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Spire STL Pipeline LLC
700 Market Street
St. Louis, Missouri 63101

March 13, 2018

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington DC 20426

Re: Spire STL Pipeline LLC
Docket Nos. CP17-40-000 and 001
Response to Data Request

CONTAINS PRIVILEGED AND CONFIDENTIAL INFORMATION

Dear Secretary Bose:

On January 26, 2017, as amended on April 21, 2017, Spire STL Pipeline LLC ("Spire") filed its Application for Certificates of Public Convenience and Necessity seeking authority to construct, own, and operate the Spire STL Pipeline Project ("Project"). By letter dated February 21, 2018, the Office of Energy Projects served on Spire a data request to assist staff's analysis of the Project, with responses requested within 20 days of the data request. Spire respectfully submits a complete response to the February 21 data request.

One of the exhibits to the response to Data Request 1 submitted herewith includes proprietary cost projection data that Spire Missouri Inc. is contractually required to maintain in confidence. Accordingly, Spire requests treatment of that material as Privileged and Confidential, and it is marked **"CUI//PRIV CONTAINS PRIVILEGED AND CONFIDENTIAL INFORMATION – DO NOT RELEASE."** Spire is providing a public version of the response with the Privileged and Confidential material redacted.

Questions pertaining to the Privileged and Confidential material submitted herewith should be submitted to:

David P. Abernathy
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Please contact the undersigned if you have any questions regarding this matter.

Respectfully submitted,

Schedule DAY-D-8

Scott Jaskowiak

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cc: All Parties on Service List
Mr. Howard J. Wheeler, Project Manager, Division of Pipeline Certificates, Federal Energy Regulatory Commission Office of Energy Projects

OEP/DPC/CB-1
Spire STL Pipeline LLC
Docket Nos. CP17-40-000 and CP17-40-001
§ 375.308(x)(3)
Responses of Spire STL Pipeline LLC
March 13, 2018

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

Introductory Statement

Spire STL Pipeline LLC ("Spire") responds to the Federal Energy Regulatory Commission ("FERC" or "Commission") Staff's specific data requests in the sections that follow and offers the following introductory comments.

Although the Commission's data requests are directed to Spire, the information sought is largely concerned with the needs, historical resources, cost impacts, and alternatives considered by Spire Missouri Inc. ("Spire Missouri"), Spire's foundation shipper (and the local distribution company ("LDC") formerly known as Laclede Gas Company). Accordingly, these data responses were prepared jointly by Spire and Spire Missouri, and identifying respondent information is provided at the conclusion of each response.

Executive Summary

Spire and Spire Missouri have relied on longstanding Commission precedent and policy guidance and devoted substantial resources to developing this project and achieving the result needed by Spire Missouri – a short new pipeline with a direct route to the Rockies Express Pipeline LLC ("REX") and its economical access to diverse gas supply sources. Those efforts began many years before the commencement of the Pre-Filing Process at the Commission in July 2016. As discussed below, Spire explored many different configurations and opportunities to partner in developing a pipeline project, including a potential partnership with the company that is now its chief opponent, Enable Mississippi River Transmission, LLC ("MRT").

Spire's adherence to the Commission's certificate policy process and engagement with all affected stakeholders are illustrated in the relatively few comments from affected landowners and the positive Environmental Assessment ("EA") issued by Commission Staff, with cooperating agency support from the U.S. Army Corps of Engineers and the Illinois Department of Agriculture. The EA concluded that "if Spire constructs and operates facilities in accordance with its application and supplements and our recommended mitigation measures, approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment" and recommended that the Commission's certificate order "contain a finding of no significant impact[.]"[1]

Spire and Spire Missouri have demonstrated at length in this proceeding Spire Missouri's need for the new pipeline and the substantial benefits that will flow to Spire Missouri's LDC system and its customers. These benefits vastly outweigh, under any balancing analysis, the speculative risk of cost shifting to captive customers of MRT, on which pipeline system Spire

[1] EA at 161.

Missouri will remain the largest customer.[2] As discussed below,[3] Spire Missouri recently renegotiated its commitment for capacity on MoGas Pipeline, LLC ("MoGas") and re-committed to a long-term agreement with no reduction in capacity, so the introduction of the Spire pipeline will not result in any stranding of capacity on MoGas. Spire has fully addressed the concerns of the Missouri Public Service Commission ("MPSC") and Ameren Services Company ("Ameren") regarding potential cost-shifting and shown those costs to be speculative, insignificant, and outweighed by the benefits of this new pipeline to the region, *including to MRT and its captive shippers*.

The concerns of MRT are a different matter. MRT's behavior throughout this proceeding and its attacks on the entity that has been, and will continue to be, its largest customer are baffling. Spire can only surmise that MRT, having spurned the opportunity to be a participant in the Spire pipeline project, has a competing business plan. In Spire's view, MRT has abused the regulatory process in an attempt to eliminate competitive alternatives to its own dominant market position in the St. Louis region. The Commission should not allow such anticompetitive tactics.

Project Development Process and Opportunities for MRT

The Spire pipeline project has been in development for many years.[4] Through a comprehensive portfolio review process, Spire Missouri identified the need for greater diversity of supply sources and transportation paths. Its review of opportunities to connect to REX commenced in 2010 and crystalized with the prolific growth of gas production in the Appalachian basin and the development of a robust, liquid trading hub at REX Zone 3 in 2016.[5] An additional benefit of this initiative was identified with Spire Missouri's decision to replace its dated and operationally problematic reliance on propane facilities to meet peak day needs.

Many parties have been looking at projects to increase gas pipeline capacity into the St. Louis region for the past decade. When Spire Inc. (Spire and Spire Missouri's parent company) began to seriously consider alternatives for development of the pipeline, it had discussions with several potential pipeline joint venture partners. MRT was one such potential joint venture partner.

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[2] Spire notes that while the Commission's Certificate Policy Statement analysis requires that a pipeline applicant consider the effects of its proposal on existing pipelines and their captive customers and show whether it has made efforts to eliminate or minimize them; it does not require that no such effects exist, or that all potential effects be eliminated. *See, e.g.*, *Atlantic Coast Pipeline LLC*, 161 FERC ¶ 61,042 at PP 25–26 (2017) ("*Atlantic Coast*") (citing *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999) ("Certificate Policy Statement"), *clarified*, 90 FERC ¶ 61,128 ("Order on Clarification of Certificate Policy Statement"), *further clarified*, 92 FERC ¶ 61,094 (2000)). When negative cost effects are identified, the Commission's process explicitly requires a *balancing* of such costs with the benefits that the proposal will bring. *Atlantic Coast* at P 26. As Spire has demonstrated, and as demonstrated further in these data responses, the benefits of this new pipeline vastly outweigh any potential speculative costs that may result from Spire Missouri's future reduction in its capacity entitlements on other pipelines.

[3] *See* response to Data Request 4.

[4] For a thorough history of Spire Missouri's consideration of various opportunities to reach the REX system, diversify its pipeline transportation supply paths, and meaningfully expand access to new gas supply sources, see the Affidavit of Scott E. Woley, Vice President, Gas Supply and Operations, Spire Missouri, submitted as part of Spire Missouri's answer to protests filed on March 22, 2017 in this proceeding ("March 2017 Woley Affidavit").

[5] *See* March 2017 Woley Affidavit at 2–3.

When it was being considered as a potential partner, MRT worked jointly and eagerly with Spire on plans for the new pipeline, identifying strategic benefits from unlocking efficient access to supplies from REX for delivery into both the St. Louis area and points south on the MRT system, and further south on MRT's affiliated systems.[6] Although MRT abruptly and unilaterally terminated its involvement in the process, the benefits of this new pipeline for MRT and its shippers still remain and have even been touted by MRT's own senior management in an earnings call with the investment community.[7]

The Need for this Pipeline Has Been Thoroughly Documented and Supported

Longstanding Commission policy, endorsed by reviewing courts and this Commission as recently as the *PennEast* certificate order,[8] provides that a proposed pipeline's commitment level from specific shippers through their execution of precedent agreements is significant evidence of need, regardless whether such commitments are with affiliated shippers. As the Commission stated less than two months ago, "it is current Commission policy to not look beyond precedent or service agreements to make judgments about the needs of individual shippers."[9] Despite this, Spire notes that its justification for this project has never rested solely on the submission of Spire Missouri's precedent agreement, which commits Spire Missouri to 87.5 percent of the capacity to be constructed for a 20-year period.[10] Spire's initial presentation and the additional data provided in the record by Spire as well as Spire Missouri, including the submission of a study prepared for Spire Missouri by economic consulting firm Concentric Energy Advisors, Inc. ("Concentric Study") entitled "Benefits of Spire STL Pipeline to Laclede Gas Company Customers," provided substantial additional support for the conclusions that this pipeline project is needed and no reasonable alternatives exist to meet the stated needs of Spire Missouri.

Spire Missouri has decided to retire its aged propane peak shaving facilities. Spire Missouri's decision was based on multiple factors independent of the Spire project. There is no present pipeline capacity available to replace Spire Missouri's propane peaking system. If not for the Spire project, Spire Missouri would have to solicit for other new pipeline capacity development. No such project currently exists and any such future project would carry its own

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6 See the response to Data Request 4 for additional information about this initiative.

7 *See id.*

8 *PennEast Pipeline Company, LLC*, 162 FERC ¶ 61,053 at P 27 (2018) ("*PennEast*").

9 *Id*. at P 33 (noting the Commission's "disinclination to second-guess reasoned business decisions by pipeline's customers evidenced by precedent agreements, as well as binding contracts" and further noting that "when considering applications for new certificates, the Commission's primary concern regarding affiliates of the pipeline as shippers is whether there may have been undue discrimination against a non-affiliate shipper."). No such allegations have been made in this proceeding.

10 It should be noted that the Commission recently approved Enbridge Inc.'s NEXUS project which only had 59 percent of its capacity subscribed. In doing so, the Commission recognized that "constructing a larger capacity pipeline than immediately necessary in a location where there is a potential for future growth in demand for service on the pipeline is appropriate as it will minimize potential environmental and landowner impacts that could occur in the future were a smaller pipeline constructed now." *NEXUS Gas Transmission, LLC*, 160 FERC ¶ 61,022 at P 46 (2017).

environmental, cost, and other impacts likely to be greater than the Spire project, as concluded by both Spire Missouri and Commission Staff in the EA.[11]

Spire reiterates the following additional direct benefits of its pipeline for Spire Missouri and its customers:

- Access, through REX, to more diverse and non-traditional supply sources for Spire Missouri, including increased access to supplies in the largest and most prolific supply basin in North America, the Marcellus and Utica shale plays, which results in significant cost savings for Spire Missouri's customers, as demonstrated in the response to Data Request 1;
- Access, as well, to the optionality on REX to bring in gas from the east or west, and enhanced flexibility in the way Spire Missouri can utilize its remaining portfolio assets, such as storage, to achieve efficiencies for its customers;
- A new firm transportation path outside the New Madrid Seismic Zone;
- A new, state-of-the-art pipeline system, which is a significant upgrade for safety, reliability, and resilience reasons as compared to the significantly older systems in Spire Missouri's current portfolio – systems that will likely require modernization, pipeline safety upgrades, and/or replacements in the coming years, with their attendant service interruptions and costs; and
- Significant operational benefits to the Spire Missouri LDC system, as discussed in the response to Data Request 5.

