

MEMORANDUM

TO: Missouri Public Service Commission Official Case File,
Case No. GR-2021-0127, Spire Missouri, Inc., d/b/a Spire

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/s/ David M. Sommerer 5/27/22 /s/ Jamie S. Myers 5/27/22
Project Coordinator / Date Staff Counsel / Date

SUBJECT: Staff's Recommendation for Case No. GR-2021-0127, Spire Missouri, Inc.,
d/b/a Spire 2019-2020 Actual Cost Adjustment Filing

DATE: May 27, 2022

I. EXECUTIVE SUMMARY

On October 30, 2020, Spire Missouri, Inc., d/b/a Spire ("Company" or "Spire East") filed its Actual Cost Adjustment (ACA) for the 2019-2020 ACA period. This filing revises the ACA rates based upon the Company's calculation of the ACA balances.

Spire East serves approximately 650,000 residential, commercial, and industrial customers in the St. Louis metropolitan area and surrounding counties.

The Commission's Procurement Analysis Department ("Staff") has reviewed the Company's ACA filing. Staff's review included an analysis of billed revenues and actual gas costs for the period October 1, 2019, through September 30, 2020. Staff conducted a reliability analysis for Spire East, including a review of its estimate of customers' needs on a peak day (peak day requirements and the capacity levels to meet those requirements), peak day reserve margin and its rationale, and a review of gas supply plans for various weather conditions. Staff also reviewed Spire East's gas purchasing practices to determine the prudence of the Company's purchasing and operating decisions.

It is important to note that although Storm Uri was a very significant event, it occurred in February 2021, and will not be part of this 2019-2020 ACA review. It will be reviewed in the context of the 2020-2021 ACA review due to be filed December 15, 2022.

Staff has proposed one adjustment to Spire East's September 30, 2020, ACA account balances as discussed in the Affiliated Asset Management Agreement section and as shown in the table in the Recommendations section of this Memorandum. The following Table of Contents provides a

Appendix A

*** Denotes Highly Confidential Information ***

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guide to Staff's comments and recommendations contained in Sections I through VIII of this Memorandum:

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STAFF'S TECHNICAL DISCUSSION AND ANALYSIS

II. BILLED REVENUE AND ACTUAL GAS COSTS

Staff performed a review and evaluation of the Company's actual gas costs and billed revenue. Other than the Staff proposed adjustment to reduce gas costs as a result of Spire East's asset management agreement (AMA) with Spire Marketing (see the Affiliated Asset Management Agreement section IV), Staff has no adjustments to the September 30, 2020 ACA balance. Staff's other comments and recommendations are discussed in the rest of section II.

ACA Balance Error

Staff discovered an error in one of the ending ACA account balances it recommended in the prior ACA period (2018-2019). Staff's Memorandum in Case No. GR-2020-0121¹ recommended the ending balance for the Firm Sales LVTSS of \$ 294,691. This balance should have been stated as \$294,892. ACA account balances are cumulative such that the ending account balance of the prior ACA period is the beginning balance of the current ACA period.

The Company filed the correct beginning balance for the Firm Sales LVTSS ACA account in this case. Therefore, there is no rate impact and no adjustment is required to correct this error. The Staff notes this for transparency purposes and accuracy of records.

¹ Missouri Public Service Commission, "Order Establishing Ending ACA Balance," Case No. GR-2020-0121 (issued February 24, 2021, effective March 26, 2021) pg. 2.

Natural Gas Supply Request For Proposal (RFP) Evaluations and Supply Award Process

Spire East utilizes an RFP process to solicit bids for monthly firm baseload² natural gas supply as a part of creating its gas supply portfolio. The Company's contemporaneous documentation of the supply contracts awarded through this RFP process during the period was neither transparent nor did it explain why the Company chose a particular gas supply price. For example in December 2019, Spire Marketing responded to the Spire East's RFP with an offer to sell gas supply at a price of either IFERC TETCO M2³ plus \$.125 or NYMEX⁴ minus \$.28. Spire selected an award price of NYMEX minus \$.28 versus the alternative of IFERC TETCO M2 plus \$.125. Spire's RFP award documentation provided did not provide pricing data analyses or specify why the Company chose the particular pricing index that it selected. In this instance the price selected turned out to be higher than the alternative price offered.

Staff recommends Spire's RFP evaluation and award documentation include an explanation for the location and gas supply price awarded.

