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Issue(s):	**Spire STL Pipeline**
Witness:	**David Yonce**
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Sponsoring Party:	**Spire Missouri, Inc.**
Case No.:	**GR-2021-0127**
Date Prepared:	**January 27, 2023**

SPIRE MISSOURI, INC.

GR-2021-0127

DIRECT TESTIMONY

OF

DAVID A. YONCE

Denotes Confidential Information

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	))	File No. GR-2021-0127

VERIFICATION OF DAVID A. YONCE

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

I, David Yonce, of lawful age, being first duly sworn, state as follows:

1. My name is David A. Yonce. I am the Managing Director of Gas Supply for Spire Missouri Inc. My business address is 700 Market St., St Louis, Missouri, 63101.

2. My direct testimony on behalf of Spire Missouri Inc. is attached to this verification.

3. I hereby swear and affirm that my answers to each question in the attached direct testimony are true and correct to the best of my knowledge, information, and belief.

David Yonce

1/27/2023
Date

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I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE BENEFIT OF THE MISSOURI PUBLIC SERVICE COMMISSION ("COMMISSION")?

A. My name is David A. Yonce, and my business address is 700 Market Street, St. Louis, Missouri 63101.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am the Managing Director of Gas Supply for Spire Missouri Inc. ("Spire Missouri" or "Company").

Q. HOW LONG HAVE YOU HELD THAT POSITION AND WHAT ARE YOUR RESPONSIBILITIES?

A. I have been in Spire Missouri's Gas Supply division since February 2022. I joined Spire Inc. in 2013 as an Analyst in the Strategy and Corporate Development department. I was then promoted to Director and worked in that group until 2018, at which point I held various positions, including Director of Gas Control, Director of Gas Operations, and Director of Workload Planning Strategy. In 2022, I moved into my current position with the Company as Managing Director of Gas Supply. As a Managing Director, I am responsible for the Company's gas supply portfolio and ensuring that natural gas is purchased and distributed through our distribution system reliably and affordably to serve our customers.

Q. WHERE DID YOU WORK BEFORE JOINING SPIRE MISSOURI?

A. After earning my undergraduate degree, I joined Edward Jones in 2008 and held various positions, where I focused on supporting Financial Advisors in meeting investor needs and

managing investments. I later transitioned to a procurement role with Anheuser-Busch InBev in 2012, where I managed contract negotiations and technology acquisition.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I graduated from Truman State University in 2008 with a Bachelor of Science in Business Administration. I later obtained my Master of Business Administration in 2014 from Washington University in St. Louis.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE COMMISSION?

A. I have not.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony speaks to the critical role Spire STL Pipeline, LLC ("Spire STL Pipeline" or the "Pipeline") plays in the Company's natural gas supply portfolio and the attendant benefits the Pipeline provides for both Spire Missouri and other Missouri natural gas customers. By speaking on these matters, my testimony supports including costs associated with Spire STL Pipeline within Spire Missouri's Purchased Gas Adjustment ("PGA") clause.

Q. DID YOU REVIEW ANYTHING BEFORE PREPARING THIS TESTIMONY?

A. In addition to Spire Missouri's tariff filings in this case, I read the Staff of the Public Service Commission's ("Staff") ACA Review Recommendation and Report, filed on May 27, 2022, in this case and relevant Spire STL Pipeline materials.

III. BACKGROUND

Q. CAN YOU EXPLAIN WHAT SPIRE STL PIPELINE IS FOR BACKGROUND PURPOSES?

A. Spire STL Pipeline is a corporate affiliate of Spire Missouri. Spire Inc. formed Spire STL Pipeline LLC in 2016 for the reasons discussed below, driven by changing natural gas supply dynamics and to provide reliable, affordable, and diverse supply to the St. Louis region. The Pipeline is designed to provide 400,000 dekatherms per day ("Dth/day") of firm transportation service, and Spire STL Pipeline has contracted 350,000 Dth/day of that transportation service to Spire Missouri over twenty years.

The Pipeline itself, also commonly referred to as "Spire STL Pipeline," became operational in 2019, and supplies almost 40% of Spire Missouri East's firm city-gate transportation capacity. It is a sixty-five-mile interstate natural gas pipeline, originating at an interconnection with the Rockies Express Pipeline ("REX") in Illinois and ending at two separate interconnections with the Spire Missouri East distribution system and the Enable Mississippi River Transmission, LLC ("MRT") pipeline in Missouri. The pipeline provides the St. Louis metropolitan area with firm access to new supplies of natural gas, improving reliability, increasing supply diversity, and accessing competitively priced and prolific reserves in the Appalachian Basin, as well as increased access to gas from the Rockies.

For reference, I'm attaching a map of Spire Missouri's eastern distribution system, including the connection to Spire STL Pipeline, as **Schedule DAY-D-1**. This Schedule also includes maps detailing the flow of natural gas in Spire Missouri's eastern distribution system with and without Spire STL Pipeline. Both maps use color coding to denote the Company's distribution system and surrounding interstate pipelines. The arrows alongside the Company's feeder system indicate flows from the pipelines, and the color of each arrow indicates the corresponding pipeline providing the pressure and supply. You can see that the map of Spire Missouri's system with the Pipeline includes arrows from Spire STL Pipeline throughout the east and west portions of the

Company's distribution system, whereas arrows from other pipelines are localized to one side or the other. This illustrates how, unlike other sources of supply that are localized to the East or West, Spire STL Pipeline provides pressure and supply throughout the entire Spire Missouri East system. The final map illustrates the impact to Spire Missouri's distribution system without Spire STL Pipeline and the three black X's represent interconnects that would no longer exist without Spire STL Pipeline.

Q. WHAT IS YOUR CONNECTION TO SPIRE STL PIPELINE?

A. Prior to my current role, I was in Spire Inc.'s Strategy and Corporate Development department where I helped Spire Inc. develop the Spire STL Pipeline, including its application for Certificates of Convenience and Necessity ("CCN") before the U.S. Federal Energy Regulatory Commission ("FERC"). I have since continued to play a supporting role within Spire Missouri regarding the contract with Spire STL Pipeline.