Spire notes, in particular, an additional benefit that has recently been identified and is discussed in the response to Data Request 5. That is, Spire Missouri has, during this past winter, begun to experience reliability problems with its primary firm contract path on NGPL, which delivers gas into the East Line portion of MRT's system for further delivery by MRT at the Chain of Rocks delivery point that is proposed to be rebuilt as a bi-directional meter station in this proceeding. As discussed below, Spire Missouri has recently had multiple instances in which MRT refused to confirm Spire Missouri's primary firm, within contract, timely nominations, alleging that NGPL's delivery pressure is insufficient to penetrate the line pressure on MRT. This development serves as yet another reason why the Spire pipeline will bring needed reliability and supply security benefits to Spire Missouri and its customers.

The Data Requested Is Unnecessary Under FERC Policy

Spire developed and presented its proposed pipeline project in reliance on the Commission's extensive and well-developed certificate policy and precedent. Substantial work was performed on developing the initial commercial terms and scope of the project while consulting with several potential joint venture partners that are experienced interstate pipeline operators, including MRT. Subsequently, Spire requested use of, and participated in, the Commission's Pre-Filing Process, engaged in significant outreach to governmental, regulatory, and other stakeholders, conducted multiple open houses and other stakeholder engagement events,

[11] EA at 148–51 (dismissing system alternatives including expansions of MoGas and Natural Gas Pipeline Company of America LLC ("NGPL")).

made significant changes to the route to accommodate and resolve landowner and other input, and devoted enormous resources and time to the certificate application process. Spire has promptly addressed all Commission Staff requests for data and updated the record diligently with additional agency correspondence and other environmental data.

When proposed pipeline projects at the Commission have been contested by a competing pipeline, the Commission has honored and applied its long-established principles in that it:

(1) does not protect pipelines from competition;[12]
(2) will not second guess the economic decisions of customers to achieve better prices from new suppliers;[13]
(3) believes that competition will ultimately lead to lower prices and benefits for all market participants, including the incumbent pipeline's captive shippers, in the long-run;[14] and
(4) acknowledges the benefits to gas consumers from increased reliability and flexibility that result from accessing additional supplies of competitively-priced domestic gas.[15]

Nothing in the record should cause the Commission to diverge from applying these same principles in this proceeding, or to process this case in a manner different from the *Guardian*, *Ruby*, or *Kinder Morgan* projects. Each of those cases involved incumbent competitor pipelines vigorously contesting a new pipeline on the same grounds as MRT – arguing that the Commission must protect it and its captive shippers from the potential effects of the new project. In each of those cases, FERC approved the new project because of the benefits associated with the introduction of much-needed competition to the region.

For instance, in *Kinder Morgan*, the Commission found that the new lateral would "introduce competitive options for shippers, including those who may otherwise be captive to [the dominant interstate and intrastate carriers]. . . . The addition of this alternate route, by definition, increases reliability of service."[16] The Commission has also noted that new projects "lead to future

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[12] *See* Certificate Policy Statement at 61,748; Order on Clarification of Certificate Policy Statement at 61,397 ("Generally, . . . construction of a pipeline whose rates are unsubsidized will not be considered to have an adverse effect on an existing pipeline."); *Guardian Pipeline, LLC*, 91 FERC ¶ 61,285 at 61,978 (2000) (rejecting competitor pipeline's protests regarding unfair competition and capacity turnback risk and finding that any such adverse impacts to the competing pipeline would be the result of competition, which would "lead to future benefits for all market participants") ("*Guardian*"); *Kinder Morgan Interstate Gas Transmission LLC*, 122 FERC ¶ 61,154 at P 32 (2008) (issuing a certificate because it would provide an LDC new, competitive options to transport natural gas, rather than remaining captive to existing pipelines) ("*Kinder Morgan*"); *Ruby Pipeline, L.L.C.*, 128 FERC ¶ 61,224 at PP 37–39 (2009) (rejecting competitor pipeline's protests regarding capacity turnback risk and finding that any adverse impacts on competing pipelines and their existing customers will be the result of fair competition) ("*Ruby*").

[13] *Kinder Morgan* at P 24.

[14] *Guardian* at 61,978.

[15] *Ruby* at P 37.

[16] *Kinder Morgan* at P 22.

benefits to all market participants"[17] and that any adverse impacts of new pipelines on existing pipelines and their shippers "may be mitigated by the new opportunities that the [new] pipeline will create for the existing pipelines to transport gas from additional sources for their shippers."[18]

If anything, the need for greater diversity and competition among natural gas transporters into the St. Louis area is highlighted by the fact of MRT's current market dominance. MRT currently controls approximately 87 percent of the physical transportation capacity into Spire Missouri's St. Louis market, a situation that, on its own, provides compelling support for the reasonableness of Spire Missouri's efforts to seek greater diversity in its transportation capacity portfolio.

Spire requests that the Commission consider whether the questions raised in the data request are consistent with the Commission's historical application of its Certificate Policy Statement and whether they have elicited information that is necessary for the Commission to make a decision consistent with that historical application. Spire is unaware of any prior certificate proceeding, however strongly protested by a competitor pipeline, where the Commission Staff required the pipeline applicant to quantify the future gas costs associated with one proposal or another or provide specific cost justification for a non-jurisdictional facility's retirement.

The Commission has previously been careful to acknowledge the substantial reliance the industry places on regulatory consistency in its application of certificate policy, which affects investment decisions of great magnitude in this industry that relies entirely upon private investment for new infrastructure development. The last time it made a change in certificate policy – in adopting the Certificate Policy Statement – the Commission clarified that the new Certificate Policy Statement would not apply to any certificate application that was filed prior to FERC's issuance of the underlying Notice of Proposed Rulemaking for the Certificate Policy Statement.[19] Spire expects that the Commission will follow this same approach in making any policy changes associated with its announced intent to review the Certificate Policy Statement.

Spire Missouri's Procurement Decision Making Is a Matter of State Regulatory Oversight

Spire and Spire Missouri are concerned that certain of the data requests address LDC portfolio management in a manner that is better left to state regulators who have the jurisdictional obligation and authority to regulate LDC procurement. For example, the requests regarding Spire Missouri's historical utilization of its propane facilities and the comparison of firm pipeline capacity to the propane system reach into this LDC's internal decision-making process, a process that is governed by state law and regulation. Spire Missouri has already made the decision to retire the propane system for reasons related to safety, reliability, cost risk, growing incompatibility with the needs of its customers, and the opportunity to substitute a superior alternative in its supply

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17 *Guardian* at 61,978.

18 *Ruby* at P 37.

19 *See* Certificate Policy Statement at 61,751 (finding that it would be unfair to apply the new policy to underlying certificate applications given that such applicants had no notice that FERC was considering a change to its policy); *Independence Pipeline Co.*, 91 FERC ¶ 61,102 at 61,334 (2000).

portfolio when considered as an integrated whole.[20] The data request's exploration of a "what if" scenario is essentially unanswerable and appears to delve into LDC facility and portfolio management review that is beyond the Commission's jurisdiction and expertise – a role the Commission has expressly disclaimed.[21]

The requests for quantitative comparisons of different potential Spire Missouri supply paths are similarly concerning. As Spire Missouri discussed in its previous submissions, including the Concentric Study,[22] LDC portfolios are complex, layered, and developed in consideration of numerous operational as well as cost factors. It is not possible to meaningfully compare supply path costs in isolation without examining non-cost factors or how changing one resource has various cost and non-cost effects on other resources in the portfolio. Simply put, LDC gas supply portfolio decisions are not simple binary choices; there are many variables that are affected when a change to one component is considered. State regulators like the MPSC have the expertise and historical perspective to review these matters on a holistic basis. This subject matter is reserved for the state regulators, and this Commission may be placing itself on the proverbial slippery slope if it bases its decision in this proceeding on the considerations reflected in certain of these data requests.

Given the questions raised in this proceeding about the ability and effectiveness of the MPSC to review Spire Missouri's decision to contract for Spire capacity, Spire requests that the Commission take official notice of the decision of the MPSC, issued February 21, 2018, in Spire Missouri's most recent rate case.[23] In that rate case, the Environmental Defense Fund ("EDF") argued that the MPSC should change its review process specifically regarding Spire Missouri's decision to contract for service on the Spire pipeline project. The MPSC rejected EDF's proposal as "unnecessary, premature, and inappropriate[,]"[24] and found that "[i]f Spire STL Pipeline's pipeline is approved by the FERC, and if Spire Missouri enters into a transportation agreement with that affiliated pipeline, the [MPSC] would review the prudence of that decision in a future [Actual Cost Adjustment] review case."[25] Upon such review, moreover, costs deemed imprudent by the MPSC are subject to disallowance. There is no doubt that the MPSC is the appropriate forum in which to raise questions regarding Spire Missouri's decision to enter into a long-term commitment for capacity on the Spire project. This Commission should resist the temptation to substitute its own judgment for that of the state regulators.

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20 *See* response to Data Request 2.

21 As the Commission recently concluded in resisting the arguments by protesters to examine affiliated shippers' supply decisions, "any attempt by the Commission to look behind the precedent agreements in this proceeding might infringe upon the role of state regulators in determining the prudency of expenditures by the utilities that they regulate." *Atlantic Coast* at P 60.

22 Spire commends to the Commission the section of the Concentric Study (at pages 3–8) titled "Gas Utility Supply Planning Principles" for a good overview of the myriad factors influencing LDC supply portfolio development.

23 In the Matter of the Laclede Gas Company's Request to Increase its Revenues for Gas Service, et al., MPSC File Nos. GR-2017-0215 and GR-2017-0216 ("MPSC Order").

24 *Id.* at 56.