III. SPIRE STL PIPELINE

Background

Given the sheer size and scope of the decision to enter into a contract with Spire STL Pipeline, and the fact that it is an affiliated transaction, the Staff sought assistance from an outside consultant to review the prudence and affiliated aspects of the contract between Spire Missouri Inc. and Spire STL Pipeline. Staff obtained the assistance of Schumaker & Company, Inc. for this review. The Schumaker Report is attached as part of the Staff ACA recommendation.

Natural gas started flowing in November of 2019 of the Spire STL Pipeline. Therefore, the appropriate ACA period to review the prudence of the contract is this 12-month ACA period ending September 2020. It is helpful to provide a timeline of significant events to give some background:

² Baseload supply requires the same volume of supply to flow each day of the month during the term of the agreement.

³ The FOM index is a gas price developed and published by Platt's in its trade publication, *Inside FERC's Gas Market Report (IFERC)*. The index price is generally based on a volume-weighted average of fixed price gas supply transactions occurring during the last five business days of the month at a specific location. It is common for LDCs to use index pricing to set the price of gas it buys from its suppliers. Once the FOM index is set at the beginning of the month, it does not change throughout the month. TETCO M2 is a pricing location on Texas Eastern Transmission (TETCO) pipeline.

⁴ The New York Mercantile Exchange (NYMEX) sets a price for natural gas for a specific delivery month.

January 2017	Precedent Agreement signed
January 2017	Application of Spire STL Pipeline LLC for Certificates of Public Convenience and Necessity under CP17-40
August 2018	Received Federal Energy Regulatory Commission (FERC) 7C certificate
November 2018	FERC notice to proceed
January 2019	Construction start
November 2019	Pipeline in service

As discussed in detail in the Schumaker Report, there is no finding of imprudence with regard to the Spire Missouri Inc. decision to enter into a contract with Spire STL Pipeline. However, there are concerns about certain aspects of the transaction that Staff will note here.

Concerns Resulting from the Appeal and Vacating of the August 2018 FERC Certificate

First, as documented in a separate investigation proceeding, Case No. GO-2022-0022 (*In the Matter of Staff's Investigation of Spire STL Pipeline's Application at FERC for a Temporary Certificate to Operate*), great concern and frustration arose prior to the winter of 2021-2022 regarding the potential for natural gas outages in the St. Louis area due to potential shutdown of the Spire STL Pipeline. Significant to that investigation case was Spire's planning for the various possible outcomes of a June 22, 2021, decision of the U.S. Court of Appeals for the District of Columbia Circuit vacating the FERC certificate of convenience and necessity that had been issued for the operation of the pipeline.

Despite the fact that there was some risk of the appellate courts overturning the FERC authorization issued in August 2018, Spire STL Pipeline, at its own risk, decided to proceed with construction of the line once the authorization was issued. When viewed in conjunction with the fact that Spire East had limited resources to replace the potentially lost Spire STL capacity with viable alternatives, the decision to move forward with construction, shortly after the "notice to proceed" was issued, is questionable. Key risks remain for Spire regarding the ongoing FERC certification process and court review process and those risks should be borne by Spire in future Commission proceedings.

Availability of a well-documented Request for Proposal process for the pipeline service

Another Staff concern arises around the general lack of contemporaneous documentation that Spire Missouri initially provided regarding the RFP process to obtain additional gas supplies through new transportation routes implemented in 2015. After Spire Missouri reported that it could not

provide such documents due to its agreements to destroy RFP proposals, Staff initially concluded that there was no documented RFP process. Staff continued to press for this information, and Spire Missouri finally provided some relevant RFP documents in early 2022. Even after receiving several key documents, Staff found that Spire Missouri's evaluation process itself was not very transparent as it moved to an ultimate decision in early 2016 to have an affiliated entity, Spire STL Pipeline, construct, own, and operate the pipeline.

Staff notes that over the course of this review there was eventual improvement in the access to documents relating to the decision to have Spire STL Pipeline construct, own and operate the pipeline, along with the Spire Missouri's availability to explain and clarify the decision-making process.