Q. GIVEN YOUR INVOLVEMENT WITH THE DEVELOPMENT OF SPIRE STL PIPELINE, DID YOU ALSO MAKE THE DECISION FOR THE COMPANY TO CONTRACT WITH SPIRE STL PIPELINE?

A. No. At that time, I was involved in the development of Spire STL Pipeline, but the contracting decisions were ultimately made by one of my predecessors responsible for Spire Missouri's gas supply in conjunction with the Company's regulatory and legal personnel.

Q. IS SPIRE STL PIPELINE CURRENTLY SERVING SPIRE MISSOURI?

A. Yes. Spire STL Pipeline has served Spire Missouri for the past three years and is currently operating under a permanent CCN from FERC as of December 15, 2022. It had until recently been providing service under an emergency order from FERC while legal challenges continued.

Q. WHAT CHALLENGES ARE YOU REFERRING TO?

A. I am talking about the Environmental Defense Fund's ("EDF") ongoing opposition to Spire STL Pipeline. EDF originally opposed Spire STL Pipeline's CCN Applications before FERC and has continued to attempt to obstruct it in court. After being unsuccessful at the administrative level, EDF appealed to the U.S. Court of Appeals for the District of Columbia.[1] The D.C. Appeals Court vacated Spire STL Pipeline's operational CCN in the summer of 2021 and remanded the case back to FERC for further review. The Court's decision came after the transportation agreement with Spire Missouri became effective.

Q. WHEN DID SPIRE STL PIPELINE'S PROCEEDINGS BEFORE FERC BEGIN?

A. Technically, members of the Spire STL Pipeline team had a pre-filing meeting with FERC staff on July 6, 2016. From then onward, the Pipeline was in a pre-filing process. Substantive proceedings did not start, though, until Spire STL Pipeline submitted its CCN application to FERC on January 26, 2017. After an intervention period and time for FERC's staff to audit the Pipeline's proposal, during which Spire STL Pipeline demonstrated that the pipeline met the applicable public interest and convenience standard, FERC initially approved the Pipeline's CCN on August 3, 2018. Spire STL Pipeline began construction soon thereafter and started operations the next year. Spire Missouri did not connect to the Pipeline until November 2019.

Q. AND WHAT WAS EDF'S INVOLVEMENT IN THE FERC PROCEEDINGS?

A. EDF intervened to ask the Commission to reject Spire STL Pipeline's CCN. When FERC rejected EDF's arguments, EDF petitioned the D.C. Court of Appeals in 2020. The D.C. Court of Appeals then reversed FERC's order granting the CCN on the belief that FERC failed to consider the totality of evidence. The Court's decision left Spire STL Pipeline with no authorization to serve customers leading into the winter of 2021/2022.

[1] *Envtl. Defense Fund v. Fed. Energy Reg. Comm'n*, 2 F.4th 953 (D.C. Cir. 2021).

Thankfully, FERC issued a temporary, emergency CCN on December 3, 2021, that allowed the Pipeline to continue serving the St. Louis area. Spire STL Pipeline transported natural gas under this emergency authorization until FERC reissued its initial CCN in its Order on Remand and Reissuing Certificates at the end of 2022. After adhering to the D.C. Court of Appeals' instructions to review on the entirety of the record, FERC unanimously determined that the Pipeline is needed for continued public service and that the benefits outweigh any potential negative impacts. A copy of the December 2022 FERC Order Reissuing Certificates is attached as Schedule SAW-D-3 to the direct testimony of Scott Weitzel.

IV. PAST EVALUATIONS AND INVESTIGATIONS INTO SPIRE STL PIPELINE

Q. OTHER THAN EDF'S INVOLVEMENT AT FERC, HAS ANYONE ELSE SCRUTINIZED THE SPIRE STL PIPELINE?

A. Yes. The Commission established an investigatory docket into Spire STL Pipeline (Case No. GO-2022-0022) shortly after the D.C. Court of Appeals vacated Spire STL Pipeline's FERC CCN and directed Staff to file an investigative report on Spire STL Pipeline. Throughout the nearly month-long investigation, Staff submitted numerous data requests and met with Spire Missouri personnel, including myself, several times.

Staff submitted its investigative report to the Commission on August 16, 2021, detailing Staff's conclusions. It confirmed that Spire STL Pipeline is a key supply resource for the Company. The report concluded that, "Spire Missouri cannot reasonably reconfigure its system to replace or restore former capacity, or replace reliance on Spire STL for transportation before or during the

Winter of 2021-2022."[2] Reconfiguration was infeasible because Spire STL Pipeline provides approximately one-third of Spire Missouri's transportation and on-system storage capacity for Spire Missouri's eastern service territory.[3] I am including Staff's 2021 investigation as **Schedule DAY-D-2**.

After Staff reported its findings, the Commission ordered Spire Missouri to regularly report and present relevant filings from the Company's FERC CCN applications docket (Case No. CP17-40). Staff was also directed to update its investigative report as necessary. Spire Missouri has complied with the Commission's order and continued to submit material FERC filings into the Case No. GO-2022-0022 docket. The Commissioned ordered this docket to be closed on January 25, 2023, since FERC has reissued a permanent certificate.

Q. DO YOU AGREE WITH THE CONCLUSIONS FROM STAFF'S 2021 INVESTIGATION INTO SPIRE STL PIPELINE?

A. Yes. Spire STL Pipeline provides significant benefits to Spire Missouri and those benefits cannot be replicated.

Q. HAS THE COMMISSION, ASIDE FROM ITS STAFF, EXPRESSED ANY OPINIONS REGARDING SPIRE STL PIPELINE?

A. Yes. The Commission has been actively involved in Spire STL Pipeline's CCN proceedings before FERC. Its position has been that the prudency of Spire STL Pipeline is not a FERC matter but should instead be regulated by the Commission.[4] In its words, the Commission

[2] Staff's Investigation of Spire STL Pipeline's Application at FERC for a Temporary Certificate to Operate, *In the Matter of Staff's Investigation of Spire STL Pipeline's Application at FERC for a Temp. Cert. to Operate*, GO-2022-0022 p. 3 (Aug. 16, 2021).
[3] *Id.* at 7.
[4] *Response of the Pub. Serv. Comm'n of the State of Missouri to the App. of Spire STL Pipeline LLC for a Temp. Emergency Cert., or, in the Alternative, Limited-Term Cert.*, FERC CP-17-40

"specifically declined to preapprove or pre-reject the Precedent Agreement at this time and noted that the opportunity to review the prudence of such an agreement would be in a future Actual Cost Adjustment case."[5] I am including the Commission's comments as **Schedule DAY-D-3**.