25 *Id.* Unlike other state regulatory programs, the MPSC Order also stated, as a conclusion of law, that "[t]here is no provision in Missouri law that would require, or authorize, the Commission to preapprove Spire Missouri's management decision to enter into a transportation agreement with a natural gas pipeline." *Id.*

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

1. **To support the assertion that Spire's proposed pipeline would lower the delivered cost of gas to the St. Louis area, provide projections for the cost of gas delivered to Laclede through Spire's proposed pipeline annually over a 20-year period. Include a scenario that only includes the 160,000 Dth/d needed to replace the propane peaking needs, and a second scenario that assumes the full 350,000 Dth/d in the Laclede contract. Break out the costs into relatively known costs, such as the cost to transport gas along the proposed Spire pipeline and the cost to transport gas on REX; and lesser known costs, such as the cost to purchase gas in relevant supply basins and trading hubs. Provide the projections on a per dekatherm basis annually. For gas purchase costs, provide specific references to the publication or sources cited and the location from which supplies would be purchased, and detail methods and assumptions behind any price projections. For pipeline transportation costs use either the maximum tariff rate or the actual contract rate, if lower.**

   a. **Similarly, provide projections of delivered gas costs to Laclede, broken out in the same way as above, through MRT's Main Line, and of Appalachian gas delivered to Laclede through MRT's East Line and through the MoGas pipeline, either individually or allocated among these paths.**

   b. **Provide the cost of the proposed pipeline on a per dekatherm basis over the contract period and the projected savings to consumers from the new REX supply.**

   c. **Provide any supporting data and assumptions that underlie the projections. For example: gas demand projections by major sector (e.g., residential, commercial, industrial, electric utility, other); projections of capacity utilization for the proposed pipeline, including seasonal variations; historical prices and basis between markets that the pipeline serves.**

Spire and Spire Missouri Response:

To quantify the benefits that the Spire pipeline offers Spire Missouri under various alternatives, Spire Missouri developed a detailed analysis which allows it to compare various alternatives to Spire as proposed, where Spire Missouri contracts for 350,000 Dth/d of the 400,000 Dth/d available (the "Base Case"). This analysis necessarily includes an evaluation of each of the alternatives on Spire Missouri's entire portfolio, given that the assets (i.e., contractual entitlements) in Spire Missouri's portfolio are interrelated, and changes to one affect the presence, utilization, and/or costs of those other assets in the portfolio. Spire Missouri's analysis thus examines all of Spire Missouri's assets and allows for adjustments to be made to the entire portfolio to fully understand the overall impact of the various scenarios on its customers. Spire Missouri believes that this type of holistic approach is the only way to meaningfully reflect the dynamics of a multi-supply source LDC portfolio in order to assess the economics of future portfolio changes.

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

The alternatives requested to be considered, and outlined in the scenarios that follow, are summarized in the following table:

20 yr. Average Cost Comparison

Scenario	Delivered Cost/Dth	Total Cost to Spire Missouri ($M)	Savings to Spire Missouri of Base Case vs. Alternative ($M)
Base Case: 350,000 Dth/d on Spire	$5.59	$443.2	NA
1. 160,000 Dth/d - Downsized Spire	5.98	474.2	$31.0
2. Main Line Expansion	5.89	467.4	24.3
3. East Line Expansion	5.88	466.2	23.0
4. MoGas Expansion	6.05	479.6	36.4

Supply Diversity Comparison (% of Total Supply)

Scenario	Midcontinent	TX OK/Arkoma	Perryville	REX Zn3	Appalachia
Base Case: 350,000 Dth/d on Spire	47%	1%	7%	36%	9%
1. 160,000 Dth/d - Downsized Spire	56%	3%	8%	24%	9%
2. MRT Main Line Expansion	57%	27%	7%		9%
3. MRT East Line Expansion	57%	25%	6%	3%	9%
4. MoGas Expansion	55%	25%	8%	3%	9%

General assumptions used in the analysis are as follows:

a. All of Spire Missouri's existing pipeline contractual unit rates (including recourse rates where applicable) remain unchanged, except in the Base Case of 350,000 Dth/d on Spire where Spire Missouri assumes an increase in MRT's rates caused by stranded costs resulting from a reduction in contract volumes by Spire Missouri. These stranded cost assumptions can be found in Exhibit A. This is an extremely conservative approach given the age of many of the pipelines currently serving Spire Missouri, and Spire Missouri's expectation that those pipelines will be raising their rates in the future to recover the costs of replacing and/or modernizing their facilities, as well as making new infrastructure investments to maintain the efficient and safe operation of their systems.

b. Currently effective usage and fuel rates were used.

c. IHS Markit pricing data from February 2018 was used to forecast natural gas commodity prices and to quantify the cost of gas at various supply points. IHS is a highly regarded and widely used source of gas pricing projections. The 20-year price projection for the various points used in the analysis can be found in Exhibit B. Exhibit B includes copyrighted market data. Accordingly, Exhibit B is redacted in the public version of this response and is filed as Privileged and Confidential.

d. Spire Missouri's firm natural gas supply annual demand requirement is assumed to be constant at approximately 79.3 Bcf in all scenarios and is based on Spire Missouri's average historical usage. Spire anticipates this level will remain relatively constant as slight increases in customers and load growth are likely to be offset by efficiency savings.

e. Total city gate pipeline capacity remains approximately the same at 910,000 Dth/d in each of the scenarios.

f. The propane system is retired in all scenarios and Spire Missouri will be replacing its 160,000 Dth/d of deliverability with 160,000 Dth/d of firm pipeline transportation capacity to the city gate.

g. It is assumed that Spire Missouri would contract for new firm pipeline capacity that would reach back to the closest existing liquid trading point (i.e., REX Zone 3).

Base Case – 350,000 Dth/d on Spire

The Base Case portfolio used as a comparison to each of the alternatives outlined in the scenarios below is based on the following key assumptions:

a. Spire Missouri contract for 350,000 Dth/d at the negotiated rate agreed to in the Precedent Agreement executed between Spire and Spire Missouri.

b. Changes to existing portfolio

    i. Reduction of city gate capacity on MRT that is partially offset by Spire Missouri's addition of market zone southbound capacity on MRT;

    ii. Reduction of MRT Unionville storage capacity;

    iii. Reduction of upstream pipeline capacity corresponding to changes on MRT.

c. Spire Missouri absorption of MRT stranded costs, as indicated on Exhibit A; this is another highly conservative assumption given the likelihood that MRT will be able to further mitigate or eliminate stranded costs through additional capacity sales or other means as discussed in the response to Data Request 4, which is also discussed in Exhibit A.

Scenario 1 – 160,000 Dth/d – Downsized Spire

The approach for this analysis was to examine the cost to Spire Missouri, assuming a downsized Spire to 160,000 Dth/d. Ultimately, this scenario is infeasible as it would result in an unacceptably high cost increase for Spire Missouri and its customers. The rate for a pipeline of this size would be uneconomic for Spire Missouri due to the similar cost of constructing the downsized pipeline, but with much lower billing determinants (160,000 Dth/d vs. 400,000 Dth/d) over which to spread those costs. Many of the most significant cost elements associated with construction of a 65-mile new pipeline along the same corridor are not materially affected by the pipe diameter or capacity (i.e., land acquisition, horizontal directional drilling installations, construction costs). Moreover, given the extensive work that has already been completed on the development of Spire (engineering and environmental largely complete, land acquisition well underway, material purchased, construction contract negotiated, etc.), downsizing the project to 160,000 Dth/d from 400,000 Dth/d will not result in significant savings. We estimate the savings of downsizing the project will only result in a project cost savings of approximately 5 percent, which would bring the total cost, including Allowance for Funds Used During Construction ("AFUDC"), to approximately $209 million as opposed to $220 million. This capital cost, in turn, results in a cost of service of roughly $38 million, which produces a maximum daily recourse rate of approximately 65 cents per Dth, as illustrated in the hypothetical Exhibit N attached hereto as Exhibit C. Using the Base Case portfolio of 350,000 Dth/d on Spire compared to the 160,000 Dth/d scenario results

in annual cost savings of approximately $31.0 million over the next twenty years to Spire Missouri's customers. The average delivered cost per dekatherm of Spire Missouri's base portfolio compared to the 160,000 Dth/d scenario over the next twenty years is $5.59 Dth/d and $5.98 Dth/d, respectively. The results of this analysis can be found in Exhibit D.

Scenario 2 – MRT's Main Line Expansion

The approach for Scenarios 2, 3, and 4 was to look at the cost to Spire Missouri if Spire were not built and Spire Missouri had to rely on existing pipelines to replace the 160,000 Dth/d lost from the propane system retirement. It is important to note that none of these scenarios are currently viable, as there is insufficient pipeline capacity on existing systems to meet Spire Missouri's needs. The only existing capacity in the marketplace that Spire Missouri could reasonably take advantage of is 20,000 Dth/d of MoGas capacity, leaving 140,000 Dth/d of capacity to be sourced elsewhere. As a result, Spire Missouri assumes in each of the following scenarios that the remaining 140,000 Dth/d is sourced on another pipeline's hypothetical expansion project.

Regarding Scenario 2, Spire Missouri assumed that the incremental 140,000 Dth/d is sourced on a hypothetical expansion of MRT's Main Line into St. Louis to a delivery point near Spire Missouri's underground storage field, referred to as Lange. The cost and corresponding rate of an expansion of this nature is unknown, but the expansion would be significant, and therefore, the daily rate is assumed to be 45 cents per Dth. This estimate is conservative given the extent of the work that would inevitably need to be done, such as compressor station modifications, new compressor station additions, and extensive pipeline looping along the existing Main Line. Under this scenario, it is also assumed that capacity upstream of the Main Line would need to be contracted for by Spire Missouri to feed into the Main Line expansion given the fact that the Main Line does not reach back to a liquid supply point. It is assumed that 140,000 Dth/d of additional upstream capacity is held on Enable Gas Transmission, LLC, and the rate is assumed to be the same as the rate Spire Missouri is currently paying for similar capacity. The resulting economics of this scenario is unacceptably high for Spire Missouri as compared to the Base Case scenario. Using the Base Case portfolio of 350,000 Dth/d on Spire compared to the MRT Main Line expansion results in annual cost savings of approximately $24.3 million over the next twenty years to Spire Missouri's customers. The average delivered cost per dekatherm of Spire Missouri's Base Case portfolio compared to the MRT Main Line expansion scenario over the next twenty years is $5.59 Dth/d and $5.89 Dth/d, respectively. The results of this analysis can be found in Exhibit E.