Key elements of the contracting decision and resulting conclusion of prudence

As a result of an extensive review of the decision of Spire Missouri to contract for capacity with Spire STL Pipeline, Staff found that the key customer benefit from the agreement was Spire Missouri's decision to cap the transportation rate of 25 cents per MMBtu over the 20-year term of the agreement. This rate compared favorably to initial rates received from non-affiliated vendors through the summer of 2015 RFP process. Those unaffiliated vendor rates varied between 20 cents per MMBtu and 25 cents per MMBtu, but were based upon initial construction estimates that were not intended to be capped and would ultimately have reflected actual construction costs. The lowest rate from the RFP was from ** [REDACTED] **. This was the proposal that the Company initially decided to pursue. However, in early 2016, it became apparent to Spire Missouri Inc, that, at that time, ** [REDACTED] ** was undergoing certain credit issues and was no longer considered by Spire Missouri Inc. to be a viable bid.

As a key aspect of the Spire STL Pipeline agreement, the rate cap had the tangible benefit of holding Spire STL Pipeline accountable for nearly all cost over-runs related to the construction project. The protective nature of the cap and its corresponding benefits for Spire Missouri's customers are critical to accepting the prudence of this agreement. This cap exists in an environment of possible inflationary pressures, and ongoing interstate pipeline modernization programs for non-affiliated pipelines.

Non-price benefits of the agreement include provision of needed access to the Marcellus Basin, and improved operating pressures into the North and West parts of Spire Missouri's distribution system. Another possible ongoing benefit is access to a relatively liquid (actively traded) gas supply pricing point South of Chicago, Illinois. To some extent these non-price benefits would have been achievable if other entities would have been selected.

Perhaps the most significant offset to the benefits of the Spire STL Pipeline transaction is the loss of some Enable Mississippi River Transmission (MRT) pipeline no-notice capacity (basically 7 Bcf of MRT storage). This took place when the volumes of gas moving from Arkansas and Louisiana through the MRT pipeline were displaced by some part of the newly contracted flows of gas from Spire STL Pipeline. However, some turn-back of the MRT Mainline capacity was likely required in order to allow room in the gas portfolio for the Spire STL Pipeline capacity.

Fully Distributed Cost and Fair Market Price

The Staff along with Schumaker & Company reviewed the Commission's Affiliated Transaction Rule ("Rule") in light of the Spire STL Pipeline transaction. One of the key aspects of the Rule is the requirement that affiliated goods and services be procured for a regulated utility at the lesser of fair market price (FMP) or fully distributed cost (FDC). As the Rule states:

Fully distributed cost (FDC) means a methodology that examines all costs of an enterprise in relation to all the goods and services that are produced. FDC requires recognition of all costs incurred directly or indirectly used to produce a good or service. Costs are assigned either through a direct or allocated approach. Costs that cannot be directly assigned or indirectly allocated (e.g., general and administrative) must also be included in the FDC calculation through a general allocation.⁵

Additional insight from the Rule comes from a provision that indicates one of the parameters of the pricing standard as being "[t]he fully distributed cost to the regulated gas corporation to provide the information, assets, goods or services for itself."⁶ The Rule does not define fair market price.

The Affiliated Transaction Rule is separate and apart from the Standards of Conduct (SOC) applicable to Spire that were filed and approved in 2013 to primarily address concerns about gas supply transactions with the regulated utility's gas marketing affiliate. The SOC is considered part of the Company's Cost Allocation Manual. The SOC was essentially a waiver from documentation of the fully distributed cost pricing standards of the affiliated transaction rule. If a transaction is subject to the Purchased Gas Adjustment provisions, and is not addressed in the SOC, it would be subject to the Company's Cost Allocation Manual and the Affiliated Transaction Rule.

Spire Missouri provided its position on the FDC and FMP standards applicable to the Spire STL Pipeline transaction to Staff. Since the Spire STL Pipeline transaction pertains to a standalone pipeline transportation service and does not involve the procurement of gas supply, the Standards

⁵ 20 CSR 4240-40.015 Affiliate Transactions paragraph 1.F.

⁶ 20 CSR 4240-40.015 Affiliate Transactions paragraph 2.1.B.

of Conduct are not specifically applicable. The Affiliated Transaction Rule requires that Spire Missouri Inc. would purchase the service from Spire STL Pipeline at the lesser of FDC or FMP. Spire's position is that FDC in this instance would take into account all the costs used to produce the service and are viewed from the perspective as if the regulated gas corporation provided the service for itself. The FDC would thus reflect the local distribution company's cost of building the pipeline.