Q. DID THE COMMISSION'S COMMENTS INDICATE THAT SPIRE MISSOURI SHOULD NOT HAVE CONTRACTED WITH SPIRE STL PIPELINE?

A. The Commission appeared to be mainly focused on the adequacy of service for Spire Missouri's customers and made it clear that prudence was a future question for state regulators. The Commission explained that it would direct its Staff to review the prudency of the agreement in the applicable actual cost adjustment ("ACA") review proceeding and then make a final decision.

This docket is the "applicable ACA review proceeding," and Staff has completed its ACA Review Recommendation and Report. Staff does not recommend any disallowance for the Spire STL Pipeline costs, nor did it find that the Company's agreement with the Pipeline violates any provision of the Commission's affiliate transaction rule. I am including the public version of Staff's ACA Review Recommendation and Report Memorandum and accompanying report on the prudency of Spire STL Pipeline from Schumaker & Company ("Schumaker") as **Schedule DAY-D-4**.

Q. HAS ANYONE ELSE INVESTIGATED SPIRE STL PIPELINE SINCE THE D.C. APPELLATE DECISION?

(July 29, 2021) ("The MoPSC will review the reasonableness and prudence of Spire Missouri's actions with respect to the STL Pipeline in upcoming cases").

[5] *Motion for Leave to Answer and Answer of Mo. Pub. Serv. Comm'n to Spire's Response to Data Request at Pages 2 and 6*, FERC CP-17-40-000 (Mar. 23, 2018).

A. Yes. After the Court of Appeals vacated Spire STL Pipeline's CCN, Spire Missouri began exploring other options to secure natural gas capacity in the event that FERC did not grant an emergency CCN for the Pipeline to operate. Spire Missouri had already concluded internally that Spire STL Pipeline was the most effective resource to secure 350,000 Dth/day for the then-upcoming winter season in terms of both price and technical feasibility. However, the Company also sought the advice of two outside consultants, Concentric Energy Advisors ("Concentric") and Charles River Associates ("CRA"), to verify Spire Missouri's internal findings.

Concentric evaluated three possible replacements for Spire STL Pipeline's capacity: (1) Purchasing unsubscribed pipeline capacity on other pipelines; (2) Restoring Spire Missouri's liquid propane-peaking facilities; and (3) Relying on injections of liquefied or compressed natural gas delivered by truck. Concentric concluded that none of those options could reliably match the Pipeline's 350,000 Dth/day of natural gas capacity. Although the other capacity sources were viable as mitigation measures, they would not meet the 350,000 Dth/day capacity needed even if the Company tried all three together. Concentric also considered contracting for capacity on any available pipeline expansion, constructing a permanent liquefied natural gas ("LNG") facility, converting some customers from firm to interruptible service, implementing demand response, and setting up small-scale compressed natural gas systems behind customer meters. These options were purely hypothetical, though, and Spire Missouri had neither the necessary approvals nor rate structures for them. Concentric ultimately decided that Spire STL Pipeline was the only long-term solution for capacity among its reviewed choices. I am including Concentric's report with my testimony as **Schedule DAY-D-5**.

Q. HOW DID CRA ANALYZE SPIRE STL PIPELINE?

CRA's approach was like Concentric's. It analyzed four alternative capacity sources: (1) Reliance on compressed natural gas; (2) Accessing capacity on the MRT East Line using the Line 880 Pipeline ("Line 880"); (3) Restoring Spire Missouri's liquid propane-peaking facilities; and (4) Contracting for LNG from third parties. CRA's analysis quickly disregarded compressed natural gas as an alternative because it generates half of the energy content of LNG by volume and was therefore a subpar option. CRA then determined that the remaining possibilities were riskier from an operational, safety, supply, and environmental perspective after reviewing potential liabilities and risks. This is to say that Line 880, liquid propane-peaking facilities, and LNG transported via trucks all presented more intense environmental impacts and greater risks. Line 880 and trucked LNG, in particular, presented unacceptable risks for public safety compared to Spire STL Pipeline.

Line 880 is a sixty-year-old, seven-mile long and twenty-inch diameter pipeline system west of Columbia Bottoms. It connects Spire Missouri's Lange Natural Gas Storage Field ("Lange") to the Chain of Rocks city-gate. Line 880 was also constructed using electric resistance welding. This process lines a pipe by joining metal through electrical resistance heating and pressure and has been documented by the federal Office of Pipeline Safety to be susceptible to leaks and structural instability since the late 1980s. CRA observed that a portion of Line 880 ruptured once before. Although Spire Missouri replaced the ruptured pipe, CRA acknowledged concern that the potential exists for another incident if the line remained in transmission service. CRA additionally noted that using Line 880 to access MRT would necessitate a new interconnection at the Chain of Rocks city-gate. Given the additional investment that would be needed to use Line 880, the age of the pipe, and the associated integrity risks, CRA did not recommend it as an alternative to Spire STL Pipeline.

CRA next analyzed the prospect of Spire Missouri restoring its liquid propane-peaking facilities. Spire Missouri has two injection sites for liquid propane: Lange in the northern St. Louis area and Catalan to the south. Each facility was designed to support 80,000 Dth/day of supply, but actual production fluctuated if gas flow was less than optimal. Resuming operations at Lange and Catalan presented numerous technical issues, as outlined by CRA, and would likely only provide between 53,718 and 59,267 Dth/day of incremental capacity.

CRA determined that reestablishing the propane facilities would present more risks relative to the Spire STL Pipeline. Furthermore, CRA explained that before Spire Missouri could utilize the propane alternative, the vaporization facilities would need to be refurbished and tested, the propane supply line would also need to be refurbished and tested, propane would need to be acquired, and Company staff would need to be retrained. CRA ultimately determined that the additional risks and prerequisite actions made propane an unreasonable option.

