

## MEMORANDUM

**TO:** Missouri Public Service Commission Official Case File Case No.  
GE-2023-0354

**FROM:** Brodrick Niemeier, Engineering Analysis Department, Industry Analysis  
Division

/s/ Brodrick Niemeier 07/10/2023

Assistant Engineer /Date  
Engineering Analysis Department

/s/ Eric Vandergriff 07/10/2023

Legal Counsel /Date  
Staff Counsel Department

**SUBJECT:** Staff Recommendation Regarding Spire Missouri Inc. Request for Temporary  
Variance

**DATE:** July 10, 2023

### EXECUTIVE SUMMARY

On April 11, 2023, Spire Missouri Inc. d/b/a Spire (“Spire” or “Company”) filed an Application for Temporary Variance and Request for Waiver (“Application”) from the Commission Rule 20 CSR 4240-10.030(19). The Application requests the Commission grant a temporary variance from the Company’s current Sample Meter Testing Plan. More specifically, Spire requests approval to replace all diaphragm meters that have been in service for ten or more years with ultrasonic meters without testing the replaced meters. Staff recommends the Commission grant Spire a temporary variance through December 31, 2025, for its Spire Missouri East operating area with conditions, as the company is facing an expiring contract concerning its meter reading system. However, Staff recommends the Commission deny Spire’s request for a variance from the Commission’s order in GO-91-253 for its Spire Missouri West operating area. Staff recommends the Commission order the following conditions:

1. The temporary variance from Spire Missouri East’s meter sampling plan applies only to Class 250, 400, and 600 diaphragm meters and expires on December 31, 2025. Spire shall continue to test rotary and turbine meters at least every 120 months. Spire shall continue to remove, inspect, and test tin case, iron case, steel case, and older aluminum case meters at least once every 120 months to the extent any such meters are still in use.

2. Spire shall contact each customer before diaphragm meter removal and offer a meter test to verify the diaphragm meter accuracy.
3. Spire shall test any diaphragm meter installed at a premise where the customer has complained to the Company about billing accuracy in the year prior to replacement, provided that the meter has not been previously tested within the past year.
4. The temporary variance does not apply to ultrasonic meters. Spire shall periodically test ultrasonic meters in accordance with the rule and maintain a record of the results.
5. Spire shall maintain records of manufacturer/factory tests for installed ultrasonic meters.

Additionally, Staff recommends the Commission order Spire to file a compliance tariff sheet (Sheet R-8) to reflect the Commission's order in this case.

Staff's recommendation of the temporary variance, as conditioned, is limited to the Spire Missouri East meter sampling plan and does not modify previous Commission orders. Of particular concern, the stipulation and agreement approved by the Commission in GR-2022-0179 requires Spire Missouri to complete an audit of its continuing property record and reevaluate its meter testing policies and procedures to ensure that accurate records of its entire meter population are being maintained.<sup>1</sup>

### **VARIANCE REQUEST**

In its Application, Spire proposed a temporary variance that would suspend the meter sampling program and any meter testing of diaphragm meters required by Commission rule 20 CSR 4240-10.030(19). The rule requires that each gas service meter installed shall be periodically removed, inspected, and tested at least once every 10 years or as often as the results warrant. Spire's predecessors<sup>2</sup> were granted variances from the meter testing requirements in cases GO-95-320 (Spire Missouri East) and GO-91-353 (Spire Missouri West). Spire's tariff sheet No R-8 reflects the previous Commission's Order with regard to the meter sampling plans. Spire is seeking a temporary variance through the time it takes to replace all diaphragm meters.

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<sup>1</sup> Paragraph 43.

<sup>2</sup> Laclede Gas Company and Kansas Power and Light Company are the predecessors who received the currently used variances for Spire Missouri East and West.