As stated previously, fair market price is not defined in the rule. One approach would be to consider the FERC maximum rate as reflecting a fair market price. The FERC maximum rate is available to all market participants and is developed in a traditional FERC cost of service evaluation. The maximum FERC rate is 35.70 cents applicable to the Spire STL Pipeline per Dth (MMBtu). Spire Missouri Inc. developed an FDC analysis that assumed the regulated utility had built the lateral totally within Missouri in order to have the utility maintain ownership of the lateral. That analysis included an assumption of significantly longer route to the Spire East distribution system. That estimated FDC rate that resulted was 52 cents per MMBtu. Given the extra mileage involved, it is reasonable to assume that the FDC rate for the Spire STL Pipeline would fall between the FERC maximum rate of 35.70 cents and the estimated Missouri route estimate of 52 cents per MMBtu. Based upon Staff's analysis, under both an FDC and FMP assessment the actual Spire East rate of 25 cents per MMBtu is lower and therefore compliant with the costing standards of the Rule.

IV. AFFILIATED ASSET MANAGEMENT AGREEMENT

An asset management agreement (AMA) involves a release of pipeline capacity by a releasing shipper (Spire Missouri Inc.) to a replacement shipper (Spire Marketing). Spire Marketing is the unregulated affiliate of Spire Missouri Inc. AMAs typically have a supply obligation associated with the agreement. In this particular AMA, Spire Missouri released its capacity on Enable Gas Transmission (EGT) to Spire Marketing with the obligation on Spire Marketing's part to sell back supply when requested by Spire Missouri. This capacity generally has receipt points in the western part of EGT's system and delivery points on the eastern part of its system. Since there is a release of pipeline capacity involved, Spire Missouri Inc. is claiming 25 percent of the capacity release under its capacity release sharing plan under its current tariff.

It is important to note that AMA arrangements are treated as exempt in the Spire Missouri's Cost Allocation Manual from the Standards of Conduct. That brings those agreements back under the more traditional affiliate transaction rule with regard to pricing protections.

This transaction proves somewhat difficult to analyze in terms of customer benefit due to its two-part nature as a supply and transportation agreement. Although Spire Missouri's EGT invoice

reflects a credit received from Spire Marketing for the fixed demand part of the capacity, the pricing reflects an assumption that the receipt points of the contract are sourcing the gas supply on the more expensive eastern part of EGT Enable's system. However, the receipt points in this agreement actually reflects the less expensive western part of EGT Enable's system.

This leads to a likely low-risk profit scenario for Spire Marketing as it buys cheaper gas and resells it back to Spire East. In addition to this attractive pricing spread, an additional premium is added to the gas supply costs that Spire East pays. Staff understands that a key rationale Spire Missouri uses for this atypical pricing is its claim that it is difficult to nominate or order gas supplies on the western part of the EGT system due to the nature in which certain nominations are cut or reduced.

Staff's concerns with the affiliated AMA are that there does not appear to be a similarly situated unaffiliated transaction that was part of an open bidding process for this service. In addition, it is not clear that there is substantial benefit to Spire Missouri for releasing this capacity to Spire Marketing based on nomination-complexity on the western part of the EGT system.

Staff is repricing this agreement for disallowance purposes using a typical western gas supply index rather than the EGT Enable eastern gas supply index used in the contract. The impact of this disallowance is \$1.2 million.

V. STORAGE RELEASE TO AFFILIATE

During this ACA period, Spire Missouri released some of its MRT storage capacity to Spire Marketing. The release of storage is not a typical release transaction based on the history of capacity release activity of Spire Missouri. Since release of pipeline capacity is involved, Spire East has claimed 25 percent of the release credit under its capacity release sharing plan in its current tariff.

This storage capacity release relates to the release of 7,000,000 Mcf of storage capacity of the total MRT capacity of 22,000,000 Mcf. Once again, this is not a straightforward agreement, and involves several operational facets to understand. The Company has indicated that even though it is claiming 25% of the capacity release, the majority (75%) of the capacity release credit is going back to reduce the customers' gas costs via the PGA/ACA. However, this net credit is not enough to totally eliminate the fixed storage charges that Spire Missouri Inc. must pay to MRT to acquire and hold the storage.

