

**Exhibit No:**  
**Issue:** Engineering/Cost Analyses  
**Witness:** Rob Atkinson  
**Type of Exhibit:** Direct Testimony  
**Sponsoring Party:** Spire Missouri Inc.  
**Case Nos.:** GO-2019-0115, GO-2019-0116

**Date Prepared:** March 29, 2019

**SPIRE MISSOURI, INC.**

**File Nos. GO-2019-0115, GO-2019-0116**

**DIRECT TESTIMONY**

**OF**

**ROB C. ATKINSON**

**MARCH 2019**

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**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Rob C. Atkinson and my business address is 5311 Manchester Ave., St. Louis, Missouri, 63110.

**Q. WHAT IS YOUR PRESENT POSITION?**

A. I am presently employed as Director, Pipeline Management at Spire Missouri.

**Q. PLEASE STATE HOW LONG YOU HAVE HELD YOUR POSITION AND BRIEFLY DESCRIBE YOUR RESPONSIBILITIES.**

A. I was elected to my present position in December 2018. In this position, I am responsible for Spire’s Missouri East Field Operations team that is tasked with replacing our pipeline facilities.

**Q. WHAT WAS YOUR EXPERIENCE PRIOR TO ASSUMING YOUR CURRENT POSITION?**

A. I joined Spire Missouri, formerly known as Laclede Gas Company, in January 1990 as an Engineer in the System Planning group. In 1992, I was promoted to Area Development Engineer, and then Area Development Engineer II in 1994. In this role, I worked with Laclede’s Sales team to determine the scope and cost of new business projects. In 1998, I was moved to System Development Engineer in the Gas Operations group. In this role, I supervised Gas Operations Controllers, and Instrumentation Controllers. In 2002, I was promoted to Superintendent, System Planning. In this role I supervised the System Planning Engineers in our pipeline modeling and capital main project main sizing. In 2010, I was promoted to Superintendent, Construction Services, and then Manager, Construction

1 Services in 2013. In this role, I supervised the Construction Engineers and GIS Analysts  
2 in the design and cost estimating of all capital pipeline construction projects. In 2016, I  
3 was promoted to Director, Construction Engineering and Business Support. In this role I  
4 continued to oversee Construction Engineering for all of Spire, as well as the Business  
5 Support team who helped implement and maintain the use and functionality of our  
6 Enterprise Asset Management (“EAM”) system.

7  
8 **Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?**

9 A. I graduated from the University of Missouri – Columbia in December 1989 with a  
10 Bachelor’s degree in Mechanical Engineering.

11  
12 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THIS**  
13 **COMMISSION?**

14 A. No, I have not.

15 **I. PURPOSE OF DIRECT TESTIMONY**  
16

17 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

18 A. The purpose of my testimony is to sponsor and describe the individual, project-level  
19 engineering/cost analyses that Spire Missouri (“Spire” or “Company”) prepared for the  
20 Infrastructure System Replacement Surcharge (“ISRS”) applications filed by the Company  
21 on behalf of its two operating units, Spire East and Spire West. These engineering analyses  
22 were performed to align Spire’s ISRS applications and supporting evidence with the  
23 guidance outlined in the Commission’s September 20, 2018 Report and Order in Case Nos.

1 GO-2018-0309 and GO-2018-0310. Specifically, I will explain: (1) Spire’s objective when  
2 conducting the individual project analyses; (2) Spire’s general approach to constructing the  
3 project scenarios and the assumptions and procedures that were employed to construct the  
4 analyses; and (3) the conclusions reached by the Company as a result of conducting these  
5 analyses.

6 **Q. ARE ANY OTHER WITNESSES SUBMITTING TESTIMONY ON BEHALF OF**  
7 **THE COMPANY REGARDING THESE ANALYSES?**

8 A. Yes. Company witness Wesley Selinger provides additional details on how the results of  
9 these analyses are incorporated in the ISRS models used by the Company to support its  
10 ISRS revenue requirement calculations.

