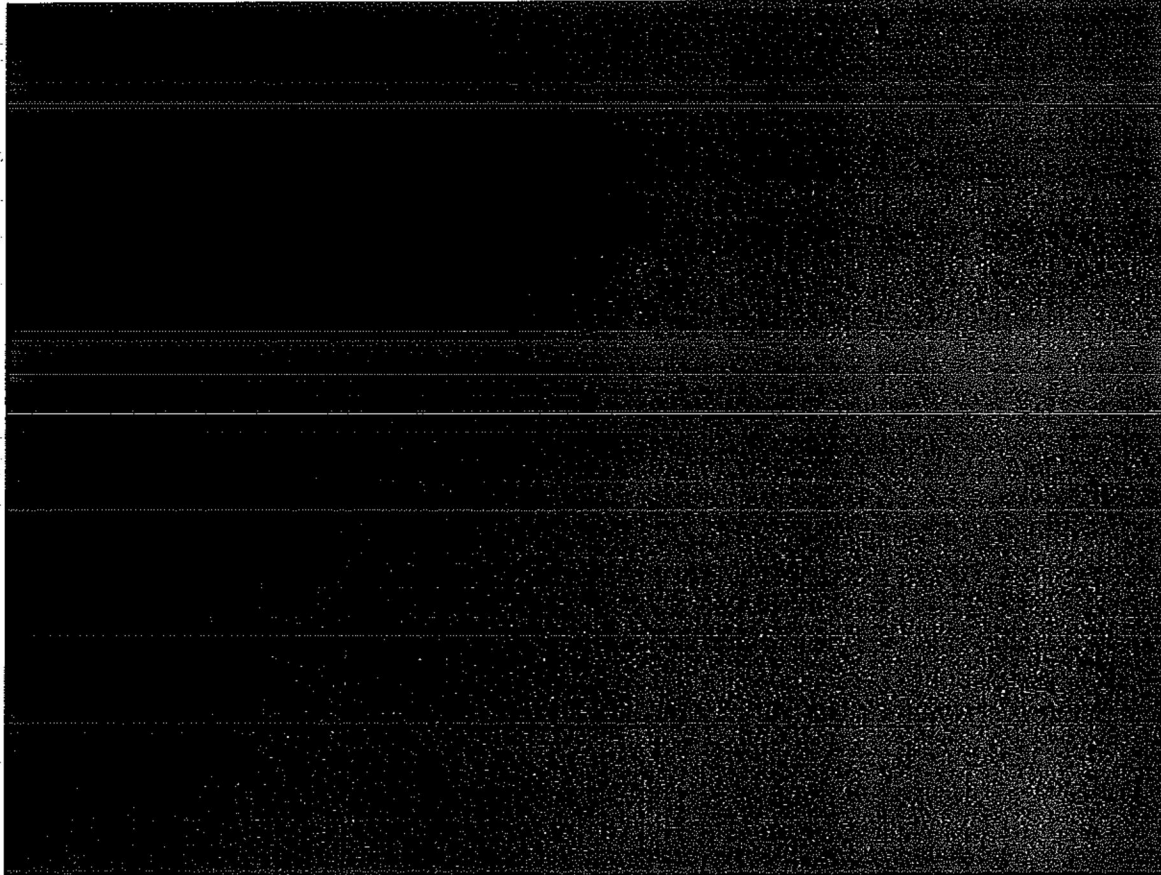
14 Q. What information has the pilot provided related to usage and imbalances of
15 school aggregation pools?

16 A. In response to a Staff data request, Ameren Missouri provided information on
17 daily school aggregation pool usage and imbalances for the period of October 2019 through
18 December 2020. Staff aggregated this data to compare the balancing performance of MSBA
19 and non-MSBA pools. For each day and for each pool, Staff calculated the imbalance as a
20 percent of the pool's nomination. This produced imbalances for 3,920 pool-days. Staff then
21 prepared a distribution of imbalances for both MSBA and non-MSBA pools. This distribution
22 is shown on the following graph:

¹ Case No. GR-2019-0077, Exhibit No. 400 - Direct Testimony of Louie R. Ervin, Sr., pg. 5, ll. 1-3.

1

**



2

3

**

4

Q. What does this graph indicate about the balancing performance of the MSBA and non-MSBA pools?

5

6

A. This graph indicates that the MSBA pools and non-MSBA pools have very similar balancing performance. The varying degrees of imbalance occur at about the same frequency for both.