Spire Missouri maintains that when the possible MRT rate impacts are taken into account, there is a slight net benefit for the customer. It argues that if it had subscribed to 15,000,000 Mcf rather than 22,000,000 Mcf, MRT would have raised its rates for storage based on reduced

billing determinants. Spire Missouri further claims that its subscribing for 22,000,000 MCF of storage reduced the rates, and the capacity release of the excess 7,000,000 MCF provides additional benefit.

The Staff is much more concerned about this release of the storage capacity in the context of the 2020-2021 ACA period, which includes the Storm Uri impacts. This agreement will be closely reviewed in the 2020-2021 ACA period as impacted by Storm Uri. Ultimately the storage capacity release was carried over into the 2020-2021 ACA period, where potentially more storage capacity would have been available during Storm Uri absent the release to Spire Marketing. Given the extensive price increases in February 2021, this is an important aspect to review in the subsequent 2020-2021 ACA period.

VI. RELIABILITY AND GAS SUPPLY ANALYSIS

As a regulated gas corporation providing natural gas services to Missouri customers, a local distribution company (LDC) is responsible for conducting reasonable long-range supply planning and the decisions resulting from that planning. A purpose of the ACA process is to review the LDC's planning for gas supply, transportation and storage to meet its customers' needs. For this analysis, Staff reviewed Spire East's plans and decisions regarding estimated peak day requirements and the capacity levels to meet those requirements, peak day reserve margin and the rationale for this margin and natural gas plans for various conditions.

Staff has no proposed financial adjustments for the 2019-2020 ACA period related to reliability analysis and gas supply planning. Staff's other comments and recommendations are discussed in the rest of this section.

Transportation and Storage Portfolio Changes

In Case No. GR-2020-0121, Staff noted that Spire East began to receive service from the Spire STL pipeline, an affiliated interstate pipeline, in November 2019. As a result, Spire East made significant changes to its transportation and storage portfolio that came into effect in the 2019-2020 ACA period. Spire East now has 350,000 Dth/day capacity on Spire STL, a new affiliated pipeline. The largest change on other pipelines was on Mississippi River Transmission, on which Spire East reduced subscribed capacity by 254,550 Dth/day, of which 179,550 Dth/day was deliverable to city gates. It reduced capacity on Enable Gas Transmission pipeline by 75,000 Dth/day, Trunkline Gas Company pipeline by 80,000 Dth/day and it allowed 80,000 Dth/day on Panhandle Eastern Pipeline to lapse (these three pipelines do not deliver gas directly to Spire East city gates). It increased capacity on MoGas Pipeline by 42,200 Dth/day in order to bring more supply to the west side of the St. Louis area. In addition, Spire East has stated its intention to retire facilities

related to propane injection in its general rate case, No. GR-2021-0108. In discussions with Staff, Spire East stated that its facilities for injecting propane near the storage cavern were not available in the 2019-2020 winter. They indicated that facilities for injecting propane at the Catalan site, along with delivering propane to those facilities, were available during that period. Subsequently, all capacity to deliver propane to the distribution system has been removed, though some of the equipment may still be in place or repurposed for other uses.

Resource Planning

Over the course its review in this case, Staff has developed serious concerns about Spire Missouri's resource planning, the way it presents such planning in ACA cases, and the potential for misunderstanding the actual reliability of gas supply. In a stipulation approved by the Commission in 2013, Spire agreed to evaluate pipeline and storage capacity to ensure reliability, and specifically that it would prepare and submit to Staff a "comprehensive evaluation as deemed necessary by them [Spire Missouri] but no less frequently than every three years."⁷ Further, Spire Missouri agreed that if it "revises the transportation capacity or storage capacity from that identified in the Demand/Capacity Analysis, Laclede Gas [Spire Missouri] shall prepare an addendum to the Demand/Capacity Analysis within 6-months of making such changes, explaining the changes and the rationale for such changes."⁸

Prior to this stipulation, Spire Missouri had submitted an annually-revised report on demand and resource capacity in response to Staff data requests (DR) in ACA cases. Subsequent to the stipulation, Spire Missouri submitted reports in 2016 and belatedly in 2020.

Staff had previously accepted these reports as good-faith representations of Spire Missouri's demand and available resources. However, in this review Staff has become concerned that these reports have not represented Spire Missouri's contemporaneous assessment of its supply, transportation and storage resources or their ability to perform fully during periods of peak demand.