The last option analyzed by CRA, trucking LNG, was not viable because it presented too much risk for too little reward. The proposal Spire Missouri considered was to truck LNG from Indiana to a micro-LNG vaporization facility in Missouri. This design would produce only 10,000 Dth/day and was susceptible to traffic delays, accidents, and truck unavailability. Operating the peaking facility would also require staff availability 24/7 to oversee LNG vaporization. Given these challenges, CRA concluded that the LNG option was too risky relative to Spire STL Pipeline. I am attaching CRA's report and findings on supply alternatives as **Schedule DAY-D-6**.

Q. HAVE ANY OTHER THIRD PARTIES EVALUATED SPIRE STL PIPELINE?

A. Yes. As part of its decision-making process, Spire Missouri determined that contracting with Spire STL Pipeline would reduce emissions because the Company would be able to cut its reliance on other sources like propane and LNG trucking. Spire Missouri has also reduced

emissions by using more Appalachian basin natural gas, which has a lower carbon intensity than other basins. The potential environmental impact of Spire STL Pipeline was an important consideration because of the Company's commitment to long-term sustainability.

The Company then commissioned Trinity Consultants ("Trinity") to verify the Company's emission calculations in November 2021. Trinity reviewed the Company's internal figures and agreed that Spire STL Pipeline allows the Company to maintain current operations while decreasing overall emissions, including greenhouse gases and Clean Air Act criteria pollutants. I am including Trinity's findings with my testimony as **Schedule DAY-D-7**.

Q. HOW GREAT ARE SPIRE STL PIPELINE'S EMISSIONS?

A. The Pipeline's emissions were 1,365.5 tons of CO_2e in 2021 and 2,817.4 tons the year before. Both were far less than the 11,798 tons per year of CO_2e that were estimated in its 2017 environmental assessment. FERC verified the Pipeline's emissions in its Order on Remand and Reissuing Certificates included with Scott Weitzel's direct testimony.

Q. PUTTING ASIDE THE OPINIONS OF STAFF OR OTHER PARTIES, HAVE YOU DONE ANY COST ANALYSIS OF SPIRE STL PIPLINE?

A. I helped prepare a price comparison analysis for FERC before Spire STL Pipeline was fully completed. As part of Spire STL Pipeline's CCN approval process, FERC's Office of Energy Projects ("OEP") asked Spire STL Pipeline to prepare cost projections for the price of natural gas over the same twenty-year period that the Pipeline would be serving Spire Missouri. OEP specified that it was interested in scenarios where Spire STL Pipeline provided the full 350,000 Dth/day as compared to only 160,000 Dth/day as well as the relative cost of delivering gas to Spire Missouri through MRT and the MoGas Pipeline, LLC ("MoGas"). I, in partnership with Justin Powers, Spire Missouri's Director of Gas Supply, and other members of Spire Missouri's team responded

to OEP's data request on March 13, 2018. I am including that response with my testimony as **Schedule DAY-D-8**.

Our overall conclusion at the time the analysis was performed was that the cost for natural gas over the twenty-year period was lowest overall under the scenario where Spire STL Pipeline met its contract obligation to provide 350,000 Dth/day of natural gas with an average delivered cost of $5.59/Dth and total cost of approximately $443 million for Spire Missouri. The other options all produced higher average delivered gas costs and significantly more expenses for Spire Missouri. See the table below for a breakdown of the price comparison analysis results:

Twenty Year Average Cost Comparison

Scenario		Delivered Cost (Dth)	Total Cost for Spire Missouri
Base	350,000 Dth Through Spire STL Pipeline	$5.59	$443,200,000
1	160,000 Dth Through Spire STL Pipeline	$5.98	$474,200,000
2	MRT Main Line Expansion	$5.89	$467,400,000
3	MRT East Line Expansion	$5.88	$466,200,000
4	MoGas Expansion	$6.05	$479,600,000

The Base scenario was predicated on Spire STL Pipeline providing gas under the then negotiated rate between Spire STL Pipeline and Spire Missouri and any rate changes that may happen on MRT that would impact Spire Missouri. The considerations for Scenario 1 were similar except we drastically reduced the amount of natural gas coming off Spire STL Pipeline to simulate the capacity from propane facilities Spire Missouri expected to retire. Scenarios 2 through 4 contemplated Spire Missouri replacing the 160,000 Dth with potential future expansions of MRT Main Line, MRT East Line, or MoGas. However, when we conducted this price analysis, only 20,000 Dth/day of capacity was actually available for purchase on MoGas. We therefore assumed

in each scenario that Spire Missouri would secure the remaining 140,000 Dth through a hypothetical pipeline expansion. In each MRT scenario, natural gas needed to be delivered near Spire Missouri's Lange site.

Our analysis helps demonstrate that the agreement with Spire STL Pipeline is the most cost-effective for the Company and customers compared to what supply options were available at the time the decision was made. The ultimate conclusion of the price comparison analysis has only been confirmed or supported by subsequent analyses from Concentric, CRA, Trinity, and Staff.

V. SPIRE STL PIPELINE'S SERVICE TO SPIRE MISSOURI

Q. LET US TALK ABOUT THE CONTRACT ITSELF. CAN YOU SUMMARIZE THE TERMS OF THE AGREEMENT BETWEEN SPIRE STL PIPELINE AND SPIRE MISSOURI?

A. The Company and Spire STL Pipeline have agreed to a twenty-year firm transportation service agreement ending in 2039 with terms for potential extensions. The contract requires Spire STL Pipeline to meet a maximum delivery obligation of 350,000 Dth/day. The Commission may review the other terms of the Company's transportation agreement with Spire STL Pipeline, including the precedent agreement, in the attached **Schedule DAY-D-9**.

Q. ARE THERE ANY CUSTOMER PROTECTIONS IN THE AGREEMENT WITH SPIRE STL PIPELINE?

A. Yes. Spire Missouri secured several customer protections during negotiations for a precedent agreement with the Pipeline in 2017, the key one being the rate cap. The Company will pay no more than twenty-five cents ($0.25) per MMBtu for transportation service on the Pipeline, which is a customer protection for two primary reasons. First, it keeps costs low for customers. As Scott Weitzel explains in his direct testimony, this price is below both what Spire Missouri could

acquire on the open market and what FERC has authorized Spire STL Pipeline to charge. Second, this price cap ensured that Spire Missouri customers would not be subject to a significant increase in rate due to cost overruns during the construction of the Pipeline.