Spire's proposed variance applies to 250, 400, and 600 class diaphragm meters.<sup>3</sup> All of these meters are being targeted for replacement, with Spire Missouri East expecting to have most replaced by 2025 and Spire Missouri West expecting to have most replaced by 2027, though both companies will continue to replace some more recently installed meters until as late as 2032. These old diaphragm meters will be replaced with new ultrasonic meters that have integrated network devices that allow for two-way communication between the device and utility when a network is in place. Spire Missouri East has a contract with Landis and Gyr ("L&G") that is expiring on April 1, 2025, which allows the Company to use the L&G system to read customer's meters. An existing services contract is currently in place with Itron to replace the L&G contract. The new Itron contract uses van meter reading services on ultrasonic meters installed in Spire Missouri East.<sup>4</sup> As noted in the Application, the Company is not experiencing the same pressures in the Spire Missouri West region,<sup>5</sup> as it has a preexisting meter reading contract with Itron. Spire Missouri West has not informed Staff of any expiring contracts at this time that would drive a need to accelerate meter replacements.

### **DISCUSSION**

In 2020, Spire Missouri West began replacing diaphragm meters with the newer ultrasonic ones, with Spire Missouri East beginning a year later. As of June 1, 2023, Spire reports it has completed approximately 16% and 25% of its expected meter replacements in the Spire Missouri East and West operating areas, respectively. Spire Missouri West's strategy has focused upon replacing meters whenever the company is already at the location for another reason, while Spire Missouri East is attempting to accelerate its meter replacement due to the expiring L&G contract.

The current Spire Missouri East and Spire Missouri West meter sampling programs were approved by the Commission in GO-95-320 and GO-91-353, respectively. Both operating areas use statistical meter sampling, where samples are randomly selected from lots, and if a great

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<sup>3</sup> Staff requested a complete meter inventory in data request 5. The meter inventory provided by Spire did not initially include any meters with capacities of 400 or 600 cubic feet per hour. Spire has since provided an updated response including the Class 400 and 600 meters.

<sup>4</sup> Response to Staff Data Request No. 0267 in GR-2022-0179.

<sup>5</sup> Application, paragraph 21.

enough percentage of the sample meters falls outside the accepted 2% accuracy range,<sup>6</sup> the lot fails. However, the sampling plans differ when a meter lot fails. If a lot fails, Spire Missouri East must replace all meters in a failed lot within 5 years. The meter sampling plan for Spire Missouri West requires testing of failed lots at progressively shorter intervals as a greater percentage of meters within a given lot fall outside acceptable accuracy boundaries.

In Spire's Application, the Company proposed a variance from its current meter testing plans for diaphragm meters. Spire proposed the variance request in order to focus on replacing diaphragm meters that are ten years or older with ultrasonic meters by temporarily eliminating the testing requirements for the older meters. Spire claims the diaphragm meters are no longer manufactured and Spire has found the replacement parts difficult to source. The meter replacement program has been an issue in the two most recent rate cases GR-2021-0108 and GR-2022-0179.

#### Spire Missouri East

The Spire Missouri East meters slated for replacement use a L&G system to report customers' usages via a cellnet network. \*\* [REDACTED]

[REDACTED] \*\*<sup>7</sup> Spire was informed in 2018 that the contract would not be renewed past 2025, and the system will be shut down. This will leave Spire Missouri East with few options for reading meters. One alternative is to install modules on all meters, allowing them to be read from the street via radio signal, Spire estimates the module additions to be approximately \$60 per module.<sup>8</sup> Spire Missouri East plans to install modules on meters that have not yet fully depreciated by April 2025.<sup>9</sup> Spire has ordered 50,000 modules with the first shipment being expected in late July.<sup>10</sup> The other option, which Spire is hoping to avoid, would be to individually visit every

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<sup>6</sup> Meters testing between 98% and 102% are deemed as having acceptable accuracy.

<sup>7</sup> Confidential response to Staff Data Request No. 0266 in GR-2022-0179

<sup>8</sup> Response to Staff Data Request No. 0006 provides a cost comparison of a high replacement rate versus a low replacement rate but only for Spire Missouri East.