Scenario 3 – MRT East Line Expansion

The approach for this analysis is similar to Scenario 2 except the remaining 140,000 Dth/d of newly required capacity is sourced on an expansion project on MRT's East Line into St. Louis to a delivery point near Spire Missouri's Lange underground storage field. Spire analyzed this project as part of its system alternatives requirements and the assessment is included in Spire's Resource Report 1 of its original certificate application. The cost and corresponding rate of this greenfield expansion is based on industry experience and assumes 18 miles of 20-inch pipeline at an estimated cost of $2.5 million per mile, 10,000 feet of river and channel crossings, and two metering and regulating stations. Given these assumptions, the cost is estimated to be approximately $75 million, including AFUDC, with a cost of service of approximately $13.5 million. At 140,000

Dth/d billing determinants, the maximum daily recourse rate is approximately 26 cents per Dth as shown in the hypothetical Exhibit N attached hereto as Exhibit F. Under this scenario, it is also assumed that upstream capacity would need to be held to source the gas from REX to feed into the East Line expansion, given the fact that the East Line does not reach back to a liquid supply point. In addition, since there is not currently firm capacity available on NGPL from REX, an NGPL expansion would be required for 140,000 Dth/d on NGPL's Gulf Coast Line. The cost and corresponding rate of an expansion of this nature is unknown, but the expansion would be significant, and therefore, the daily rate is assumed to be 30 cents per Dth. This rate is based on expanding approximately 95 miles on NGPL from REX to MRT's East Line and the extensive work that would need to be completed to add compression and/or looping to accommodate the increase in capacity. As a comparison, NGPL's most recent open season for a southbound expansion on NGPL's Gulf Coast Main Line from Iowa/Illinois receipts to the TexOK delivery zone required a unit rate of 40 cents per Dth for twenty years. Using the Base Case portfolio of 350,000 Dth/d on Spire compared to the MRT East Line expansion results in annual cost savings of approximately $23.0 million over the next twenty years to Spire Missouri's customers. The average delivered cost per dekatherm of Spire Missouri's base portfolio compared to the MRT East Line expansion scenario over the next twenty years is $5.59 Dth/d and $5.88 Dth/d, respectively. The results of this analysis can be found in Exhibit G.

Scenario 4 – MoGas Expansion

The approach for this analysis is similar to Scenarios 2 and 3 except the remaining 140,000 Dth/d of newly required capacity is sourced on a MoGas expansion project. The cost and corresponding rate of this expansion is based on industry experience and assumes 85 miles of 20-inch pipeline at an estimated cost of $2.35 million per mile (assumes no cost for land acquisition due to existing right-of-way), one 4,000 foot river crossing, and two metering and regulating stations. Given these assumptions, the cost is estimated to be approximately $230 million, including AFUDC, with a cost of service of approximately $42 million. At 140,000 Dth/d billing determinants, the maximum daily recourse rate is approximately 82 cents per Dth as shown in the hypothetical Exhibit N attached hereto as Exhibit H. Under this scenario, it is assumed that Spire Missouri will be able to source delivered gas on REX at Zone 3 delivered pricing. It should be noted that the ability to rely on firm deliveries of westward flowing gas at this point is the result of Spire being developed and the REX contract negotiated by Spire Missouri. REX agreed to turn around one of its compressor stations as a result of the agreement with Spire Missouri and the new market opportunity REX sees as a result of the Spire project. Using the Base Case portfolio of 350,000 Dth/d on Spire compared to the MoGas expansion results in annual cost savings of approximately $36.4 million over the next twenty years to Spire Missouri's customers. The average delivered cost per dekatherm of Spire Missouri's base portfolio compared to the MoGas expansion scenario over the next twenty years is $5.59 Dth/d and $6.05 Dth/d, respectively. The results of this analysis can be found in Exhibit I.

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Respondents:

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Exhibit A

The following table outlines hypothetical stranded cost assumptions utilized by Spire Missouri in estimating cost of its remaining MRT capacity under the Base Case scenario. It should be emphasized that these projections are based on current data. No final decisions have been made with respect to the actual levels of contract reduction; those will be determined and negotiated at a later time and, as previously explained by Spire Missouri, the amount and type of contract reductions may change based on facts and circumstances at that time.

A summary of the table and the assumptions on which it is based, are as follows:

- The total impact to MRT as a result of Spire Missouri's contract reductions, prior to any mitigation of lost revenue, is approximately $8.2 million, the detail of which can be found in the table that follows.
- Reasonable assumptions on which MRT will be able to mitigate stranded costs are the following:

    A. Southbound St. Louis to Perryville – MRT will be able to sell 25,000 Dth/d of Southbound capacity at a unit rate of 13 cents per Dth on its system as a result of Spire Missouri reducing its contracts on MRT.

    B. East Line to Main Line Conversion – based on our experience in the region, it is assumed that certain customers currently utilizing MRT's East Line would find access to the Main Line to be more attractive. It is assumed that 30,000 Dth/d will be moved from the East Line into the Main Line at an incremental unit rate of 11 cents per Dth. This should be especially attractive to customers in light of the NGPL receipt point pressure issues MRT is having on the East Line. For more on those issues, see the response to Data Request 5.

    C. PALS or Storage – Spire Missouri anticipates that it will likely reduce its existing storage capacity on MRT by 7 Bcf. It is assumed that MRT will be able to resell this capacity as either firm storage or monetize this capacity through its ability to rely on this storage availability to sell additional park and loan services. It is assumed that MRT can realize 38 cents per Dth for reselling this capacity as firm storage (which is a discount to the maximum recourse rate of approximately 35%) or as flexible park and loan services throughout the entire year.

These assumptions are reasonable and should be readily obtainable by MRT should the pipeline choose to make an effort to mitigate the impact of stranded costs on its system. With this minimal mitigation effort, MRT can reduce the impact of the stranded costs by roughly $5.0 million to just over $3.2 million. For purposes of this hypothetical analysis, Spire Missouri assumed, conservatively, that in the future rate case, MRT will be successful in recovering 100 percent of these remaining stranded costs from its customers. Given this assumption, customers on MRT's system, including Spire Missouri, will be allocated a share of the stranded costs based on their respective billing determinants. This results in an impact to Spire Missouri of roughly $1.9 million

(or 60 percent of the total remaining stranded costs associated with de-contracted capacity that cannot be resold) and an impact of roughly $1.3 million spread across MRT's other customers.

Hypothetical MRT Stranded Cost Analysis		
Annual Revenue Loss from Reduction in Spire Missouri Contracts		
Main Line	$5,730,480	
East Line	$2,785,860	
Storage	$3,888,384	
Net Southbound	($4,206,625)	
Revenue Loss Prior to Mitigation	$8,198,099	
Mitigation Assumptions		
A. Southbound St. Louis to Perryville		
Capacity (Dth/d)	25,000	
Rate ($/Dth)	$0.13	
B. East Line to Main Line Conversion		
Capacity (Dth/d)	30,000	
Rate ($/Dth)	$0.11	
C. PALS or Storage		
Capacity (Dth)	7,000,000	
Realized Value to Enable MRT ($/Dth)	$0.38	
Mitigation Revenue		
A. Southbound to Perryville	$1,186,250	
B. East Line to Main Line Conversion	$1,150,380	
C. PALS	$2,677,500	
Total Mitigation	$5,014,130	
Total Revenue Post Mitigation	$3,183,969	
Assumed Allocation to Customers		
Spire Missouri	$1,910,381	*60%*
Other MRT Customers	$1,273,587	

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

Exhibit B

PRIVILEGED MATERIAL REDACTED

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

Exhibit C

		Derivation of Rates - 160,000 Dth/d - Downsized Spire			
Line No.	Description	Reservation	Usage	Total
	(a)	(b)	(c)	(d)
1	Rate Design:			
2	Rate Schedule FTS 1/	160,000	160,000	
3	Rate Schedule ITS	-	-	
4	Total Daily Determinants	160,000		
5	Rate Design Determinants (Line 4 * 12)	1,920,000	57,600,000	
6	Cost of Service:			
7	Rate Schedule FTS	$ 38,181,291		
8	Interruptible Transportation Revenue Credit 2/	200,000		
9		$ 37,981,291	$ -	$ 37,981,291
10	FTS Rates	$ 19.7819	$ -	
11	ITS Rate 3/	$ 0.6504		
12	Overrun Rate 3/	$ 0.6504		
13	PAL Rate 3/	$ 0.6504		
14	Retainage Percentage	0.25%		

1/ Billing determinants are based on system capacity of 160,000 Dth/day

2/ An interruptible transportation revenue credit of $200,000 has been applied to the total system cost of service.

3/ ITS, PAL and overrun rate based on 100% Load Factor Equivalent of FTS Rates.

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Exhibit D – 160,000 Dth/d – Downsized Spire

Delivered cost per dekatherm comparison

A. Base Case: 350,000 Dth/d on Spire

Year	Supply	Transport	Usage	Total
2018	$2.62	$1.30	$0.02	$3.94
2019	2.61	1.30	0.02	3.93
2020	2.64	1.30	0.02	3.96
2021	2.87	1.30	0.02	4.20
2022	3.11	1.30	0.02	4.43
2023	3.39	1.30	0.02	4.71
2024	3.78	1.30	0.02	5.10
2025	3.87	1.30	0.02	5.20
2026	3.89	1.30	0.02	5.22
2027	4.01	1.30	0.02	5.33
2028	4.22	1.30	0.02	5.54
2029	4.58	1.30	0.02	5.90
2030	4.99	1.30	0.02	6.31
2031	4.97	1.30	0.02	6.29
2032	5.36	1.30	0.02	6.68
2033	5.61	1.30	0.02	6.94
2034	5.53	1.30	0.02	6.85
2035	5.66	1.30	0.02	6.99
2036	5.62	1.30	0.02	6.95
2037	5.96	1.30	0.02	7.28
Avg.	$4.26	$1.30	$0.02	$5.59

B. 160,000 Dth/d - Downsized Spire

Year	Supply	Transport	Usage	Total
2018	$2.62	$1.67	$0.02	$4.32
2019	2.61	1.67	0.02	4.31
2020	2.65	1.67	0.02	4.35
2021	2.88	1.67	0.02	4.58
2022	3.12	1.67	0.02	4.82
2023	3.40	1.67	0.02	5.10
2024	3.79	1.67	0.02	5.49
2025	3.89	1.67	0.02	5.59
2026	3.91	1.67	0.02	5.60
2027	4.02	1.67	0.02	5.72
2028	4.24	1.67	0.02	5.94
2029	4.60	1.67	0.02	6.30
2030	5.01	1.67	0.02	6.71
2031	4.99	1.67	0.02	6.69
2032	5.37	1.67	0.02	7.07
2033	5.63	1.67	0.02	7.33
2034	5.55	1.67	0.02	7.25
2035	5.69	1.67	0.02	7.38
2036	5.65	1.67	0.02	7.35
2037	5.98	1.67	0.02	7.68
Avg.	$4.28	$1.67	$0.02	$5.98