Q. WHAT IF THE CONSTRUCTION COSTS WERE LESS THAN EXPECTED?

A. If the construction costs were significantly lower than anticipated, then the Company was positioned to capitalize on those savings for customers. The twenty-five cents ($0.25) per MMBtu rate reflected initial construction estimates, and Spire Missouri would have paid less if the actual cost to construct the Pipeline resulted in a maximum recourse rate lower than Spire Missouri's negotiated rate. The rate was a ceiling, not a floor.

Q. WHAT OTHER CUSTOMER PROTECTIONS ARE IN THE AGREEMENT?

A. Another notable customer protection is the "Foundation Shipper" provision in the final transportation agreement. Under the provision, Spire Missouri has the unilateral right to extend the contract with Spire STL Pipeline for up to two five-year terms and the ability to secure "foundation" or "anchor shipper" status should Spire STL Pipeline expand its capacity. Being able to extend the agreement provides the Company with more capacity certainty should supplies fluctuate in the future. Finally, the Company can lower its overall contract capacity by reducing its committed maximum daily transportation quantity should one of Spire Missouri's firm customers leave regulated service to connect directly to Spire STL Pipeline.

Q. WHAT ROLE DOES SPIRE STL PIPELINE PLAY IN SPIRE MISSOURI'S PORTFOLIO?

A. Spire STL Pipeline delivers approximately 189,400 Dth/day of natural gas to the eastern city-gates throughout the Spire Missouri East territory. The Company also indirectly receives about 90,600 Dth/day of Spire STL Pipeline supply through an interconnection with MoGas. This

delivery creates more pressure on MoGas' system, which has more than doubled the capacity Spire Missouri can acquire from MoGas. This capacity is now available for the approximately 110,000 natural gas customers in St. Charles County, Missouri, on the western side of the Spire Missouri East service territory. Spire STL Pipeline similarly sends the remaining 70,000 Dth/day, of 350,000 Dth/day in total, through MRT for delivery to the southern part of Spire Missouri's East service territory.

Q. DO YOU HAVE ANY REASON TO BELIEVE THAT SUPPLY FROM SPIRE STL PIPELINE COULD NOT BE PROVIDED BY ANOTHER NATURAL GAS PIPELINE?

A. Although the Company could, and has the engineering capability to, replace Spire STL Pipeline, that hypothetical would have to be addressed by building another pipeline in order to obtain the same pricing and service benefits that Spire STL Pipeline provides. It would not be feasible to proceed without a replacement pipeline because, over the past three years since the Company connected to the Pipeline, Spire Missouri has made changes to its supply portfolio. MRT has also recommitted capacity to other customers after its contracts with the Company expired. Meanwhile, the pressure requirements to meet customer demand have increased over recent years as the St. Louis-area populations continue to shift westward within the Spire Missouri East service territory. We simply are not in a world where the Company could operate without a replacement pipeline due to changing supply-side resources combined with the ever-growing need to maintain adequate pressure to serve the load shifts within the Spire Missouri East service territory.

Also, in addition to the concerns raised by Concentric and CRA, recent events make me doubt that an alternative to Spire STL Pipeline's capacity could be readily secured to meet peak demand or match the same contract price. Recent winters have been particularly harsh, especially during 2021 with Winter Storm Uri. During extremely cold weather events like Uri, upstream

pipelines have historically been unable to deliver natural gas into MRT's East Line, which reduces the amount of pressure available to transit natural gas through MRT. This lack of reliability during the winter months can negatively impact customer service when it is most needed. My understanding is that the Trunkline Gas Company, LLC ("Trunkline") has begun work to improve its connection to MRT to increase available pressure, but the effectiveness of those efforts on meeting peak winter service requirements is currently unknown to me.

Q. IS WINTER STORM URI INCLUDED IN THE ACA PERIOD FOR THIS CASE?

A. No. The review period for this case is November 2019 through October 2020. Winter Storm Uri occurred in February 2021.

Q. THEN WHY IS THAT DISCUSSION RELEVANT?

A. The prudency of Spire Missouri's contract with Spire STL Pipeline is a question for the Commission because some costs associated with the contract are included in the 2019-2020 ACA period. To properly evaluate the decision to contract with Spire STL Pipeline, I believe that the Commission should be able to consider all relevant factors, including any success outside the ACA period. The evaluation of the prudency of Spire STL Pipeline should consider more than just a price calculation from winter 2019 or any other period because it was a long-term portfolio decision to better position Spire Missouri for events like Winter Storm Uri.

Q. COULD SPIRE MISSOURI STILL REPLACE SPIRE STL PIPELINE'S SUPPLY WITH ONE OF THE OTHER PIPELINES THAT SERVICE THE ST. LOUIS AREA?

A. No. Removing Spire STL Pipeline from the Company's portfolio will not erase the need for new pipeline capacity in the Spire Missouri East territory. Customer demand for natural gas is relatively flat, but population centers in the St. Louis-metro area are continuing to expand westward. As the State moves and grows, so does the demand on Spire Missouri's system,

meaning that the Pipeline's added pressure is still needed to meet demand. Removing Spire STL Pipeline would only present more risks and challenges for Spire Missouri to meet shifting demand.

Moreover, due in part to the supply issues explained by Concentric and CRA, Spire STL Pipeline was the best available resource for Spire Missouri. This does not mean Spire Missouri is unduly dependent on Spire STL Pipeline, but it does mean that the Company selected the best choice available to serve customers and itself over the ACA period. For context, MRT remains the largest single transportation path to the Spire Missouri East system, but our overall supply and transportation portfolio has been substantially diversified through service provided by Spire STL Pipeline.