<sup>9</sup> These modules are unnecessary for Spire Missouri West as it already uses Itron meters and thus can use its current system to read ultrasonic meters until a network is in place to enable two-way communication.

<sup>10</sup> Response to Staff Data Request No. 0006.

meter and read it by hand, which will be required for any meter that is not replaced or does not have a module installed.

In response to Staff Data Request No. 0006, the Company provided a comparison of the capital costs of accelerating ultrasonic meter installations in the Spire Missouri East operating area to a slower pace with more module installations. Spire's results suggest that an accelerated pace of ultrasonic installations to avoid (but not eliminate) module installations may be more reasonable. However, Spire's calculation was limited to comparing capital costs; thus additional support in a future rate case is needed to support rate recovery.

In paragraph 22 of its application, Spire claims the variance would allow it to divert Spire Missouri East resources from meter testing to meter replacement activities. Spire Missouri East has approximately 220 employees trained to install ultrasonic meters.<sup>11</sup> In response to Staff Data Request No. 0010, Spire explained the variance would allow for between 5 and 10 employees to focus on meter replacement rather than meter testing.<sup>12</sup> The Company plans to have most of the required work done by April 1, 2025, but expects to still have diaphragm meters that were installed as recently as 2021 in service through 2032.<sup>13</sup>

Staff has found this Application to be reasonable for the Spire Missouri East operating area, but recommends the Commission order various conditions. Spire has asked for a temporary variance, however, it has not identified a set time period for the variance to expire. In response to Staff Data Request No. 0006, Spire indicated that it expects to complete most meter replacements in the Spire Missouri East operating area by 2025. Given the expiration of the L&G meter contract, Staff agrees that a variance from testing diaphragm meters is reasonable through December 31, 2025, for the Spire Missouri East operating area, as it will help streamline meter replacements and reduce the number of meter reading modules the Company must install. Additionally, as the variance request is only for Class 250, 400, and 600 diaphragm meters Staff has included clarification in Condition 1 that indicates other meter types would continue to be tested per the existing sampling plan.

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<sup>11</sup> Staff Data Request No. 0299 in GR-2022-0179

<sup>12</sup> Spire's response to Staff Data Request No. 0010

<sup>13</sup> From Staff Data Request No. 0002: "In Missouri East the bulk of the diaphragm meters will be replaced as part of the project to transition off the Landis & Gyr network meter reading system by April 2025."

The Commission's rule 20 CSR 4240-10.030(20) requires in part that "(20) Each utility furnishing metered gas service shall make a test of the accuracy of any gas service meter free of charge upon request of a consumer; provided, that the meter has not been tested within twelve (12) months previous to the request." Granting the variance request may limit the ability of customers to dispute billing if a meter was not tested prior to removal. Therefore, Staff recommends two related conditions. Condition 2 requires Spire to inform customers before visits<sup>14</sup> that their meter will be replaced and offer to test it for accuracy if the customer desires. Condition 3 requires Spire to test any diaphragm meter installed at a premise where the customer has complained to the Company about billing accuracy in the year prior to replacement, provided that the meter has not been previously tested within the past year. While the rule mentioned above is similar to this condition, the customer, who may not know about this service, must request it to be performed.

The existing sampling plans do not contemplate the existence of ultrasonic meters. Therefore, those meters are required to be tested at least every 120 months per 20 CSR 4240-10.030(19). The existing meter sampling plan for Spire Missouri East explicitly requires that a manufacturer's proof be maintained for meters in the sample program. While at this time Spire is not requesting a variance from the Commission's periodic meter testing rule for ultrasonic meters, Staff recommends it maintain these manufacturer's proofs, as well as other information about the expected lifetime of diaphragm meters to support any future request. Condition 4 clarifies that the variance does not apply to ultrasonic meters and Condition 5 requires Spire to maintain records of manufacturer/factory tests for installed ultrasonic meters.