7

8

9

Q. What information has the pilot provided related to cash-outs and the cost of the school aggregation program and the MSBA pilot?

10

11

A. Mr. Eggers addressed the pilot costs and balancing cash-outs in his direct testimony. According to Mr. Eggers, Ameren Missouri spent \$29,000 setting up the pilot and anticipates it would cost \$3,000 a year to continue it.

12

13

1 Mr. Eggers also indicated that, over the course of the two winters the pilot has
2 operated, MSBA pools collectively have paid ** [REDACTED] ** less in balancing cash-outs than
3 they would have paid under the non-pilot cash-outs. That amounts to ** [REDACTED] ** per school
4 per month.

5 Q. Has the information provided so far indicated that changes to the cash-outs for
6 school aggregation pools are needed?

7 A. No. The pilot has resulted in a very small discount for MSBA school pools, but
8 to date it has produced no data that suggests that the pilot cash-outs is somehow more just and
9 reasonable than the non-pilot cash-outs. The results of the pilot does not suggest, as MSBA
10 claimed in Case No. GR-2019-0077, that non-pilot cash-outs are unjust. Nor does it indicate
11 how the non-pilot cash-out balancing provisions of the tariff are in conflict with Section
12 393.310, RSMo, especially when the law states that school aggregation program "tariffs will
13 not have any negative financial impact on the gas corporation, its customers or local taxing
14 authorities."² The purpose of balancing, and particularly cash-out balancing, is to protect gas
15 corporations and their customers from negative financial and operational impacts of
16 transportation customer imbalances, and to provide an economic incentive for transportation
17 customers to closely match gas deliveries to usage.

18 **BALANCING AND USE OF CASH-OUTS**

19 Q. You mentioned that the MSBA pilot was initiated in response to
20 MSBA assertions related to balancing provisions for the school aggregation program. What
21 is balancing?

² Section 393.310.5, RSMo. A copy of Section 393.310, RSMo, appears as Appendix I to the direct testimony of Louie R. Ervin II in this case.

Rebuttal Testimony of
Keenan B. Patterson, PE

1 A. Balancing is a process by which a transportation service provider (TSP) and a
2 shipper of gas reconcile the difference between the amount of gas the TSP receives and delivers
3 for a shipper. When a gas corporation delivers gas for a transportation customer, it is serving
4 the role of TSP and the customer is serving the role of shipper.

5 The Ameren Missouri tariff allows transportation customers to aggregate their
6 gas receipts and deliveries, forming a pool (or customer group) that is managed by a
7 pool operator (or group manager). For the purposes of balancing, this pool is treated as a
8 single transportation customer. All eligible school entities that participate in the school
9 transportation program are in pools. Several school aggregation pools operate in the
10 Ameren Missouri service area.

11 Q. What is a school pool operator?

12 A. A school pool operator is a gas supplier or marketer that contracts with a
13 non-for-profit school association to aggregate and supply natural gas for a pool of schools.
14 These companies provide the same type of service to industrial and commercial customers.
15 The pool operator runs the day-to-day operations of the pool. They estimate how much gas
16 will be needed in aggregate by the schools in the pool. They arrange for gas supply out of
17 their own resources or from gas they purchase. They also arrange the shipping of gas on
18 interstate pipelines. Ameren Missouri releases some of its interstate pipeline capacity to the
19 pool operators to assure they have some firm capacity available to deliver gas to Ameren
20 Missouri city gates.

21 Q. What is a city gate?

22 A. A city gate is a location where a pipeline delivers gas to a local distribution
23 company. City gates are equipped with metering and pressure regulating equipment to measure

Rebuttal Testimony of
Keenan B. Patterson, PE

1 gas flow and adjust the pressure to an appropriate level for the distribution system. City gates
2 are sometimes equipped with devices to measure gas quality.

3 Q. Why is balancing important?

4 A. Natural gas pipelines and local distribution companies must assure that the
5 amount of gas they receive into their transmission or distribution systems closely matches the
6 amount of gas they deliver to customers. Transportation customer imbalances may impact a
7 gas corporation's management of gas supply, which can affect gas costs for its sales customers.
8 Transportation customer imbalances could cause a gas corporation such as Ameren Missouri
9 to buy additional gas on the daily market, inject or withdraw gas from storage, or adjust
10 monthly supply purchases. All of these actions could cause the sales customers' gas costs to be
11 higher than they otherwise would have been if the costs are not recovered from the
12 transportation customers.