For instance, *** [REDACTED]

[REDACTED]

⁷ Stipulation and Agreement, Section 18.a, pg. 29, Case No. GM-2013-0254 (EFIS Item No. 71).

⁸ Ibid., Section 18.b, pg. 30.

⁹ Spire Missouri response to Staff DR No. 0128, *** [REDACTED]

[REDACTED]¹⁰ [REDACTED]
[REDACTED]¹¹
[REDACTED]¹² *** The team’s review of Spire Missouri’s gas demand and resources incorporated the preparation of the 2016 reliability report. *** [REDACTED]
[REDACTED]¹³ [REDACTED]
[REDACTED]
[REDACTED]¹⁴ [REDACTED]
[REDACTED]¹⁵ *** Though the 2016 reliability report identified ** [REDACTED] ** of potential supply to meet peak demand, it made no mention of concerns Spire Missouri was describing to *** [REDACTED] ***

This apparent indifference on the part of Spire Missouri was not limited to its failure to mention such concerns in the 2016 reliability report or amendments. As part ACA reviews, Staff asked, “For this ACA, has the Company noted any actual or potential problems related to: (1) Laclede [Spire Missouri East] propane storage injections or withdrawals, or (2) the operation of the LDC system when propane is vaporized and flowed into the Laclede [Spire Missouri East] system?”¹⁶ In May 2016, July 2017 and April 2018, Spire Missouri answered, “No.”¹⁷ As long as three years after Spire Missouri internally identified issues with its propane system, and a year after it identified ending reliance on “problematic” propane facilities as a reason its supported Spire STL Pipeline in filings to the Federal Energy Regulatory Commission,¹⁸ it did not amend its reliability report to reflect the problem or identify it as a problem in response to a question directly touching on the issue in ACA cases.

Staff recommends that Spire Missouri refrain from narrowly construing its agreement relating to reliability reporting and perfunctory answers to data requests in ACA cases.

¹⁰ Ibid., *** [REDACTED] ***
¹¹ Ibid., *** [REDACTED] ***
¹² Ibid., *** [REDACTED] ***
¹³ Ibid., *** [REDACTED] ***
[REDACTED] ***
¹⁴ Ibid., *** [REDACTED] ***
[REDACTED] ***
¹⁵ Ibid., *** [REDACTED] ***

¹⁶ Staff DR No. 0068 in Case Nos. GR-2015-0201, GR-2016-0224 and GR-2017-299.
¹⁷ Spire Missouri’s responses to Staff DR No. 0068 in Case Nos. GR-2015-0201, GR-2016-0224 and GR-2017-299.
¹⁸ Motion for Leave to Intervene and Statement in Support of Application, February 27, 2017, FERC Docket No. CP17-40. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20170227-5138.

Certain Risks Only Partially Addressed by Spire STL Pipeline

In supporting the Spire STL Pipeline, Spire Missouri raised the issue of earthquake risks concerning the Mississippi River Transmission (MRT) Pipeline, which traverses the New Madrid Seismic Zone (NMSZ). Staff has two concerns related to this analysis. First, Spire Missouri's analysis the earthquake risk on MRT seems to ignore mitigating factors. Second, having raised the threat of gas supply loss resulting from an earthquake in the NMSZ, Spire Missouri's ACA filings do not address mitigation or contingency planning to address the remaining risk following the agreement with Spire STL Pipeline.

Spire Missouri formally notified Staff of its transportation portfolio changes related to Spire STL Pipeline on August 30, 2019, with follow-up notice addressing justification for the changes on December 18, 2019.¹⁹ The December notice identified earthquake hazards as a reason for shifting transportation capacity to Spire STL Pipeline. Only one of these documents specifically addressed risks to Spire Missouri and MRT, and it was not a detailed report. These documents do not address matters that might have mitigate concerns about MRT's performance during an earthquake. These include:

- **MRT has parallel pipes through the region.** MRT Mainline had three parallel pipes running from northeast Louisiana to near Poplar Bluff, Missouri. It has two parallel pipes from Poplar Bluff to the St. Louis area. For there to be complete loss of flow on MRT, all of the pipes, along with connectors between them, would need to be damaged. Though it is not in the area likely to be most impacted by an earthquake in the NMSZ, Spire STL is only a single pipeline, and lacks the redundancy of MRT.
- **Serious earthquake damage to natural gas transmission pipelines is rare.** Staff searched a Pipeline and Hazardous Materials Safety Administration database of significant natural gas pipeline incidents from 2001 through 2020 for earthquake-related incidents.²⁰ For natural gas transmission pipelines in the 12 states that have had notable earthquake activity,²¹ Staff found only one incident attributed to an earthquake of a

¹⁹ Spire Missouri agreed to make such notifications in the Stipulation and Agreement (2013 Stipulation) approved by Commission order issued on July 17, 2013, Case No. GR-2013-0254 (EFIS Item No. 66).