Q. SO NO OTHER SUPPLY OPTIONS ARE AVAILABLE?

A. The issue is that there are limitations to how much additional capacity Spire Missouri could acquire without the Pipeline. For instance, to prepare for the 2021 winter season after the D.C. Circuit vacated Spire STL Pipeline's CCN, but before FERC granted the emergency CCN, Spire Missouri contracted for additional capacity to make up for the loss of the Pipeline. Securing what capacity was available on MRT's Main Line and MoGas amounted to only 10,568 Dth/day of capacity (10,000 Dth/day from MoGas and 568 Dth/day from MRT Main Line). This did not come anywhere close to meeting Spire STL Pipeline's capacity.

When Spire Missouri sought out additional capacity from other pipeline systems that serve its city-gates in the summer of 2021, it unfortunately became apparent that one system alone cannot replace Spire STL Pipeline's capacity. The MoGas Pipeline system had 10,000 Dth/day of capacity available at Spire Missouri's city-gate. MRT's Main Line had 568 Dth/day and MRT's East Line had between 135,000 to 181,500 Dth/day. Trunkline, upstream of MRT, had between 100,000 to 180,000 Dth/day of capacity available, and the Natural Gas Pipeline Company of America, LLC

("NGPL"), upstream of MRT, had only 17 to 34,109 Dth/day. It is important to note however that neither Trunkline nor NGPL would provide a pressure commitment to Spire Missouri, which is relevant given the pressure concerns the Company had about the ability of the upstream pipelines to deliver reliably to MRT's East Line. I am recounting these numbers to emphasize that 350,000 Dth/day cannot be readily replaced at the drop of a hat from other pipelines in the region or otherwise.

Q. WHAT OTHER SUPPLY AND CAPACITY OPTIONS HAS THE COMPANY EXPLORED?

A. The Company has evaluated several other options since the D.C. Appeals Court vacated Spire STL Pipeline's CCN as part of its contingency planning. Some examples of the other resources we considered include:

- Coordinating with another corporate affiliate, Spire NGL, to repair a retired Laclede Pipeline Company system to transmit liquid propane to the Catalan vaporization facility. Vaporized propane can be injected into a gas distribution to maintain pressure and supplement peak capacity. Spire NGL pressure tested a retired transfer line to ensure that the old connection would be safe, but employing Catalan has the same shortcomings I described earlier with regards to CRA's evaluation of reinstating the Company's propane facilities. The Company would need to modernize the vaporization facilities, re-train staff, and acquire the necessary air permits for the vaporization equipment. We would also have to contend with the need to coordinate shipments with Conoco Phillips because it uses a section of the same pipeline connected to Catalan for butane deliveries. The Company would therefore have to time propane shipments based on Conoco Phillips' availability and clear the transmission line of any remaining butane before shipment. In addition to

limitations, the Company did not pursue this option because it was estimated to only add between 53,718 and 59,267 Dth/day of incremental capacity;

- Trucking in LNG for peaking. The Company had an option, through November 2021, to enter into an agreement which would provide up to 10,000 Dth/day. This supply source would rely on four-hour truck shipments from Indiana with relatively minor capacity benefits; and
- Establishing a new, direct connection to MRT. The Company explored the possibility of constructing a new interconnection at the Chain of Rocks city-gate where MRT and Spire Missouri's systems intersect. I am hesitant to support this option because the historic pressure challenges that upstream pipelines have had delivering supply into MRT. Establishing a new connection would also take nine to twelve months to complete, require further investments in Line 880, and be situated in a flood plain. One reason that the Company abandoned Chain of Rocks was because of its history of flooding.

Q. WHAT DO YOU MEAN BY "PRESSURE CHALLENGES"?

A. When contracting for supply from a pipeline, it is essential that the supply from an upstream pipeline can reliably deliver into the downstream pipeline. Unfortunately, the upstream pipelines serving MRT have frequently been unable to deliver into MRT due to not having high enough pressure at the delivery point in order for the gas from those pipelines to enter MRT's system. So, although MRT East can deliver all natural gas molecules that enter its pipeline, the supply has not always matched the total that we needed during cold snaps when upstream demand increased and pressures drop on those lines.

Q. DO ANY OTHER NATURAL GAS PROVIDERS RELY ON SPIRE STL PIPELINE?

A. Yes. From observing Spire STL Pipeline's proceedings before FERC, I have seen other natural gas suppliers express their support for Spire STL Pipeline. Symmetry Energy Solutions, a local natural gas marketer, intervened in the Pipeline's CCN application proceeding before FERC specifically to express its support for the project. Spire STL Pipeline's capacity ended up being crucial for Symmetry's ability to maintain service for its customers during Winter Storm Uri. As Symmetry's comments described, it lost 25,000 MMBtu of supply on MRT East during the Storm because of the same insufficient upstream pressure that I described in my last answer.

MoGas has similarly been involved in FERC proceedings to explain the practical implications of denying a CCN for the Pipeline. Doing so would effectively force MoGas to revert to its pre-December 2020 operating configuration, but without the added pressure required to meet demand west of St. Louis. Interconnecting with Spire STL Pipeline allowed MoGas to avoid the cost of constructing a $100 million, fifty-mile loop that would be needed to continue serving those communities. This fifty-mile loop would otherwise take several years to develop and construct, delaying service for the region in the meantime. I am including example filings from Symmetry and MoGas with my testimony as **Schedule DAY-D-10**.

VI. PRESSURE AND EMERGENCY PREPAREDNESS BENEFITS OF SPIRE STL PIPELINE

Q. HOW ELSE DOES SPIRE STL PIPELINE IMPROVE SPIRE MISSOURI'S ABILITY TO SERVE CUSTOMERS?

A. It improves service reliability by adding pressure on the Spire Missouri East system. Gas travels through a pipe based on pressure, and it is always seeking to travel to the lowest pressure state. Increasing pressure on a pipeline system can better enable an operator to redirect supplies when needed. Conversely, if the pressure in a pipeline system drops due to high use or insufficient

pressure upstream, it can result in an inability to serve the downstream demand. Spire STL Pipeline contributes significant pressure benefits to Spire Missouri's distribution system, in particular, through its interconnection with MoGas west of St. Louis. These benefits ensure that the Company is always able to respond to increasing or shifting customer demand. Furthermore, the higher pressure from Spire STL Pipeline has allowed Spire Missouri to rely on direct injection at its Lange underground natural gas storage facility, reducing its reliance on compression for injections.