13 Q. Does balancing serve other purposes?

14 A. Yes. Balancing allows TSPs and shippers to be "made whole" by allowing
15 parties to make up for shortfalls or recover excesses in the difference between the gas delivered
16 and received either with gas or by cash-outs in lieu of gas.

17 Q. Who is responsible for balancing?

18 A. The transportation customers and their pool operators are responsible for
19 balancing. This is made explicit in the Ameren Missouri Natural Gas Transportation
20 Service tariff: "The 'transportation customer' shall be responsible for the purchase and
21 transportation of its gas needs to the Company's city gate which serves the customer."³ It further

³ Union Electric Company Gas Service: Missouri Service Area, P.S.C. Mo. No. 2 (Ameren Missouri tariff), 10th
Revised Sheet No. 10.

Rebuttal Testimony of
Keenan B. Patterson, PE

1 states that “[d]aily transportation gas receipts and deliveries shall be maintained in balance by
2 the customer to the maximum extent practicable.”⁴

3 Q. Are balancing provisions common in pipeline and gas corporation tariffs?

4 A. Yes. All of the interstate gas pipelines that transport gas to Ameren Missouri
5 have balancing provisions in their tariffs. These pipelines are MoGas Pipeline, Natural Gas
6 Pipeline of America (NGPL), Panhandle Eastern Pipe Line (PEPL), Southern Star Central Gas
7 Pipeline (SSC) and Texas Eastern Pipeline (TETCO). In addition, all Missouri gas corporations
8 have balancing provisions in their tariffs for transportation customers.

9 Q. How is balancing accomplished under the various tariffs?

10 A. TSPs have balancing provisions that fit the needs of their systems. Cash-out
11 balancing is a method used by four of the five interstate pipelines that serve Ameren Missouri.
12 The exception, MoGas Pipeline, imposes ongoing penalties for uncorrected imbalances.
13 Because pipelines have resources that utilities do not have, some offer other methods of
14 balancing in addition to cash-outs such as imbalance trading. For NGPL, PEPL, SSC and
15 TETCO, imbalances that are not resolved by other means in a timely fashion are cashed out.
16 All Missouri gas corporations use cash-out balancing for non-school transportation customers.
17 With the exception of Spire Missouri, all also cash-out imbalances for school aggregation pools.
18 Spire Missouri requires school aggregation pools to balance by adjusting nominations in the
19 month following the month in which the imbalance occurs.

20 Q. What is the advantage of cash-out balancing?

21 A. Cash-out balancing is administratively simple in comparison to other methods
22 of balancing, especially for a local distribution company. Pipelines have capacity and storage
23 resources that allow them to more easily accommodate imbalance correction through additional

⁴ Ameren Missouri tariff, 4th Revised Sheet No. 13.1.

1 receipts or deliveries in a period following the imbalance. However, resources on this scale are
2 not typically available to a local distribution company. Similarly, pipelines operate systems for
3 capacity release and similar resource exchange that accommodates similar systems for
4 imbalance trading, which are not normally part of local distribution system operation.

5 In addition, cash-outs provide an economic incentive to balance. Pool operators
6 pay or receive a price tied to the amount of the imbalance that recognizes that utility resources
7 are used to deal with imbalances as they occur. In his direct testimony, Mr. Ervin acknowledges
8 that cash-out balancing “encourages suppliers to manage the imbalances.”⁵

9 Another advantage of cash-out balancing is that it is a timely economic signal to
10 pool operators about the occurrence and degree of imbalances. Each month, the operator
11 receives a bill or payment indicating its balancing performance.

12 As I previously mentioned, balancing assures that parties are “made whole.”
13 Cash-out balancing accomplishes this simply on a monthly basis. This prevents imbalances
14 from being carried indefinitely.

15 **MSBA PILOT EXTENSION**

16 Q. Why is Staff agreeing that an extension of the pilot is appropriate?

17 A. Though the pilot program to date has not addressed the central question that
18 instigated its creation, both Ameren Missouri and MSBA indicate that they would like to run
19 the program through May 1, 2022, in hope of gathering data over the course of a more typical
20 winter. They point to the COVID-19 pandemic and the winter storm of February 2021 as events
21 that made the winters of 2019-2020 and 2020-2021 atypical. Though Staff is skeptical of the
22 value of data that may come from an extension of the pilot, it acknowledges that these events

⁵ Ervin direct, pg. 8, ll. 14-15.