²⁰ <https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends>

²¹ These were states that had earthquake of magnitude 6.0 or greater in the period since 1811 as identified in the Significant Earthquake Database compiled by the National Centers for Environmental Information (<https://www.ngdc.noaa.gov/hazel/view/hazards/earthquake/search>). The states were Missouri, Alaska, Arkansas, California, Hawaii, Idaho, Montana, Nevada, Oregon, South Carolina, Utah and Washington.

6.0 magnitude. That incident occurred in California, and though the pipeline pressure was reduced while repairs were made, it remained in operation.

- **A major earthquake in the NMSZ could result in decreased natural gas demand in the area.** Were an earthquake comparable to the 1811-1812 New Madrid quakes to occur, it is likely that widespread structural damage will result in the full or partial closing of facilities that would lead in turn to reduced demand in the affected area. Even the St. Louis area may experience some shift in population due to earthquake damage because, as the U.S. Geological Survey (USGS) noted “low attenuation of seismic energy in the region (seismic energy carries further with less weakening of the signal than in the western U.S.) and a substantial number of historic older unreinforced brick and stone buildings make the St. Louis area vulnerable to moderate earthquakes at relatively large distances”²² including “distant large earthquakes in the New Madrid and Wabash Valley seismic zones.”²³ Such depopulation would result in a shift of natural gas demand away from affected areas to areas where displaced populations are relocated.

However, the chance of a major, very destructive earthquake in the NMSZ remains. MRT accounts for about half of the contracted transportation capacity to Spire Missouri’s city gates. Spire Missouri also contracts with MRT for a large quantity of storage, which is located in Louisiana. A complete loss of transportation capacity on MRT would be greater than a complete loss of Spire STL capacity. Spire Missouri claimed that a loss of Spire STL transportation service during the winter could result in a loss of service to 175,000 customers on a peak day, and more after the depletion of on-system storage.²⁴ While the impact of a loss of all flows from MRT would likely be different from the loss of Spire STL, it would involve a comparable amount of capacity, so a similar magnitude of customer loss might be expected.

Staff does not expect Spire Missouri to eliminate all exposure to earthquake risks from the NMSZ, especially because it serves customer in and around the area. However, because Spire Missouri has made it a significant issue in justifying major gas portfolio changes, and it has a continuing

²² USGS, *St. Louis Area Earthquake Hazards Mapping Project*,
https://earthquake.usgs.gov/hazards/urban/st_louis.php.

²³ Ibid.

²⁴ Application of Spire STL Pipeline LLC for a Temporary Emergency Certificate, or, In the Alternative, Limited Term Certificate, July 26, 2021, Exhibit Z-1: Affidavit of Scott Carter, President of Spire Missouri, Inc. FERC Docket No. CP17-40.

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20210726-5164&optimized=false

Spire Missouri Inc.’s Initial Comments in Support of the Application of Spire STL Pipeline LLC for a Temporary Emergency Certificate, or, In the Alternative, Limited-Term Certificate, September 7, 2021, FERC Docket No. CP17-40. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20210907-5192&optimized=false.

B. Evaluation of Hedge Program

Staff reviews the prudence of a Company's decision-making based on what the Company knew or reasonably could have known at the time it made its hedging decisions. The Company's hedging planning should be flexible enough to incorporate changing market circumstances. The Company should evaluate its hedging strategy in response to changing market dynamics as to how much the existing hedging strategy actually benefits its customers while balancing market price risk. For example, Spire East should routinely review and evaluate the adequacy of its hedge coverage regarding the appropriate volumes of financial instruments as well as the possible use of more cost-effective financial instruments to assess exposure to market prices under the current market where the market prices have become relatively less volatile.