Total Delta (A - B)	Savings to Spire Missouri of Base Case vs. Alternative ($000)
($0.38)	($30,215)
(0.38)	(30,038)
(0.38)	(30,368)
(0.38)	(30,262)
(0.39)	(30,772)
(0.39)	(30,767)
(0.39)	(30,743)
(0.39)	(30,806)
(0.39)	(30,875)
(0.39)	(30,967)
(0.39)	(31,042)
(0.40)	(31,476)
(0.40)	(31,475)
(0.39)	(31,312)
(0.39)	(31,235)
(0.40)	(31,446)
(0.40)	(31,522)
(0.40)	(31,515)
(0.40)	(31,554)
(0.40)	(31,513)
($0.39)	($30,995)

Supply diversity comparison

Base Case: 350,000 Dth/d on Spire

Basin	% of Total
Midcontinent	47%
TX OK/Arkoma	1%
Perryville	7%
REX Zn3	36%
Appalachia	9%
	100%

160,000 Dth/d - Downsized Spire

Basin	% of Total
Midcontinent	56%
TX OK/Arkoma	3%
Perryville	8%
REX Zn3	24%
Appalachia	9%
	100%

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Exhibit E – MRT Main Line Expansion

Delivered cost per dekatherm comparison

A. Base Case: 350,000 Dth/d on Spire

Year	Supply	Transport	Usage	Total
2018	$2.62	$1.30	$0.02	$3.94
2019	2.61	1.30	0.02	3.93
2020	2.64	1.30	0.02	3.96
2021	2.87	1.30	0.02	4.20
2022	3.11	1.30	0.02	4.43
2023	3.39	1.30	0.02	4.71
2024	3.78	1.30	0.02	5.10
2025	3.87	1.30	0.02	5.20
2026	3.89	1.30	0.02	5.22
2027	4.01	1.30	0.02	5.33
2028	4.22	1.30	0.02	5.54
2029	4.58	1.30	0.02	5.90
2030	4.99	1.30	0.02	6.31
2031	4.97	1.30	0.02	6.29
2032	5.36	1.30	0.02	6.68
2033	5.61	1.30	0.02	6.94
2034	5.53	1.30	0.02	6.85
2035	5.66	1.30	0.02	6.99
2036	5.62	1.30	0.02	6.95
2037	5.96	1.30	0.02	7.28
Avg.	$4.26	$1.30	$0.02	$5.59

B. MRT Main Line Expansion

Year	Supply	Transport	Usage	Total
2018	$2.66	$1.54	$0.03	$4.22
2019	2.64	1.54	0.03	4.21
2020	2.68	1.54	0.03	4.25
2021	2.91	1.54	0.03	4.48
2022	3.16	1.54	0.03	4.73
2023	3.43	1.54	0.03	5.00
2024	3.83	1.54	0.03	5.40
2025	3.92	1.54	0.03	5.49
2026	3.95	1.54	0.03	5.51
2027	4.07	1.54	0.03	5.64
2028	4.29	1.54	0.03	5.86
2029	4.66	1.54	0.03	6.23
2030	5.07	1.54	0.03	6.64
2031	5.04	1.54	0.03	6.60
2032	5.42	1.54	0.03	6.99
2033	5.69	1.54	0.03	7.25
2034	5.61	1.54	0.03	7.17
2035	5.74	1.54	0.03	7.31
2036	5.70	1.54	0.03	7.27
2037	6.03	1.54	0.03	7.60
Avg.	$4.32	$1.54	$0.03	$5.89

Total Delta (A - B)	Savings to Spire Missouri of Base Case vs. Alternative ($000)
($0.28)	($22,527)
(0.28)	(22,249)
(0.29)	(23,063)
(0.29)	(22,783)
(0.30)	(23,438)
(0.29)	(23,293)
(0.30)	(23,428)
(0.30)	(23,431)
(0.30)	(23,666)
(0.31)	(24,225)
(0.31)	(24,928)
(0.33)	(26,086)
(0.33)	(26,266)
(0.31)	(24,629)
(0.31)	(24,432)
(0.32)	(25,213)
(0.32)	(25,343)
(0.32)	(25,274)
(0.32)	(25,460)
(0.32)	(25,344)
($0.31)	($24,254)

Supply diversity comparison

Base Case: 350,000 Dth/d on Spire

Basin	% of Total
Midcontinent	47%
TX OK/Arkoma	1%
Perryville	7%
REX Zn3	36%
Appalachia	9%
	100%

MRT Main Line Expansion

Basin	% of Total
Midcontinent	57%
TX OK/Arkoma	27%
Perryville	7%
REX Zn3	
Appalachia	9%
	100%

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Exhibit F

		Derivation of Rates - 140,000 Dth/d MRT East Line Expansion		
Line No.	Description	Reservation	Usage	Total
	(a)	(b)	(c)	(d)
1	Rate Design:			
2	Rate Schedule FTS 1/	140,000	140,000	
3	Rate Schedule ITS	-	-	
4	Total Daily Determinants	140,000		
5	Rate Design Determinants (Line 4 * 12)	1,680,000	50,400,000	
6	Cost of Service:			
7	Rate Schedule FTS	$ 13,687,719		
8	Interruptible Transportation Revenue Credit 2/	200,000		
9		$ 13,487,719	$ -	$ 13,487,719
10	FTS Rates	$ 8.0284	$ -	
11	ITS Rate 3/	$ 0.2639		
12	Overrun Rate 3/	$ 0.2639		
13	PAL Rate 3/	$ 0.2639		
14	Retainage Percentage	0.25%		

1/ Billing determinants are based on system capacity of 140,000 Dth/day

2/ An interruptible transportation revenue credit of $200,000 has been applied to the total system cost of service.

3/ ITS, PAL and overrun rate based on 100% Load Factor Equivalent of FTS Rates.

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

Exhibit G – MRT East Line Expansion

Delivered cost per dekatherm comparison

A. Base Case: 350,000 Dth/d on Spire

Year	Supply	Transport	Usage	Total
2018	$2.62	$1.30	$0.02	$3.94
2019	2.61	1.30	0.02	3.93
2020	2.64	1.30	0.02	3.96
2021	2.87	1.30	0.02	4.20
2022	3.11	1.30	0.02	4.43
2023	3.39	1.30	0.02	4.71
2024	3.78	1.30	0.02	5.10
2025	3.87	1.30	0.02	5.20
2026	3.89	1.30	0.02	5.22
2027	4.01	1.30	0.02	5.33
2028	4.22	1.30	0.02	5.54
2029	4.58	1.30	0.02	5.90
2030	4.99	1.30	0.02	6.31
2031	4.97	1.30	0.02	6.29
2032	5.36	1.30	0.02	6.68
2033	5.61	1.30	0.02	6.94
2034	5.53	1.30	0.02	6.85
2035	5.66	1.30	0.02	6.99
2036	5.62	1.30	0.02	6.95
2037	5.96	1.30	0.02	7.28
Avg.	$4.26	$1.30	$0.02	$5.59

B. MRT East Line Expansion

Year	Supply	Transport	Usage	Total
2018	$2.65	$1.53	$0.03	$4.21
2019	2.64	1.53	0.03	4.20
2020	2.68	1.53	0.03	4.24
2021	2.91	1.53	0.03	4.47
2022	3.15	1.53	0.03	4.71
2023	3.43	1.53	0.03	4.99
2024	3.82	1.53	0.03	5.38
2025	3.92	1.53	0.03	5.48
2026	3.94	1.53	0.03	5.50
2027	4.06	1.53	0.03	5.62
2028	4.28	1.53	0.03	5.84
2029	4.66	1.53	0.03	6.21
2030	5.06	1.53	0.03	6.62
2031	5.03	1.53	0.03	6.59
2032	5.41	1.53	0.03	6.97
2033	5.68	1.53	0.03	7.24
2034	5.60	1.53	0.03	7.16
2035	5.73	1.53	0.03	7.29
2036	5.69	1.53	0.03	7.25
2037	6.03	1.53	0.03	7.59
Avg.	$4.32	$1.53	$0.03	$5.88

Total Delta (A - B)	Savings to Spire Missouri of Base Case vs. Alternative ($000)
($0.27)	($21,417)
(0.27)	(21,159)
(0.28)	(21,915)
(0.27)	(21,674)
(0.28)	(22,306)
(0.28)	(22,196)
(0.28)	(22,322)
(0.28)	(22,336)
(0.28)	(22,543)
(0.29)	(23,037)
(0.30)	(23,654)
(0.31)	(24,705)
(0.31)	(24,883)
(0.30)	(23,417)
(0.29)	(23,239)
(0.30)	(23,938)
(0.30)	(24,055)
(0.30)	(24,004)
(0.30)	(24,161)
(0.30)	(24,053)
($0.29)	($23,051)

Supply diversity comparison

Base Case: 350,000 Dth/d on Spire

Basin	% of Total
Midcontinent	47%
TX OK/Arkoma	1%
Perryville	7%
REX Zn3	36%
Appalachia	9%
	100%

MRT East Line Expansion

Basin	% of Total
Midcontinent	57%
TX OK/Arkoma	25%
Perryville	6%
REX Zn3	3%
Appalachia	9%
	100%

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

Exhibit H

		Derivation of Rates - 140,000 Dth/d MoGas Expansion		
Line No.	Description	Reservation	Usage	Total
	(a)	(b)	(c)	(d)
1	Rate Design:			
2	Rate Schedule FTS 1/	140,000	140,000	
3	Rate Schedule ITS	-	-	
4	Total Daily Determinants	140,000		
5	Rate Design Determinants (Line 4 * 12)	1,680,000	50,400,000	
6	Cost of Service:			
7	Rate Schedule FTS	$ 41,883,857		
8	Interruptible Transportation Revenue Credit 2/	200,000		
9		$ 41,683,857	$ -	$ 41,683,857
10	FTS Rates	$ 24.8118	$ -	
11	ITS Rate 3/	$ 0.8157		
12	Overrun Rate 3/	$ 0.8157		
13	PAL Rate 3/	$ 0.8157		
14	Retainage Percentage	0.25%		

1/ Billing determinants are based on system capacity of 140,000 Dth/day

2/ An interruptible transportation revenue credit of $200,000 has been applied to the total system cost of service.

3/ ITS, PAL and overrun rate based on 100% Load Factor Equivalent of FTS Rates.