11  
12 **II. SPIRE’S PROJECT ENGINEERING/COST ANALYSES**

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14  
15 **Q. PLEASE DESCRIBE THE OBJECTIVE OF SPIRE’S INDIVIDUAL**  
16 **ENGINEERING/COST ANALYSES.**

17 A. The primary purpose of conducting these analyses was to expand upon the engineering  
18 analyses that have previously been conducted and discussed in prior ISRS and rate case  
19 proceedings and to comply with the evidentiary roadmap laid out by the Commission at  
20 pages 15 to 16 of its Report and Order in Case Nos. GO-2018-0309 and GO-2018-0310.

21 In that Order, the Commission stated the following:

22 “In the future, if Spire Missouri wishes to renew its argument that plastic  
23 pipe replacements result in no cost or a decreased cost of ISRS, it should  
24 submit supporting evidence to be considered, such as, but not limited to, a  
25 separate cost analysis for each project claimed, evidence that each patch  
26 was worn out or deteriorated, or evidence regarding the argument that any  
27 plastic pipe replaced was incidental to and required to be replaced in

1 conjunction with the replacement of other worn out or deteriorated  
2 components.”

3  
4 Consistent with this guidance provided by the Commission, Spire conducted individual  
5 engineering analyses, on a project by project basis, comparing the cost of using the  
6 Company’s approach to retiring aging pipe, which involved retiring plastic facilities where  
7 it was economically and operationally unfeasible to reuse them (scenario one) with an  
8 alternative scenario in which the Company performed the same task while utilizing as much  
9 of the existing plastic facilities as possible (scenario two).

10 **Q. IN YOUR OPINION, DOES THIS COMPORT WITH THE EVIDENTIARY**  
11 **ROADMAP LAID OUT IN THE COMMISSION’S ORDER IN CASE NOS. GO-**  
12 **2018-0309 AND GO-2018-0310, SPIRE’S IMMEDIATELY PRECEEDING ISRS**  
13 **CASES?**

14 A. In my opinion, yes it does. Virtually from the moment the Commission issued this  
15 guidance in its Report and Order, the Company initiated the extensive analytical effort  
16 necessary to comply with it. As a result of these efforts, and with the very helpful input of  
17 the Commission Staff along the way Spire prepared an individual engineering/cost  
18 analysis for each eligible ISRS project from October 1, 2017 through January 31, 2019,  
19 with a limited amount of exceptions.

20  
21 **Q. FOR WHAT PROJECTS DID SPIRE NOT PERFORM AN ENGINEERING**  
22 **ANALYSIS?**

23 A. The Company prepared an analysis for each project included in these ISRS filings, with  
24 the exceptions of relocation projects mandated by governmental entities, projects related  
25 to a pipe found to be in an angle of repose, and projects in which either no plastic pipe was

1 abandoned or incidental plastic pipe was abandoned because it was no longer necessary  
2 and not replaced. Overall, for both the East and West operating units of the Company,  
3 Spire performed over 500 project analyses covering the period of October 1, 2017 through  
4 January 31, 2019.

5  
6 **Q. CAN YOU PLEASE DESCRIBE THE COMPANY'S GENERAL APPROACH TO**  
7 **COMPLETING ITS ANALYSES?**

8 A. The Company utilized the format of the sample of project analyses it submitted in its prior  
9 ISRS cases, Case Nos. GO-2018-0309 and GO-2018-0310 as a base template upon which  
10 to begin building its approach for the analyses submitted in this proceeding. I should note  
11 that in addition to presenting these analyses in its last ISRS case, the Company also  
12 performed and presented the results of these project analyses on a more limited basis in a  
13 prior ISRS case as well as the Company's most recent rate case.

14 **Q. DID ANY PARTY CHALLENGE ANY OF THE ELEMENTS OF THESE**  
15 **ANALYSES OR THE RESULTS THEY PRODUCED?.**

16 A. No, despite numerous opportunities to do so, in none of these prior proceedings has any  
17 party ever challenged the design, structure or results of these analyses. In fact, the only  
18 criticism expressed about these analyses was the Commission's determination in its Order  
19 in the last ISRS cases that the Company needed to do more of them to support each ISRS  
20 project. The Company accordingly concluded that it should use the kind of  
21 engineering/cost analyses previously presented in those cases as a base template for the  
22 broader and more comprehensive set of analyses that it did for all ISRS projects in these  
23 cases.