Q. IS THE ADDED PRESSURE NECESSARY TO CONTINUING SERVING CUSTOMERS?

A. Yes. Spire STL Pipeline's added pressure is essential for both the Company and MoGas to serve customers in the western St. Louis area because of population shifts in the intervening years since the late 2010s. As I touched upon earlier, even though the St. Louis-area population overall has remained relatively constant over the last decade, communities have moved westward into the counties surrounding St. Louis. Because the Company cannot readily reorganize its entire distribution system, it must have more pressure to send natural gas to the growing portions of the Spire Missouri East territory. If the Pipeline somehow became unavailable, the Company would have to find a new way to deliver high pressure supply to the western and southwestern side of the Spire Missouri East service territory. Any such project would result in new construction, take years to complete, and would likely be more expensive than Spire STL Pipeline.

Q. HOW DID SPIRE MISSOURI GET PRESSURE TO SERVE THE WESTERN SIDE OF SPIRE MISSOURI EAST BEFORE THE PIPELINE?

A. The Company has taken several different strategies to meet its pressure needs on the western portion of the Spire Missouri East service territory, but the need has continued to increase over time and that trend is expected to continue. The Company initially contracted with Southern

Star to transmit natural gas from Lone Jack, Missouri to St. Charles, Missouri twenty-five years ago through a repurposed eight-inch petroleum pipeline. That pipeline is still running, but it only provides 30,300 Dth/day at peak capacity.

Connecting to MoGas in 1991 was crucial to establishing additional supply to serve St. Charles County's growing population. In just a little over a decade, the County had grown almost 148% from 1980 to 1990, from 144,000 residents to 212,000. Population growth in St. Charles County has only continued with recent trends reflecting people relocating from St. Louis City and North St. Louis County. By 2020, the population of St. Charles County had nearly doubled again, growing to 405,000 residents. Despite its success, MoGas has only ever been able to contribute around 63,000 Dth/day of capacity by itself. That cannot replace the capacity from Spire STL Pipeline or the additional pressure and supply MoGas can now leverage with its own interconnection to the Pipeline.

Q. IF THOSE OPTIONS CANNOT MATCH THE SUPPLY THAT SPIRE STL PIPELINE PROVIDES, HOW ELSE HAS THE COMPANY SECURED PRESSURE FOR THE ST. CHARLES COUNTY AREA?

A. The Company has had to shift smaller amounts of supply throughout its distribution system when available. Most movement was between St. Charles, Missouri and Wentzville, Missouri. Even with assistance from MoGas though, Spire Missouri consistently experienced significant pressure drops before connecting to Spire STL Pipeline.

Q. IS THERE A PARTICULAR DROP IN PRESSURE THAT YOU CAN IDENTIFY AS AN EXAMPLE?

A. Yes. In late January of 2019, after we had several successive days of near to below freezing temperatures, customer demand combined with flowing supplies caused the pressure around

Wentzville, Missouri to plummet to less than 87 pounds per square inch – gauge ("psig"). Temperatures around 32 degrees Fahrenheit are not even unusual for Missouri in January, and yet the coinciding demand for gas heating was enough to significantly lower the system pressure.

Let us contrast this 2019 episode with what happened around the same time of year in 2021. This was during Winter Storm Uri, after Spire STL Pipeline connected to the Company's distribution system. The temperatures in February 2021 were much colder than in 2019. The Commission is no doubt aware of how powerful Winter Storm Uri was. And yet, despite being colder and more extreme, Spire Missouri actually had *more* pressure available in 2021.

Spire Missouri's former Vice President of Gas Supply and General Manager for the Spire Missouri East territory, George Godat, explained all of this to FERC in an affidavit in support of Spire STL Pipeline's request for a new permanent CCN. I am including Mr. Godat's affidavit with my testimony as **Schedule DAY-D-11.** As he put it:

> The data are from 8 a.m. on the two days I mentioned, approximately two years apart – the first, January 30, 2019. Of particular significance for this discussion are the pressures shown for three points on the line serving St. Charles County, at South Point, Wentzville and Terra & Drug, on Spire Missouri's 300-pound distribution system. The gas day average temperature on that day was 4 degrees Fahrenheit, preceded by three days whose gas day average temperatures were 33, 22 and 12 degrees Fahrenheit, respectively. The second chart shows the pressures for the same points, on February 15, 2021, when the gas day average temperature was 2 degrees Fahrenheit, preceded by three days whose gas day average temperatures were 8, 5 and 3 degrees Fahrenheit, respectively – i.e., both the gas day average temperature on the 2021 date and the three-day run-up to that date were significantly colder than

we experienced on January 30, 2019. Yet, the pressures experienced at those three points were far higher in 2021, as shown in the chart below:

Points	South Point	Wentzville	Terra & Drug
Pressure January 30, 2019	81.67 psig	86.71 psig	67.85 psig
Pressure February 15, 2021	222.24 psig	136.45 psig	130.16 psig

Both winter days were preceded by three days of extended freezing temperatures. Customer demand was also higher on both days. And yet, pressure on the Company's system was better during the more extreme winter days in February 2021 because Spire STL Pipeline was providing added pressure. It is precisely because Spire Missouri had greater pressure available that the St. Louis area did not experience outages during Winter Storm Uri.

Q. WHAT ELSE COULD EXPLAIN THE DIFFERENCES IN PRESSURE BETWEEN THE TWO WINTER DAYS?

A. Nothing. The higher pressure is solely a product of interconnecting with Spire STL Pipeline. The Company had previously only been able to secure 93,100 Dth/day of added capacity on the western portion of Spire Missouri East, with 30,300 Dth/day coming from Southern Star and MoGas supplying the rest. But for the Pipeline, the 300-pound feeder line would have experienced pressures at, if not below, 2019 levels.

Q. DOES THE PIPELINE'S HIGHER PRESSURE BENEFIT THE REST OF THE SPIRE MISSOURI EAST DISTRIBUTION SYSTEMS?

A. Definitely, from both a quantity and quality standpoint. In terms of quantity, I have already seen improvements to Spire Missouri's pressures throughout its system because of the Pipeline's added contributions. The Pipeline's pressure will continue to be a key component of safe and

reliable service, and Spire Missouri would need to find another pressure and supply source if Spire STL Pipeline was permanently unavailable.