PUBLIC VERSION – PRIVILEGED MATERIAL REDACTED

Exhibit I – MoGas Expansion

Delivered cost per dekatherm comparison

A. Base Case: 350,000 Dth/d on Spire

Year	Supply	Transport	Usage	Total
2018	$2.62	$1.30	$0.02	$3.94
2019	2.61	1.30	0.02	3.93
2020	2.64	1.30	0.02	3.96
2021	2.87	1.30	0.02	4.20
2022	3.11	1.30	0.02	4.43
2023	3.39	1.30	0.02	4.71
2024	3.78	1.30	0.02	5.10
2025	3.87	1.30	0.02	5.20
2026	3.89	1.30	0.02	5.22
2027	4.01	1.30	0.02	5.33
2028	4.22	1.30	0.02	5.54
2029	4.58	1.30	0.02	5.90
2030	4.99	1.30	0.02	6.31
2031	4.97	1.30	0.02	6.29
2032	5.36	1.30	0.02	6.68
2033	5.61	1.30	0.02	6.94
2034	5.53	1.30	0.02	6.85
2035	5.66	1.30	0.02	6.99
2036	5.62	1.30	0.02	6.95
2037	5.96	1.30	0.02	7.28
Avg.	$4.26	$1.30	$0.02	$5.59

B. MoGas Expansion

Year	Supply	Transport	Usage	Total
2018	$2.66	$1.69	$0.03	$4.38
2019	2.65	1.69	0.03	4.37
2020	2.69	1.69	0.03	4.41
2021	2.92	1.69	0.03	4.64
2022	3.16	1.69	0.03	4.88
2023	3.43	1.69	0.03	5.16
2024	3.83	1.69	0.03	5.55
2025	3.92	1.69	0.03	5.65
2026	3.95	1.69	0.03	5.67
2027	4.07	1.69	0.03	5.79
2028	4.29	1.69	0.03	6.01
2029	4.66	1.69	0.03	6.38
2030	5.07	1.69	0.03	6.79
2031	5.04	1.69	0.03	6.76
2032	5.42	1.69	0.03	7.14
2033	5.69	1.69	0.03	7.41
2034	5.61	1.69	0.03	7.33
2035	5.74	1.69	0.03	7.46
2036	5.70	1.69	0.03	7.42
2037	6.03	1.69	0.03	7.76
Avg.	$4.33	$1.69	$0.03	$6.05

Year	Total Delta (A - B)	Savings to Spire Missouri of Base Case vs. Alternative ($000)
2018	($0.44)	($34,739)
2019	(0.44)	(34,500)
2020	(0.44)	(35,224)
2021	(0.44)	(34,981)
2022	(0.45)	(35,530)
2023	(0.45)	(35,400)
2024	(0.45)	(35,572)
2025	(0.45)	(35,565)
2026	(0.45)	(35,790)
2027	(0.46)	(36,341)
2028	(0.47)	(37,050)
2029	(0.48)	(38,143)
2030	(0.48)	(38,347)
2031	(0.46)	(36,776)
2032	(0.46)	(36,639)
2033	(0.47)	(37,398)
2034	(0.47)	(37,505)
2035	(0.47)	(37,444)
2036	(0.47)	(37,625)
2037	(0.47)	(37,559)
Avg.	($0.46)	($36,406)

Supply diversity comparison

Base Case: 350,000 Dth/d on Spire

Basin	% of Total
Midcontinent	47%
TX OK/Arkoma	1%
Perryville	7%
REX Zn3	36%
Appalachia	9%
	100%

MoGas Expansion

Basin	% of Total
Midcontinent	55%
TX OK/Arkoma	25%
Perryville	8%
REX Zn3	3%
Appalachia	9%
	100%

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2. Quantify any operational benefits that the replacement of the propane system with Spire's proposed transportation capacity would provide to Laclede. Specifically, provide data showing the historical utilization of Laclede's propane peaking system for the past five years, including peak periods, and the cost of maintaining and using the system. Provide a quantitative analysis of the economic benefits of using firm capacity on the proposed pipeline to replace the propane system.

Spire Missouri Response:

a. Operational Benefits to Spire Missouri from Replacement of Propane System with Transportation Capacity

Spire Missouri has decided to retire the propane system on which it relied historically for peaking supply support. The decision to retire this set of non-FERC-jurisdictional facilities was based on multiple qualitative, not quantitative, factors, including reliability, supply security, and gas interchangeability concerns. Although these concerns were already identified in previous submissions in this proceeding, Spire Missouri here provides additional information that informed its decision to retire the propane system and that illustrate the operational benefits to Spire Missouri from the replacement of that system with firm gas pipeline transportation capacity.

i. Reliability and Maintenance Concerns

Spire Missouri's propane system currently comprises the following facilities:

- A vaporization plant (Lange) in north St. Louis County with a vaporization capability of 76 MMcf/d; this facility includes a pre-heater, three vaporizers and seven pumps
- A vaporization plant (Catalan) in south St. Louis County with a vaporization capability of 84 MMcf/d; this facility includes a pre-heater and four vaporizers
- A propane storage cavern with a capacity of over 32 million gallons
- A natural gas liquids pipeline, Spire NGL

The operation of the propane vaporization facilities and propane storage, transportation, and delivery system is complex, with many mechanical components that are vulnerable to performance issues, particularly during extreme weather conditions when they are needed most. For example, valve freeze-offs have been a problem for Spire Missouri during operations in sub-zero temperature conditions. The system does not have back-up power facilities and has been vulnerable to power failure.

The age of these facilities has become a growing concern. All of the pumps were installed in the early 1970s, and a nearly six-mile portion of the Spire NGL pipeline was constructed in the 1930s. Although Spire Missouri has been diligent in maintaining these aged facilities, it anticipates growing integrity and maintenance issues. Replacement with flowing gas from a state-of-the-art

new pipeline would afford substantial operational benefits to Spire Missouri in the avoidance of such future reliability risks and associated integrity management and replacement costs.

ii. Supply Security Concerns

Spire Missouri has two sources of propane that are connected to the Spire NGL pipeline. The first, a Phillips 66 pipeline called the Blue Line runs from Borger, Texas to the Phillips 66 East St. Louis terminal. From March 16 through September 15 annually, the primary direction of flow on the Blue Line is east to west and the line is laid down in Butane, making that propane supply source unavailable to Spire Missouri. The second source of propane is the WRB refinery in Wood River, Illinois. Phillips 66 is the operator and a 50 percent owner of that refinery. There have been concerns about the limited competition in this area, and the Federal Trade Commission assigned a market monitor to this propane market for a 10 year period following the 2002 Conoco Phillips merger, and Spire Missouri was contacted several times by that monitor.

Spire Missouri has not been able to secure a firm contractual commitment for propane supply in recent years and therefore buys propane on an "as available" basis from Phillips 66. Spire Missouri is particularly concerned about the uncertain availability of propane to replenish Spire Missouri's supply during or following severe weather. It has experienced difficulties scheduling deliveries in the past that contributed to the company's decision to retire the propane system and replace it with a more secure, reliable, and flexible solution for its system's peaking needs.

iii. Gas Interchangeability Concerns

Spire Missouri believes it is the only LDC in the country that directly injects propane into the gas stream of its LDC system. This form of peak shaving has an increasing risk of operational issues for Spire Missouri and its customers. If mixed at a ratio of 10 percent propane and 90 percent natural gas (the normal maximum ratio that is required for Spire Missouri to utilize the full 160,000 Dth quantity), the heating value of the gas mix is raised to approximately 1200 BTU per cubic foot, which is significantly higher than the BTU level received by Spire Missouri from its interstate pipeline transporters and in fact exceeds the heating value in all of Spire Missouri's pipeline transporters' tariffs. The average BTU level of the gas supply maintained by Spire Missouri under normal conditions is 1020 BTU per cubic foot.

Propane-enriched (and therefore high-BTU) natural gas is incompatible with compressed natural gas vehicles and with new, high-efficiency boilers. Its effect on high efficiency natural gas furnaces is not currently known. Spire Missouri is obliged to notify five of its large process and electricity cogeneration gas users whenever it utilizes the propane system, and those customers in turn must monitor their facilities and take other actions to protect their facilities during Spire Missouri's use of propane.

In light of these known and potentially harmful effects and the growth of more BTU-sensitive customers in Spire Missouri's customer base, Spire Missouri constrained its use of propane injection during the last extreme weather event, so that the mix of propane in the gas stream did not exceed 5 percent. This limitation on its use of this peaking resource - at a time when it was need most - and concerns about potential future impacts to its customers from continued reliance

on direct propane injection, contributed to Spire Missouri's decision that retirement of the propane facilities and reliance on replacement flowing gas supply to meet its peak day as well as daily and seasonal needs would provide significant operational benefits to Spire Missouri and its customers.

b. Historical Utilization and Costs

The propane system is reserved by Spire Missouri for those rare instances when its existing portfolio is inadequate to meet "needle peak" needs caused by extreme weather conditions or other emergency situations. In the past five years, use of propane has been required during a single, three-day period in 2014. That usage data is as follows:

Date	Average Daily Temperature (degrees Fahrenheit)	Total Propane Vaporized (gallons)	Dth
1/5/2014	18	386,056	35,155
1/6/2014	-3	1,040,256	94,728
1/7/2014	10	485,226	44,186
TOTAL		1,740,681	174,068

Spire Missouri owns the propane cavern, vaporization and injection facilities described above, and pays fees and tariff charges to other companies for access to the pipeline system. Spire Missouri estimates its annual costs associated with the propane system over the past five years to be approximately $2 million.

c. No Quantification of Benefits from Retirement of Propane System

Given that its reasons for retirement of the propane system were fundamentally operational and not cost based, and that the decision has already been made to retire the propane system, Spire Missouri does not have quantitative data illustrating the "what if" scenario of Spire Missouri continuing to rely on the propane system. Spire refers to the data provided in response to Data Request 1 for information regarding the overall cost benefits to Spire Missouri from entering into its long-term capacity commitment to the Spire project.

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3. **Provide an explanation if gas would move from Spire to MRT and support the response with diagrams. Explain whether gas could physically flow into MRT's system at Chain of Rocks or whether gas would only move to MRT by displacement. Provide projections of future deliveries of gas that is reasonable to assume could occur, from Spire to MRT at the Chain of Rocks delivery point.**

Spire Response:

As shown in its certificate application, Spire is proposing to install, at its sole cost, a bi-directional interconnect with MRT in North St. Louis County Missouri. The estimated cost of this set of interconnection facilities (including the removal of the existing interconnection facilities between MRT and Spire Missouri that would be replaced by the new bi-directional interconnection) is $5 million. Spire has proposed physical deliveries into the MRT system at the request of its foundation shipper, Spire Missouri, as Spire Missouri holds MRT firm storage capacity on the southern end of MRT's system in North Louisiana ("Unionville Storage") and would like to have the flexibility of sourcing REX supply through Spire for injection into its MRT storage capacity.