1 **Q. PLEASE CONTINUE WITH YOUR EXPLANATION OF HOW THE COMPANY**  
2 **WENT ABOUT CONDUCTING THIS LARGER SET OF ANALYSES.**

3 A. The Company first categorized each project to prioritize the additional analyses according  
4 to those that specifically involved the replacement of plastic pipe. Categories included  
5 those related to future phases of main replacement, and projects that involve the retirement  
6 of legacy main materials such as Aldyl A, PVC, and Copper etc. Once the projects were  
7 broken down into the above-mentioned categories, the Company took to expanding upon  
8 the base template provided by the prior sample analyses and developed a significantly more  
9 granular evaluation that includes a categorical breakdown of the estimated project costs  
10 under each scenario considering labor, materials, tools, and overheads. For each of those  
11 categories, the Company went further and provided a thorough listing of all items, in some  
12 cases thousands of items, that would be required to complete the project as designed under  
13 each alternative scenario for a significant sample of projects. The Excel file accompanying  
14 this testimony, which I am sponsoring and have marked as Schedule RCA-1, was originally  
15 provided in the Company's response to Staff Data Requests 5 and 9 for Spire East and Data  
16 Requests 4 and 8 for Spire West illustrates this level of detail and can be filtered on a  
17 project by project and category by category basis. The Company will continue to provide  
18 this project information upon request or as deemed necessary in the future. In addition, a  
19 construction drawing/schematic was provided where necessary, which gave additional  
20 detail and notations on the work being performed, along with a brief description for  
21 additional clarity.

22 **Q. PLEASE ELABORATE FURTHER ON HOW THE COST FIGURES FOR LABOR,**  
23 **MATERIALS, TOOLS, AND OVERHEADS WERE DERIVED.**



1 A. The Company utilizes what are referred to as compatible units (“CU’s”) to calculate its  
2 estimate of the costs associated with a project under each scenario. CU’s provide an  
3 estimated cost for each of the different items and variations of items underlying a project  
4 such as pipe materials and fittings, indirect overheads, labor hours, and other equipment.  
5 The CU’s and their associated cost estimates are updated on a periodic basis for accuracy  
6 and are used by the Company’s Construction Engineering group when designing  
7 replacement and other types of projects. In order to perform as accurate of a comparison  
8 as possible, each analysis was reconstructed using the most updated CU’s. This created an  
9 apples-to-apples comparison of the engineering decision that would be made when  
10 planning these projects. The CU’s are the basis for deriving the amounts that make up the  
11 larger cost categories of labor, materials, tools, and overheads. The Company’s  
12 Construction Engineering group applied the appropriate units of measurement, whether  
13 that be hours, feet, units, etc., to each required CU to complete its estimates. This level of  
14 estimation demonstrates the amount of detail underlying Spire’s analyses. The Company  
15 has made all project details, down to this level for each analysis, available to the other  
16 parties in these proceedings as part of the discovery process.

17  
18 **Q. ARE THERE OTHER ASSUMPTIONS USED IN THE COMPANY’S ANALYSES**  
19 **WORTH NOTING?**

20 A. It should be noted that service lines can vary significantly in design from location to  
21 location; however, the cost of performing service work that varies in design does not result  
22 in significant variations in cost. Therefore, when performing its analyses, the Company  
23 used an average length and cost basis for estimating service line costs.

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**Q. HAVE THE OTHER PARTIES ACKNOWLEDGED THIS ASSUMPTION AS PART OF THEIR REVIEW?**

A. Yes. Staff has recognized in the memorandum attached to its recommendation that “service lines were treated on an average length and average cost basis” (Staff memo pp. 6).

**Q. WHAT CONCLUSIONS DID THE COMPANY REACH AS A RESULT OF THESE ANALYSES?**

A. As stated above and in Staff’s recommendation, the Company provided over 500 project analyses for Spire East and Spire West covering the period of October 1, 2017 through January 31, 2019 with only the limited exceptions explained above. The overall estimated cost savings generated when comparing scenario one (the Company’s approach) to scenario two (utilize existing plastic) for the over 500 projects was approximately \$1.6 million. In other words, replacing rather than reusing plastic pipe in these projects did not result in additional costs, but instead avoided costs that would have otherwise been incurred. As a result, the ISRS costs sought to be recovered by the Company in these proceedings have been reduced by replacing rather than reusing plastic pipe.