1 may have affected the patterns of gas use at schools, especially due to the widespread school
2 closings related to the pandemic in 2019 and 2020 as well as the many school closings in
3 February 2021.

4 Q. What does Staff recommend related to the extension of the MSBA pilot?

5 A. Staff recommends that the Commission extend the MSBA pilot to terminate on
6 May 1, 2022, as was requested by Ameren Missouri and MSBA.

7 **SCHOOL AGGREGATION PROGRAM REVISIONS**

8 Q. Please describe the school aggregation tariff revision process that MSBA
9 recommends should follow the termination of the MSBA pilot.

10 A. MSBA proposes that it, Ameren Missouri and Staff should develop new tariff
11 language related to school aggregation pool balancing to be completed by September 1, 2022.
12 This would be followed by a filing to implement a new tariff targeted to start before
13 winter 2022-2023.

14 Q. Does Staff concur with the MSBA request for a school aggregation tariff
15 revision process?

16 A. No. While Staff is willing to discuss tariff issues with MSBA or Ameren
17 Missouri, it recommends that the Commission reject MSBA's request to require a tariff filing.
18 First, it is unlikely that Ameren Missouri could prepare a tariff filing in time for a new tariff to
19 be effective by the target date. Second, it is unlikely that MSBA, Ameren Missouri and Staff
20 would agree on what, if any, revisions should be made, especially in light of the significant
21 changes to the program that MSBA proposed.

22 Q. What changes to the school transportation program balancing does
23 MSBA propose?

Rebuttal Testimony of
Keenan B. Patterson, PE

1 A. MSBA proposes to eliminate cash outs and move to a system of balancing with
2 nomination adjustments in subsequent months. Mr. Ervin references the Spire Missouri tariff
3 as a model.

4 Q. Is the Spire Missouri school pool balancing model appropriate for Ameren
5 Missouri or other gas corporations?

6 A. No. Each utility's tariff related to balancing is shaped by its history, resources
7 and demands, which differ from other utilities.

8 Q. How do Spire Missouri and Ameren Missouri differ in ways that are reflected in
9 the way they balance school aggregation pools?

10 A. Spire Missouri operates very large distribution systems with high-pressure lines
11 that provide it with more flexibility in managing line pack than smaller utilities. In addition,
12 Spire Missouri's St. Louis-area distribution system is supported by on-system storage and,
13 within withdrawal and injection capabilities of that storage, it can be used to manage
14 imbalances. It has some capacity to respond to imbalances without resorting to gas supply
15 adjustments or storage on interstate pipelines. A portion of the cost of these facilities is allocated
16 to transportation customers. In contrast, Ameren Missouri does not have on-system storage or
17 high-pressure pipes. If it experiences a significant imbalance, it must make unplanned injections
18 or withdrawals on interstate pipeline storage or purchase gas to deal with the situation, and incur
19 associated costs.

20 Q. Why did Staff agree to the provisions in the Spire Missouri West school
21 aggregation tariff in the last Spire Missouri rate case?

22 A. Staff does not hold the Spire Missouri tariff for school aggregation as a model
23 that others should use, but the adoption of the former Spire Missouri East service area
24 (Spire Missouri East) school aggregation approach to both service areas was an improvement

Rebuttal Testimony of
Keenan B. Patterson, PE

1 to Spire Missouri Missouri's ability to oversee and manage school aggregation in the West
2 service area (Spire Missouri West). The previous Spire Missouri West tariff only required
3 school pool operators to "make reasonable good faith efforts to avoid imbalances."⁶ Though
4 the tariff had provisions to remove school aggregation pools that acted egregiously, it is
5 questionable that these provisions could have been enforced in practice. Incredibly, MSBA
6 requested that this "good faith" model that practically eliminated balancing accountability be
7 brought to Ameren Missouri in its last rate case, Case No. GR-2019-0077. Staff strongly
8 opposed such a move. The stipulated MSBA pilot resolved the issue in that case. While Staff
9 agreed to the changes in the Spire Missouri West school aggregation tariff, it was not endorsing
10 the Spire Missouri tariff as a model for other utilities. As I stated in my testimony in the Spire
11 Missouri rate case, Case No. GR-2021-0108:

12 In the long term, cash-out balancing of school aggregation pools...[is]
13 desirable. The current Spire [Missouri] East tariff and proposed tariff
14 place significant responsibility for supply planning on the company,
15 which properly belongs to the pool operators. In addition, the incentives
16 for balancing in the proposal are weak. Schools and their pool operators
17 have an incentive to look out for their own interests by shifting gas
18 purchase from days when price (*sic*) are high to those when prices are
19 low, regardless of projected demand for the current day, and they are
20 only restrained by Spire's [Spire Missouri's] involvement in supply
21 planning for school aggregation pools. Spire [Missouri] is able to recover
22 its gas costs through the PGA, and can therefore cover its gas costs
23 related to balancing school aggregation pools even if it does not fully
24 recover them from the schools or pool operators. Under a cash-out
25 system, pool operators would be responsible for supply planning for their
26 schools and they would have financial incentives to closely balance
27 delivered gas and use.⁷

28 Q. If cash-out balancing is superior, why did Staff agree to a different system of
29 balancing school aggregation pools in Spire Missouri West?

⁶ Schedule of Rates and Charges Applying to the Spire Missouri West Service Areas, P.S.C Mo. No. 8, Original Sheet No. 15.3.

⁷ Case No. GR-2021-0108, Exhibit No. 120 - Rebuttal Testimony of Keenan B. Patterson, pg. 16, l. 19-pg. 17, l. 8.

Rebuttal Testimony of
Keenan B. Patterson, PE

1 A. The metering technology and meter reading schedules in Spire Missouri West
2 do not accommodate the meters of all schools within a pool to be read on the same day, which
3 is needed to properly determine imbalances and calculate cash-outs.

4 Q. Is this problem of the timing of school meter reading in Spire Missouri West
5 likely to persist?

6 A. No. Staff anticipates that as a new generation of meter reading is implemented
7 that incorporate modern communication technology, Spire Missouri will be able to read meters
8 with greater flexibility and frequency.

9 Q. Did this situation in Spire Missouri West open opportunities for “gaming” of the
10 system as described by Mr. Ervin in his direct testimony, and does the adoption of the Spire
11 Missouri East tariff for both service areas “prevent” it as he suggests?

12 A. The Spire Missouri West provisions left a large opening for “gaming.” Openings
13 remain under the new tariff, as they have long existed in Spire Missouri East.

14 Q. What is Mr. Ervin referring to as “gaming?”

15 A. The “gaming” Mr. Ervin refers to is arbitrage. Arbitrage is the buying and selling
16 of assets in different markets to take advantage of price differences. School pool operators have
17 two markets in which to buy and sell gas: the open market for gas and the utility. If the market
18 price for gas is higher than what the pool operator would pay the utility, the operator can deliver
19 less than its customers use, essentially buying gas from the utility at a lower than market rate.
20 Similarly, when gas prices are lower than they would expect to pay the utility, the operator can
21 deliver more gas than its customers use, essentially selling gas to the utility at greater than
22 market rates.

23 Q. How is this permitted under the Spire Missouri school transportation tariff?

Rebuttal Testimony of
Keenan B. Patterson, PE

1 A. School aggregation pool imbalances under the Spire Missouri tariff are
2 aggregated for the calendar month into an imbalance account. Nominations are adjusted for the
3 following month with intent of correcting the imbalance. Pool operators can choose to over- or
4 under-deliver gas based on whether the market price is high or low as described above. If they
5 anticipate high prices, they can simply under-deliver until prices drop, then they can make up
6 the imbalances with less expensive gas. Because there is no requirement for the imbalance
7 account to be closed or zeroed-out, a pool can carry an imbalance indefinitely.

8 Mr. Ervin suggests that Spire Missouri's involvement in supply planning for
9 school aggregation pools would prevent pool operators "gaming" in this manner. This is not the
10 case. Spire Missouri provides the school pools with temperature-based equations that serve as
11 a guide for gas supply planning as well as temperature forecasts during the winter. However,
12 school pools may vary from this guidance without penalty. The amount nominated for each
13 school pool is controlled by the pool operator, and though Spire Missouri may request that the
14 school pool operators take some action, its tariff does not authorize Spire Missouri to make or
15 adjust nominations for the school pools, nor could it practically do so.

16 Q. Is there opportunity for arbitrage in the Ameren Missouri tariff?

17 A. Yes. First, the marketers may be able to buy or sell gas at prices different from
18 those that are specified in the Ameren Missouri tariff.