In addition to providing operational flexibility benefits to Spire Missouri, Spire believes that making physical deliveries into MRT at Chain of Rocks will also benefit MRT if MRT allows its system to physically flow gas and sell transportation capacity from Spire to other parts of its system. For example, MRT could sell incremental firm southbound capacity to Spire Missouri to move REX supply from Spire to inject gas into MRT's Unionville Storage or to other potential MRT field zone or market zone customers desiring to source supplies from Spire to their final destination either on or through the MRT system.

MRT's ability to physically receive gas from other pipelines in the St. Louis region has already been proven, as the attached diagram shows. The diagram presents MRT's East Line and reticulated system facilities in the St. Louis region, where it has multiple current receipt and delivery interconnects, and where the proposed interconnect with Spire would be located. As illustrated there, MRT currently accepts physical deliveries from MoGas just north of the proposed Spire interconnect. Spire's proposed interconnect is into MRT's East Line, which has multiple other points of receipt and delivery and flows in multiple directions. The MRT East Line has interconnections with interstate pipelines NGPL and Trunkline Gas Company and has interconnects with MRT's reticulated system through Line A-206 and at MRT's Valve 88. These facilities have historically been used to move MRT East Line flowing supply south to other customers when MRT East Line deliveries at Chain of Rocks are not needed. Physical deliveries from Spire to MRT at Chain of Rocks should be able to flow through the new interconnect into MRT's reticulated system similar to other MRT East Line flowing supply, in accordance with MRT's scheduling procedures in MRT's tariff.

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The issue becomes how much gas MRT can physically flow beyond its reticulated system south through MRT's main lines #2 and #3 into southern Missouri, Arkansas, and beyond. This capability will be determined largely by whether or not MRT desires to make the necessary changes on the north end of its system to effectuate such physical flows. MRT, as it exists today, is capable of flowing over 500,000 Dth/d of gas south on its system from several receipt points in central Arkansas to the south end of its system at Perryville, in northern Louisiana. MRT's 2017 Estimated Capacity Report lists MRT's firm capacity contracts to Unionville and Perryville (including West Line backhaul service) totaling 682,000 Dth/d.

Spire estimates that only modest capital expenditures on the MRT system (less than $10 million) would be required to facilitate the southbound flow. No new compressor stations would be needed to effectuate such deliveries and only minor modifications to MRT's existing facilities would be needed, such as changes to compressor piping, valving and compressor control work at one or more stations, and other miscellaneous minor work. Hydraulic studies performed by Spire indicate that only two to three existing MRT compressor stations would need to be utilized to facilitate the physical movement of approximately 150,000 Dth/d of volumes from Spire south to the existing part of MRT's main line system that is already southbound enabled. Details regarding such work and the contract rates necessary to effectuate such work would need to be worked out between MRT and its potential capacity holders but the end result would clearly be beneficial to MRT and its customers by providing MRT's customers with greater access to gas supplies while at the same time providing MRT with a significant new southbound revenue source to at least partially, if not fully, offset de-contracting revenue loss.

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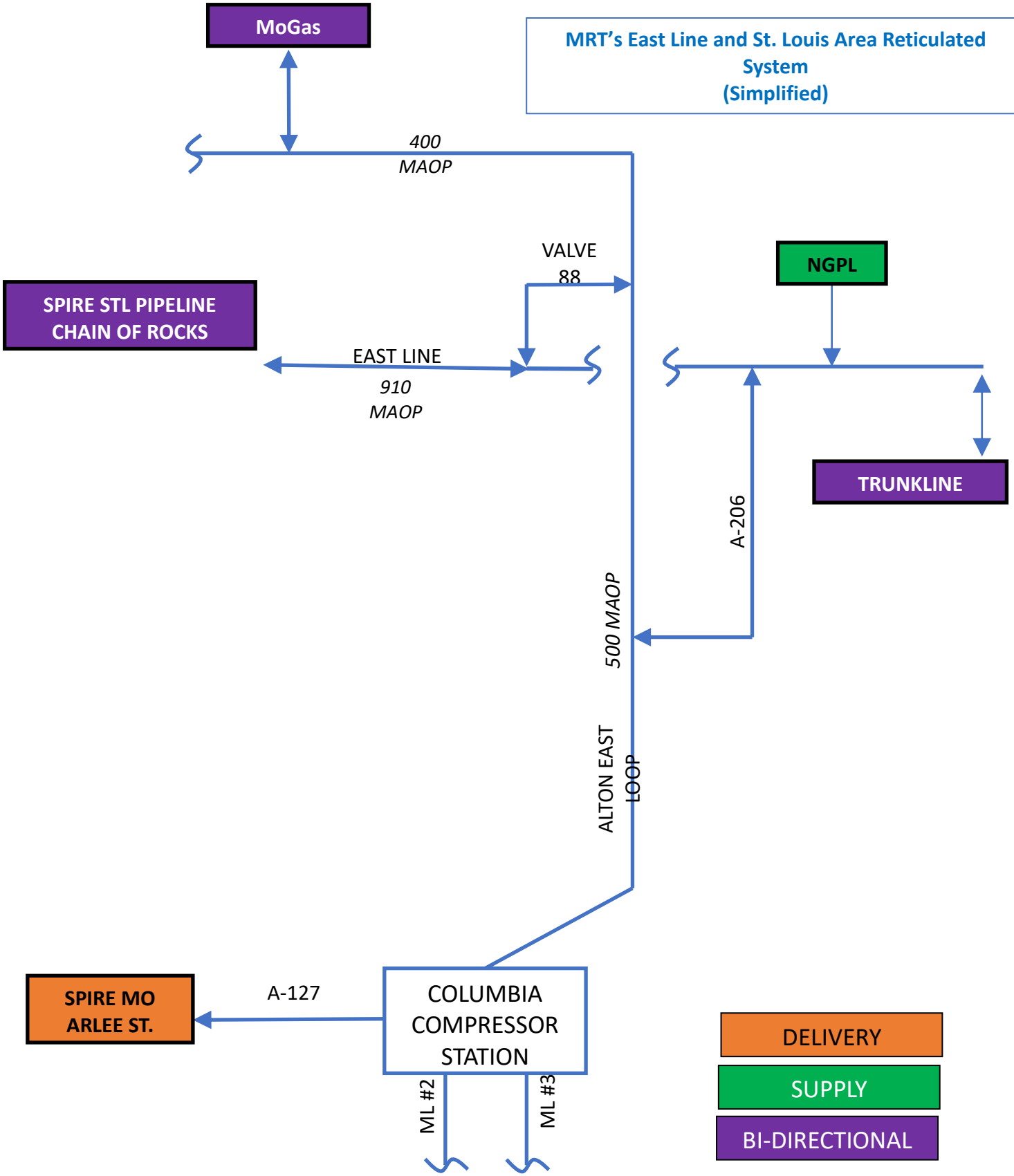
Exhibit to Spire Response to Data Request 3



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4. Identify and quantify any efforts Spire has made to minimize impacts on captive customers, particularly those on MRT and MoGas.

Spire and Spire Missouri Response:

Spire Missouri will remain the largest customer on both the MRT and MoGas pipeline systems following the introduction of the Spire project to its gas supply portfolio. As discussed below, Spire Missouri does not anticipate any contract reductions on MoGas. With respect to MRT, even if Spire Missouri reduces its firm city gate capacity entitlement by 200,000 Dth/d, as illustrated in the response to Data Request 1, that will still leave Spire Missouri with 460,329 Dth/d of city gate capacity on MRT as well as 125,000 Dth/d of southbound capacity on MRT; excluding MRT's affiliated pipeline, the next largest customer on MRT is Ameren Illinois, with a firm entitlement of 80,000 Dth/d.

Given its own anticipated continued status as a captive shipper on these two pipelines, Spire Missouri carefully examined the issue of potential stranded costs, and the need to minimize their impacts and ensure that they are outweighed by benefits to the customers of both pipeline systems. These were important factors considered by Spire Missouri in reaching its decision to move forward with a long-term commitment to the Spire project. The quantification of Spire Missouri's estimate of potential stranded cost impact on Spire Missouri is included in the rate projections provided in Spire's response to Data Request 1.

For general information regarding the efforts Spire Missouri took to analyze and consider the risk of cost effects to captive customers, please see the submissions of Spire Missouri in this docket dated March 22, 2017 and July 14, 2017 and, in particular, Section IV of the Concentric Study, entitled "Numerous Factors Could Potentially Mitigate or Eliminate Any Future Rate Impact of a Capacity Turnback." The following summarizes information in that analysis and provides additional, updated information with respect to efforts Spire and Spire Missouri have made to minimize – or eliminate entirely – potential impacts on captive customers of other pipeline systems associated with the Spire project.

a. No Adverse Impacts on MoGas or its Customers from Spire Project

The Spire project will have no impact on captive customers of MoGas. First, and as specified in the Concentric Study (at 17), Spire Missouri receives deliveries from MoGas and another pipeline, Southern Star Central, that "are critical for maintaining pressure and serving customer demand on the west side of [Spire Missouri's] distribution system that cannot be met by deliveries from other existing supply alternatives in [Spire Missouri's] portfolio." Second, approximately one year ago, Spire Missouri renegotiated its firm transportation service agreement with MoGas and agreed to a long-term extension. As revised, Spire Missouri's service agreement on MoGas has an expiration

date of October 31, 2030.[26] Thus, Spire Missouri has no current plan or ability to reduce its capacity under contract on MoGas.

b. Efforts to Quantify/Examine Potential Impacts on Customers of MRT

The Concentric Study discusses at length various factors considered by Spire Missouri in reaching its conclusion that the introduction of the Spire pipeline is not likely to have the negative effects on MRT or its captive customers that have been asserted by the pipeline in this proceeding.[27] Among those factors:

- The Commission's policy does not guarantee MRT the right to impose turnback costs on its remaining customers, and thus, even if there is capacity turnback that MRT cannot resell, there is uncertainty whether MRT would be permitted to shift those turnback costs to captive shippers.[28]
- Prior alarms raised by MRT regarding capacity turnback in multiple FERC proceedings did not materialize. There is no reason to assume MRT's assertions in this case are any less speculative or more meritorious. [29]
- The Concentric Study describes the successful efforts of other pipelines facing de-contracting associated with changes in supply patterns, and describes in detail how those same strategies could be advantageous to MRT and its corporate family, demonstrating that MRT and MRT's parent company, Enable Midstream Partners, LP ("Enable Midstream") have significant opportunities to benefit from enhanced bi-directional flow capabilities.[30] As discussed in greater detail below, this potential benefit has been recognized by MRT, and Spire believes it is a highly desirable strategy for the pipeline to pursue. In fact, Spire believes that MRT's customers would have good reason to question the prudence of MRT's failure to pursue such a readily available and attractive option to improve the supply diversity and resilience of its current system.
- The Concentric Study provides data regarding the existence of coal-fired and nuclear energy power plants in the vicinity of both the new Spire pipeline and the existing MRT system, and notes the substantial quantities (12–20 GW) of coal retirements estimated by the Midcontinent Independent System Operator, Inc. ("MISO") in and around the MRT footprint.[31] Concentric notes that MISO "identifies natural gas, wind and solar generation as expansions to replace the coal retirements."[32] This is compelling evidence that opportunities for new gas-fired generation load will exist in the coming years in this part of the country, which

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[26] *See* current Index of Shippers posted on MoGas' Informational Postings website and filed with the Commission on December 29, 2017.