#### Spire Missouri West

Spire has not shown a sufficient need for this variance for its Spire Missouri West operating area at this time. While Spire Missouri East has the expiring L&G contract, Spire has not informed Staff of any similar issue for its Spire Missouri West operating area. In paragraph 21 of its application, Spire claims the variance would allow it to divert

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<sup>14</sup> Staff is aware Spire will not always be able to contact a customer before unplanned maintenance, and in these situations offering a meter test while maintenance is being performed will be sufficient.

Spire Missouri West resources from meter testing to meter replacement activities and accelerate replacements. Spire Missouri West has 150 employees trained to install ultrasonic meters.<sup>15</sup> All meters from all regions are tested internally in the Company's meter shop in Shrewsbury, Missouri, as capacity allows. Any testing that exceeds that internal capacity is being shipped to a third-party for testing. At this time, all meters for the Spire Missouri West region are being shipped to a third-party for testing. Spire did not quantify the benefit of reducing this third-party testing. Further, due to the expiring contract for Spire Missouri East, accelerating the pace of replacements in the East region should be a priority. As such, Staff recommends that the variance only apply to Spire Missouri East, as it is neither necessary for Spire Missouri West nor has the company quantified any potential benefits. While the Company provided a comparison of the capital costs associated with accelerating ultrasonic installations in the Spire Missouri East region the benefits of avoiding a module installation do not exist for Spire Missouri West as it already uses Itron meters and Itron provides van meter reading services to Spire Missouri West.

### **CONCLUSION**

Staff has reviewed the Company's Application, and data request responses. Staff recommends the Commission grant Spire's request for a temporary variance from meter testing for its Spire Missouri East operating area until December 31, 2025. However, Staff recommends the Commission deny Spire's request for a variance from the Commission's order in GO-91-253 for its Spire Missouri West operating area. Staff further recommends the Commission order the following conditions:

1. The temporary variance from Spire Missouri East's meter sampling plan applies only to Class 250, 400, and 600 diaphragm meters and expires on December 31, 2025. Spire shall continue to test rotary and turbine meters at least every 120 months. Spire shall continue to remove, inspect, and test tin case, iron case, steel case, and older aluminum case meters at least once every 120 months to the extent any such meters are still in use.
2. Spire shall contact each customer before diaphragm meter removal and offer a meter test to verify the diaphragm meter accuracy.

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<sup>15</sup> Staff Data Request No. 0299 in GR-2022-0179

3. Spire shall test any diaphragm meter installed at a premise where the customer has complained to the Company about billing accuracy in the year prior to replacement, provided that the meter has not been previously tested within the past year.
4. The temporary variance does not apply to ultrasonic meters. Spire shall periodically test ultrasonic meters in accordance with the rule and maintain a record of the results.
5. Spire shall maintain records of manufacturer/factory tests for installed ultrasonic meters.

Additionally, Staff recommends the Commission order Spire to file a compliance tariff sheet (Sheet R-8) to reflect the Commission's order in this case.

Staff's recommendation of the temporary variance, as conditioned, is limited to the Spire Missouri East meter sampling plan and does not modify previous Commission orders. Of particular concern, the stipulation and agreement approved by the Commission in GR-2022-0179 requires Spire Missouri to complete an audit of its continuing property record and reevaluate its meter testing policies and procedures to ensure accurate records of its entire meter population are being maintained.<sup>16</sup>

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<sup>16</sup> Paragraph 43.



BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

In the Matter of the Application of Spire )  
Missouri, Inc. for a Temporary Variance of ) Case No. GE-2023-0354  
Its Meter Sampling Program for Diaphragm )  
Meters During Deployment of Ultrasonic )  
Metering Infrastructure )

AFFIDAVIT OF BRODRICK NIEMEIER

STATE OF MISSOURI )  
 ) ss  
COUNTY OF COLE )

**COMES NOW** Brodrick Niemeier, and on his oath states that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation, in Memorandum form*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

Brodrick Niemeier  
Brodrick Niemeier

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 10<sup>th</sup> day of July, 2023.

Dianna L. Vaught  
Notary Public