Staff recommends the Company analyze the benefits/costs based on the outcomes from its hedging strategy, and evaluate any potential improvements on the future hedging plan and its implementation to achieve a cost effective hedging outcome as the Company reviews and develops its hedging program each year in the Company's Risk Management Strategy.²⁵ For example, the Company should continue to evaluate the performance of its hedge program in terms of the various types of financial instruments used, whether some level of over-the-counter instruments might help control margin calls as the Company's policy is to utilize various derivatives, and whether the existing program should be modified under the current market.

Additionally, as Spire East incorporates the lower of First Of Month (FOM) Index or Daily Index pricing for swing supply as a type of insurance against daily price spikes within a month into the Company's Risk Management Strategy, the Company should continue to evaluate the costs/benefits of these instruments in conjunction with other parts of the Company's hedge program.

VIII. RECOMMENDATIONS

1. Staff recommends the Commission issue an order directing the Company to establish the ACA account balance as shown in the table below to reflect the under or (over)-recovery balance as of September 30, 2020.

An (over)-recovery is the amount owed to the customers by the Company and is shown in the table as a negative number (in parentheses). An under-recovery is an

²⁵ The Company's Risk Management Strategy dated July 2015 was the most recent on available for the 2019-2020 ACA period. Staff notes that the Company indicated during recent updates that it would evaluate and consider a longer term hedging. Staff will continue to monitor the change in the Company's hedging strategy.

amount owed to the Company by the customers and is shown in the table as a positive number.

	Firm Sales non-LVTSS	Firm Sales LVTSS	Interruptible Sales	LP Sales	Firm Transportation	Basic Transportation	Vehicular Fuel
ACA Balance per Filing	\$(58,034,422)	\$ (242,189)	\$ (144,019)	\$ (1,011)	\$ 272,512	\$ 241	\$ 336,778
Staff Adjustments	\$ (1,242,401)	\$ (2,854)	\$ (6,393)	\$ 0	\$ 0	\$ 0	\$ (1,936)
Staff Recommended ACA Balance	\$(59,276,823)	\$ (245,043)	\$ (150,412)	\$ (1,011)	\$ 272,512	\$ 241	\$ 334,842

- Staff recommends the Commission issue an order requiring Spire East to respond to all of the recommendations herein within 45 days.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri, Inc. d/b/a)
Spire (East) Purchased Gas Adjustment)
(PGA) Tariff Filing) **Case No. GR-2021-0127**

AFFIDAVIT OF KWANG Y. CHOE, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Kwang Y. Choe, PhD, and on his oath declares 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, under penalty of perjury.

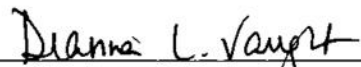
Further the Affiant sayeth not.



KWANG Y. CHOE, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 25th day of May, 2022.



Notary Public

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Spire Missouri, Inc. d/b/a)
Spire (East) Purchased Gas Adjustment)
(PGA) Tariff Filing)
Case No. GR-2021-0127

AFFIDAVIT OF ANNE M. CROWE

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW Anne M. Crowe, and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Recommendation in Memorandum* form; and that the same is true and correct according to her best knowledge and belief, under penalty of perjury.

Further the Affiant sayeth not.

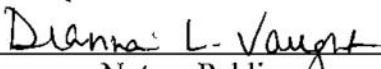


ANNE M. CROWE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 25th day of May, 2022.

DIANNA L. VAUGHT Notary Public - Notary Seal State of Missouri Commissioned for Cole County My Commission Expires: July 18, 2023 Commission Number: 15207377



Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri, Inc. d/b/a)
Spire (East) Purchased Gas Adjustment)
(PGA) Tariff Filing) **Case No. GR-2021-0127**

AFFIDAVIT OF KEENAN B. PATTERSON, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

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 *Staff Recommendation in Memorandum* form; and that the same is true and correct according to his best knowledge and belief, under penalty of perjury.


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 25th day of May, 2022.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377


Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri, Inc. d/b/a)
Spire (East) Purchased Gas Adjustment)
(PGA) Tariff Filing) **Case No. GR-2021-0127**

AFFIDAVIT OF DAVID M. SOMMERER

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW David M. Sommerer, and on his oath declares 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, under penalty of perjury.

Further the Affiant sayeth not.

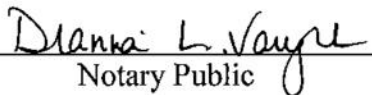


DAVID M. SOMMERER

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 25th day of May, 2022.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
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Notary Public