[27] *See* Concentric Study at 17–29.

[28] *Id*. at 18–19.

[29] *Id.* at 19–20.

[30] *Id.* at 21–26.

[31] *Id.* at 26–28.

[32] *Id.* at 27.

further supports Spire Missouri's reasonable expectation that stranded costs on MRT will not materialize as the pipeline purports to fear – or if they do, such result will be attributable to a failure on the part of the pipeline to take appropriate steps to market its capacity.

- The Concentric Study also describes efforts by other pipelines to mitigate stranded costs associated with de-contracting by mothballing or abandoning certain facilities on their pipelines that are no longer needed.[33] This is another opportunity for MRT to consider if some segments of its system become unable to compete with other pipelines that are more strategically located, have more attractive supply sources, offer higher quality service, or otherwise offer better value to the market.

c. Specific Efforts to Minimize/Mitigate Impacts on MRT

Spire's project offers MRT an opportunity to mitigate or eliminate altogether any stranded cost impacts by embracing the new access to gas supply from the north, and providing its customers opportunities to flow that gas south on the MRT system. Spire had extensive discussions with MRT executives and even worked in detail with MRT on the potential benefits of the Spire pipeline to MRT when MRT was a potential joint venture partner in, and at the time supportive of, the Spire pipeline project.

Even after Spire elected to pursue the Spire pipeline on its own, MRT's executives continued to publicly identify benefits to MRT from the new Spire pipeline. As Spire reported in its March 17, 2017 response to MRT's initial protest, the Enable Midstream Chief Executive Officer acknowledged that "we are very familiar with that [Spire] project, and candidly we think that our MRT system is very well-positioned to potentially take advantage of moving Marcellus gas south." He and another Enable Midstream executive spoke of the opportunities provided by the Spire project, noting that there would be "more access to gas supply and from other parts of the country and also ties that supply to our Perryville Hub on the [Enable Gas Transmission, LLC] system, so we see a lot of opportunity around that."[34] These comments, which were made less than one week before MRT's protest in Spire's certificate proceeding, are consistent with MRT executives' privately offered views regarding the benefits of the project not only for Spire Missouri but also for MRT and its affiliates. While MRT seems to have abandoned this enthusiasm now that it is no longer a possible partner, the potential benefits to MRT and MRT customers remain significant.

Spire is actively seeking to facilitate the flow of gas into MRT at the proposed interconnect, through its establishment as a bi-directional point. Spire believes this new receipt point access has the potential to benefit MRT customers in the same way it will benefit Spire Missouri – by opening up access, through Spire, to the supply sources directly interconnected to REX. Spire and MRT have begun discussions regarding this proposed interconnection, and Spire has indicated, both privately to MRT and in the record of this proceeding, that it will be fully responsible for the costs associated with the new interconnection facilities. Such an accommodation will further facilitate

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[33] *Id.* at 28.

[34] *See* Motion for Leave to Answer and Answer of Spire STL Pipeline LLC to Protests and Comments, filed March 17, 2017, at 15, citing Enable Midstream Partners, LP, Enable Midstream Q4 Earnings Conference Call and Webcast (Feb. 21, 2017) (transcript excerpt attached to Spire's Answer).

MRT and its customers' access to new supply sources, which will enhance the value of MRT capacity and mitigate or eliminate cost-shifting associated with de-contracting by Spire Missouri. Additional information regarding the potential use of this new bi-directional interconnection is provided in response to Data Request 3.

d. Efforts to Provide Other MRT Customers New Supply Access

Ameren expressed concern regarding the protection of its customers against stranded costs – a concern which, as discussed above, Spire Missouri has thoroughly considered given its own ongoing presence as a major firm shipper on MRT. As discussed above, Spire Missouri concluded that, even in a "worst case" scenario, the risk of cost shifting associated with de-contracted capacity on MRT is low and far outweighed by benefits from the introduction of this new pipeline into the market area.

A tangible example of this benefit is the dialogue Spire has been in with Ameren regarding possible interconnection facilities on the Spire pipeline. In late summer 2017, Spire met with and began actively discussing with Ameren officials the possibility of installing, as part of the initial construction of the pipeline, a tap on the mainline at the point where the pipeline lies approximately one mile from the site of an existing Ameren coal-fired power plant.

The Ameren Sioux Energy Center is, according to publicly available information on Ameren's website,[35] a 970 MW coal-fired electric generation facility in St. Charles County, Missouri that began commercial operations in 1967. While Ameren currently indicates the timeline for retirement of the Sioux Energy Center is not until 2033,[36] the existence of the tap will increase Ameren's options in considering retirement planning or conversion to a natural gas-fired facility.

This initiative also exemplifies Spire's engagement with prospective customers in addition to Spire Missouri, and desire to support new growth and development of natural gas markets in the greater St. Louis region and everywhere along the Spire pipeline route. Such efforts will further mitigate or eliminate risks associated with stranded costs on the MRT system, as they illustrate the opportunities for future natural gas market growth in the region.

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[35] *See Ameren Corporate Facts*, AMEREN (Feb. 2016), https://q9u5x5a2.ssl.hwcdn.net/-/Media/Corporate-Site/Files/aboutameren/AmerenCorporateFactSheet.pdf.

[36] *See* AMEREN MISSOURI, 2017 INTEGRATED RESOURCE PLAN 6 (2017).

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5. Identify and quantify any operational benefits to Laclede that will be provided by the Spire pipeline.

Spire Missouri Response:

Greater diversification, reliability and resilience of transportation and supply sources

More supply connections to large diameter high pressure pipelines into the St. Louis market provides for more options and infrastructure that can be called upon in the event of emergencies and unforeseen events. This type of flexibility and optionality is beneficial from both an operational perspective and a cost perspective. From an operational perspective, multiple transportation paths allow circumvention of pipeline flow issues resulting from mechanical failures or pressure issues that result in curtailments and force majeure events along a single path or point of failure (as an example of upstream reliability issues, see the description of Spire Missouri's recent service reliability issues at the MRT/NGPL interconnect, described below). From a cost perspective, regional events such as supply freeze offs, major storms, or extreme cold or hot weather can create significant regional price spikes in the cost of gas that can be mitigated or avoided completely by having access to multiple differing supply basins in different geographical regions. The ability to avoid such price spikes in an extreme event can save utilities such as Spire Missouri and their customers tens of million dollars in a single year.

Retirement of the Spire Missouri propane peakshaving facilities

See response to Data Request 2.

Ability to downrate an aged transmission segment of the Spire Missouri LDC system and avoid future costly transmission integrity work

Once in service, Spire will allow Spire Missouri to downrate approximately seven miles of high pressure transmission pipeline that was installed in 1961 (the line known as Line 880 that was initially planned to be acquired by Spire and modified as part of this project) to distribution standards. Line 880 runs through densely populated residences and is not piggable due to various valves, siphon drips, and other features preventing any type of in-line inspection process. Downrating the line to distribution pipeline will decrease the operating pressure and increase the safety margin of the line, which in turn will reduce future transmission integrity costs. The estimated cost to make Line 880 piggable, which cost can be avoided with the downrating of the line, is approximately $11 million.

Relocation of major interstate pipeline receipt point at Chain of Rocks

As part of the Spire project, Spire Missouri's major interstate pipeline receipt point at Chain of Rocks, where Spire receives large quantities of gas into its distribution system, is being relocated out of the existing Mississippi River flood plain and onto higher ground (off Prigge Road). Significant flooding of the Mississippi River has caused Spire Missouri to take this major receipt point out of service multiple times over the years as river flood waters have entered and engulfed

the facility or threatened to flood the facility. In such circumstances, Spire Missouri must remove electrical equipment and shut down odorization equipment at the site, at an estimated cost per occurrence of approximately $10,000. Relocating that station, as part of the Spire project, to a non-flood-prone area increases the reliability and safety of Spire's system and avoids those ongoing flood protection costs.

High pressure gas for Spire Missouri storage injections

The high pressure source of gas that will flow through Spire from REX will be used for summer injections into Spire Missouri's on-system natural gas storage field and will lower costs to Spire Missouri associated with compressor station wear and tear and fuel.

Alleviate pressure problems causing reliability problems at MRT/NGPL interconnect

In recent years, pipeline flow dynamics have changed considerably due to changing producing regions, pipelines changing direction, pipeline expansion projects, and greater utilization of individual pipelines. These changes are impacting historical operating conditions on various pipelines. As a result, pipelines that at one time could effectuate deliveries into another pipeline are now facing pressure-related issues that are causing significant service reliability concerns, particularly when they occur during times of system stress like severe weather events, when secure, reliable service is needed most.

This winter, MRT began having pressure issues receiving firm deliveries of gas from NGPL into its East Line due to insufficient pressure on NGPL to effectuate deliveries into MRT's higher pressure system. NGPL's interconnect is one of only two major interconnects providing supply into MRT's East Line, and MRT's East Line provides approximately 20 percent of MRT's peak capacity into the St. Louis region. As a result, MRT's firm East Line shippers who rely on such firm supplies from NGPL, including Spire Missouri, have experienced transportation curtailments. Such curtailments were so concerning, Spire Missouri has been forced to consider amending its firm contracts on MRT away from the East Line. Alternative available point space in MRT's market area is limited, however, and may not satisfy all needs for alternative flows away from the newly unreliable MRT/NGPL interconnect. Having secure, reliable deliveries into St. Louis from Spire will alleviate this reliability concern with MRT East Line service.

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CERTIFICATE OF SERVICE

I hereby certify that on this, the 13th day of March, 2018, I have caused a true and correct copy of the foregoing Response to Data Request to be served, by electronic mail, upon all parties listed on the service list compiled by the Office of the Secretary, Federal Energy Regulatory Commission, for the above-referenced proceeding.

/s/ Russell Kooistra
Russell Kooistra

Schedule DAY-D-8

Document Content(s)