19 Second, Ameren Missouri balances school aggregation pools on a monthly
20 basis. This means school pools can play day-to-day price variations against each other,
21 under-delivering if prices are high early in the month on the possibility that they can make it up
22 with over-deliveries at lower prices later in the month. Pool operators may also play market
23 prices against the settlement price for imbalances. The settlement price for imbalance in the
24 Ameren Missouri tariff is the greater of the monthly *average* of the daily midpoint price, which

1 will be lower than the highest daily gas price, or the monthly average PGA, which may be lower
2 than the highest daily gas prices.

3 Q. Why is the cash-out balancing in the Ameren Missouri tariff a better protection
4 against “gaming” than the Spire Missouri school aggregation balancing provisions?

5 A. The primary difference is that the Ameren Missouri imbalance is closed out by
6 the cash-outs every month. Imbalances are not carried forward as they are in Spire Missouri
7 because the Ameren Missouri cash-outs reset the balance to zero with each new month. The
8 school pools pay or are credited for the imbalance at the PGA rate or an index-based rate that
9 reflects average gas prices during the month. (The MSBA pilot pools are not subject to the
10 PGA rate, but only the index-based monthly average price.) In addition, the cash-outs provide
11 the timely economic signal about the occurrence and degree of imbalances. Multipliers applied
12 to imbalances of greater than 5 percent provide an incentive to closely balance gas deliveries
13 and usage. (The MSBA pilot schools are not subject to the multipliers for imbalances of greater
14 than 5 percent.)

15 Q. Were other steps to increase transportation customer accountability
16 implemented in the Spire Missouri case?

17 A. Yes. Prior to Case No. GR-2021-0108, non-school transportation customers in
18 Spire Missouri West were balanced using cash-outs, but that was not the case in Spire Missouri
19 East. Spire Missouri East previously allowed non-school transportation customers to correct
20 imbalances by adjusting nominations in subsequent months. As I previously noted, cash-out
21 balancing is desirable for all transportation customers. Implementation of newer meter-reading
22 technology will eventually make that practicable.

23 Q. Does the MSBA proposal hold school aggregation pools or their operators
24 responsible for balancing?

Rebuttal Testimony of
Keenan B. Patterson, PE

1 A. The MSBA proposal would reduce school pool operator accountability in
2 comparison to Ameren Missouri's current cash-out balancing. MSBA's proposal allows school
3 pool imbalances to be carried indefinitely. It would also remove routine economic incentives to
4 balance and economic signals about the occurrence and degree of imbalances. After
5 acknowledging the benefit of cash-outs for encouraging balancing in his direct testimony,
6 Mr. Ervin complained that the cash-outs are "passed through [to the schools] from the suppliers
7 [pool operators]."⁸ The schools are ultimately the transportation customers, and when they use
8 more gas than they have delivered to the system, they are buying the difference from
9 Ameren Missouri. Whether and how charges are passed from the pool operators to the schools
10 is a matter of the contract between those parties, not the tariff. If the schools want Ameren
11 Missouri to manage their gas supply, assure firm supply and possibly even hedge against
12 unexpected costs, they have the option to become sales customers.

13 Q. Does MSBA have options to pursue tariff changes if the Commission denies its
14 request for a special process leading to a tariff filing?

15 A. Yes. MSBA routinely intervenes in gas rate cases, and it can intervene in
16 Ameren Missouri's next gas rate case. All information collected by Ameren Missouri related to
17 the MSBA pilot as required by the Stipulation will be available to MSBA.

18 Q. What does Staff recommend related to MSBA's request for a process leading to
19 tariff revisions for the school aggregation program?

20 A. Staff recommends that the Commission deny MSBA's request for a process for
21 tariff revisions for the school aggregation. It is unlikely that Ameren Missouri could complete
22 a tariff filing in time for new tariffs before the winter of 2022-2023 as requested by MSBA. In
23 addition, the MSBA pilot to date has not shown that tariff revisions are needed. While Staff is

⁸ Ervin direct, pg. 8, l. 16.

Rebuttal Testimony of
Keenan B. Patterson, PE

1 willing to discuss tariff issues with Ameren Missouri and MSBA, it is unlikely the parties would
2 agree that tariff changes are needed or on the terms of such changes, particularly on those terms
3 suggested by MSBA in this case.