From a quality standpoint, the Pipeline does not just supply high pressure. It provides high pressure *without* any needed compression. This is critical for why the Pipeline is the best cost, and most environmentally sustainable, option.

Q. ARE THERE ANY OTHER NON-PRICE BENEFITS OF THE PIPELINE THAT PARTIES SHOULD CONSIDER?

A. Yes. The Pipeline is an emergency preparedness tool for the Company in the event of a natural disaster. We have the example of Winter Storm Uri to show that Spire STL Pipeline has been key to maintaining safe and adequate service in the region. I have already discussed Uri in my testimony, so I will not repeat myself here. I will just say that I am grateful we were so successful given Uri's impact and can only think that Spire STL Pipeline may be even more crucial during another extreme winter storm or other natural disaster.

Q. WHAT OTHER KIND OF NATURAL DISASTER ARE YOU REFERRING TO?

A. An earthquake would be the most likely disaster, after a winter storm or similar weather event, that we could experience in Missouri. The second most seismically active area east of the Rocky Mountains is the New Madrid Seismic Zone. The Zone is a 150-mile area where tectonic plates meet in Missouri, Illinois, Kentucky, Arkansas, and Tennessee. The most active portion covers the Missouri boot heel and extends into Arkansas and Tennessee, generally following the channel carved by the Mississippi River.

You may note that by closely following the Mississippi River, the MRT Mainline coincidentally crosses the most active part of the New Madrid Seismic Zone. MRT has several parallel lines available to prevent service disruptions, but it is not unimaginable to foresee a larger

earthquake disrupting service on all of those lines. If that occurred, and Spire STL Pipeline was not operating, Spire Missouri would lose the vast majority of its supply. For reference, before Spire Missouri contracted with Spire STL Pipeline, MRT was contracted to provide roughly 88% of Spire Missouri East's total flowing supply.

Spire STL Pipeline, on the other hand, does not cross the New Madrid Seismic Zone and is therefore far less likely to be impacted by an earthquake. This situation means that Spire Missouri is better prepared for potential disasters by contracting with Spire STL Pipeline because it has a more diverse supply portfolio. That alone is a key customer benefit.

Q. HOW LIKELY IS A DISASTEROUS EARTHQUAKE IN THE NEW MADRID SEISMIC ZONE?

A. I am not a geologist, but the U.S. Geological Survey estimates that there is a 7% to 10% chance of another earthquake similar to the 1811-1812 event occurring sometime in the next fifty years. The 1811-1812 New Madrid series of earthquakes started in December 1811, with aftershocks lasting until March 16, 1812. Some of the earthquakes were felt more than a thousand miles away and ranged in intensity between magnitudes of 6.5 and 8.0.

I want to stress, though, that this question presents the wrong framework for evaluating risk in this context. The question is not "whether or not an earthquake is likely." The question is, whether or not we are prepared for a similarly massive seismic event. The chance for a major earthquake in a given year may be small, but if it happens, and we are not prepared, people will understandably accuse the Company of being imprudent. Especially if service outages continued for an extended period. If you agree it is prudent for utilities to prepare for catastrophe scenarios, then I struggle to see how one can argue that it is imprudent to take precautionary measures, such as diversifying the geography of important transportation paths into the service territory.

We should not forget that a 4.0 magnitude earthquake occurred just five miles from the MRT Mainline on November 17, 2021. **Schedule DAY-D-12** included with my testimony is a public report on this most recent event from the Central United States Earthquake Consortium.

Q. GIVEN THE LIKELY STRUCTURAL DAMAGE THAT WOULD OCCUR IN ST. LOUIS IN THE EVENT THAT AN 1812-LEVEL EARTHQUAKE HAPPENS AGAIN, WOULD THE COMPANY REALLY NEED TO WORRY ABOUT CONTINUING TO SERVE CUSTOMERS?

A. Yes. Even though the demand for natural gas could drop if a major earthquake impacted the St. Louis region because of the resulting damage to customer buildings and Company facilities, a more focused seismic event could still occur south of St. Louis. It is not unimaginable to see a scenario where an earthquake in the New Madrid Seismic Zone disrupts supply on MRT but leaves St. Louis largely unscathed. Spire STL Pipeline ensures that the Company is best positioned to meet peak demand in such a scenario.

VII. CONCLUSION

Q. BASED ON WHAT YOU HAVE PREVIOUSLY STATED, WHAT IS YOUR OPINION OF ADDRESSING SPIRE STL PIPELINE-RELATED COSTS THROUGH THE PGA?

A. That it is proper for the Commission to include the purchased natural gas costs associated with Spire STL Pipeline within the Company's PGA and that these natural gas costs should be accounted for in this ACA rate change. The natural gas purchased through Spire STL Pipeline was necessary to serve Spire Missouri's customers over the 2019-2020 ACA period and is properly supported. As I have explained in my testimony:

- Spire STL Pipeline supplied the natural gas per a 2017 precedent agreement with several protections for customers, including a rate cap that is below the Pipeline's FERC-authorized rate;
- The 350,000 Dth/day supply from Spire STL Pipeline cannot be replicated from other resources without additional risk and potentially significant added costs;
- Justin Powers and I conducted a price comparison analysis of Spire STL Pipeline and other supply options in 2018. Our results show that the 350,000 Dth/day transportation agreement produces the lowest cost for Spire Missouri and its customers;
- Numerous other parties, including FERC, Staff, Schumaker, Concentric, CRA, and Trinity, have independently evaluated Spire STL Pipeline. All have produced findings that corroborate Spire Missouri's conclusion that the Pipeline was advantageous for the Company and customers;
- The contract with Spire STL Pipeline enhances the relationship Spire Missouri already had with MoGas and provides significant benefits to the western portion of Spire Missouri's eastern service territory;
- The Company now has significant access to the prolific Appalachian basins; and
- Spire STL Pipeline contributes needed pressure onto Spire Missouri's distribution system and better prepares the Company in the event of extraordinarily inclement weather or natural disasters.

For all of these reasons, I believe that the Company's decision to procure natural gas from Spire STL Pipeline, and the firm transportation agreement reflecting that decision, are prudent and reasonable.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.