4 Q. Does this conclude your rebuttal testimony?

5 A. Yes.

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 Adjust Its)
Revenues for Natural Gas Service) Case No. GR-2021-0241

AFFIDAVIT OF KEENAN B. PATTERSON, PE

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW KEENAN B. PATTERSON, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Keenan B. Patterson, PE*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

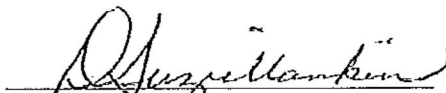


KEENAN B. PATTERSON, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 13th day of October 2021.

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



Notary Public

KEENAN B. PATTERSON, PE

Education and Employment Background and Credentials

I am currently employed as a Senior Professional Engineer for the Missouri Public Service Commission (Commission) in the Procurement Analysis Department. I have been employed by the Commission in this position since February 2018. From August 2015 through January 2018, I was employed by the Commission as a Utility Engineering Specialist/Utility Regulatory Engineer in the Engineering Analysis Department.

I am a graduate of the University of Missouri where I earned the degrees of Bachelor of Science in Agricultural Engineering and Master of Public Administration. In addition, I am licensed as a Professional Engineer in Missouri.

Prior to working for the Commission, I was employed as an Environmental, Health and Safety Coordinator by Pittsburgh Corning Corporation from 2013 to 2015. I have also been employed as an Associate at The Cadmus Group from 2010 to 2013, an Environmental Engineer at GREDELL Engineering Resources in 2009, the owner of Infra Consulting LC from 2006 to 2013, and various environmental engineering positions at the Missouri Department of Natural Resources from 1994 to 2006. In addition, I am a member of the National Association of Regulatory Utility Commissioner's Staff Subcommittee on Gas.

Other cases I have been assigned to or that I have participated in are listed below.

Case Number	Company
GO-2022-0022	Spire Missouri
GR-2021-0128	Spire Missouri (Spire West)
GR-2021-0127	Spire Missouri (Spire East)
GR-2021-0108	Spire Missouri
GR-2021-0101	Liberty Utilities (Midstates Natural Gas)
GA-2020-0251	Summit Natural Gas of Missouri
GR-2020-0126	Liberty Utilities (Midstates Natural Gas)
GR-2020-0122	Spire Missouri (Spire West)
GR-2020-0121	Spire Missouri (Spire East)
GR-2019-0123	Liberty Utilities (Midstates Natural Gas)
GR-2019-0120	Spire Missouri (Spire West)
GR-2019-0119	Spire Missouri (Spire East)
GR-2019-0077	Ameren Missouri
WR-2018-0170 SR-2018-0171	Liberty Utilities (Missouri Water)
GR-2018-0122	Empire District Gas Company
GR-2018-0106	Summit Natural Gas Company of Missouri

Keenan B. Patterson, PE
continued Case Summary

GR-2018-0077	Liberty Utilities (Midstates Natural Gas)
WM-2018-0023	Liberty Utilities
WM-2018-0018	Seges Partners Mobile Home Park
SM-2018-0017	
WR-2018-0001	Environmental Utilities
GR-2017-0341	Ameren Missouri
GR-2017-0300	Spire Missouri (Spire West)
GR-2017-0299	Spire Missouri (Spire East)
WR-2017-0285	Missouri-American Water Company
WR-2017-0259	Indian Hills Utility Operating Company
GR-2017-0216	Missouri Gas Energy
GR-2017-0215	Laclede Gas Company
SM-2017-0187	Lake Region Water & Sewer Company
WM-2017-0186	
WA-2017-0181	Missouri-American Water Company
SM-2017-0150	Elm Hills Utility Operating Company, Inc.
WF-2017-0143	Terre Du Lac Utilities Corporation
WR-2017-0110	
WR-2017-0139	Stockton Hills Water Company
SR-2017-0130	Gladlo Water and Sewer Company, Inc.
SR-2017-0099	Seges Partners Mobile Home Park, L.L.C.
WO-2017-0236	Ridge Creek Water Company LLC
WC-2017-0200	
WR-2017-0042	
ER-2016-0285	Kansas City Power & Light Company
SR-2016-0202	Raccoon Creek Utility Operating Company, Inc.
EM-2016-0213	Empire District Electric Company
ER-2016-0179	Ameren Missouri
WM-2016-0169	Woodland Manor Water Company, LLC
SR-2016-0110	Roy-L Utilities, Inc.
WR-2016-0109	
WM-2016-0094	Foxfire Utilities Company
WA-2016-0054	Missouri-American Water Company
WA-2016-0031	Peaceful Valley Service Company
SA-2016-0030	
WR-2015-0301	Missouri-American Water Company