**Q. HAS THE COMMISSION STAFF PROVIDED COMMENTS ON THE COMPANY’S ANALYSES IN ITS RECOMMENDATION?**

A. Yes, the Commission Staff made several affirmative statements regarding the Company’s engineering/cost analyses.

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**Q. WHAT CONCLUSIONS DID STAFF REACH REGARDING THE COMPANY'S ENGINEERING/COST ANALYSES?**

A. Within the memorandums included as part of Staff's recommendations in these cases, Staff states that "as a result of Spire East/West's use of the avoided cost studies, it is reasonable to conclude that the plastic pipe replacements result in no additional ISRS cost" and that "from an economic and engineering viewpoint such replacement is incidental to or required in conjunction with the replacement of worn out or deteriorated components." (Staff memo at pg. 5-6).

**Q. IN YOUR OPINION, WAS STAFF'S RECOMMENDATION SURPRISING?**

A. No, it was not. The Commission Staff has provided a significant level of feedback on the Company's analyses prior to these applications being filed, and afterwards as these proceedings have progressed. The Company and Staff worked on clarifying unclear items in a timely and collaborative fashion through a series of conference calls and technical discussions. Staff frequently communicated areas of concern to the Company in a timely manner, allowing the Company time to explain or, in some instances, revise portions of its supporting evidence to address and alleviate Staff's concerns. As mentioned in Staff's memorandum, one example of this constructive process related to Staff's concern regarding the sufficiency of one portion of the analyses, particularly the drawings and narratives accompanying them. The Company and Staff discussed the issue, the expectations, and a reasonable timeline to complete revising the documents. The Company was able to complete the revisions and do so to Staff's satisfaction. The feedback received

1 from Staff was very constructive in developing a workable process for satisfying the  
2 guidance provided by the Commission in the last ISRS cases.

3 **Q. IN YOUR OPINION, DO THE ANALYSES PERFORMED FOR THE**  
4 **INVESTMENTS ORIGINALLY SUBMITTED IN THE COMPANY'S LAST ISRS**  
5 **CASES DEMONSTRATE THAT THEY ALSO SATISFY THE GUIDANCE**  
6 **PROVIDED BY THE COMMISSION IN ITS REPORT AND ORDER IN THOSE**  
7 **CASES?**

8 A. Yes, I believe they do. The exact same analyses that Staff has determined to be sufficient  
9 to demonstrate the ISRS eligibility of the investments originally submitted in this  
10 proceeding were conducted for investments first submitted in the Company's last ISRS  
11 cases, but not approved. These exact same analyses produced the same kind of results for  
12 these investments. Specifically, they showed that replacing rather than reusing plastic  
13 served to reduce the cost of the projects, thereby reducing rather than increasing the ISRS  
14 costs and charges sought by the Company in those proceedings.

15  
16 **Q. HAS THE OPC PROVIDED ANY COMMENTS ON THE COMPANY'S**  
17 **INDIVIDUAL ENGINEERING ANALYSES?**

18 A. No, they have not. The OPC's comments filed on March 15, 2019 in these cases do not  
19 state a direct position regarding the Company's engineering analyses or the additional  
20 support, beyond stating that overall the Company has failed to produce sufficient evidence  
21 to show that any of its investments are in fact ISRS eligible.

1 **Q. HAS THE OPC PROVIDED ANY INDICATION OF WHAT ADDITIONAL**  
2 **EVIDENCE THE COMPANY SHOULD PROVIDE?**

3 A. No, OPC has not offered any guidance on how the Company could provide sufficient  
4 evidence. I do believe that in this proceeding, the Company, with the feedback and input  
5 of the Commission Staff, has displayed its willingness to work with other parties to provide  
6 extensive records and evidence supporting the eligibility of its investments. OPC has not  
7 suggested any other practical measures that could possibly be taken to further demonstrate  
8 this point.

9  
10 **Q. IN YOUR OPINION, FROM AN ENGINEERING/PIPELINE REPLACEMENT**  
11 **STANDPOINT, IS DEPRECIABLE LIFE A REASONABLE PROXY FOR WHEN**  
12 **A PIPE IS “WORN OUT OR DETERIORATED?”**

13 A. Yes. It is certainly one factor that should be considered. While it is entirely cost-  
14 prohibitive to physically or visibly evaluate all pipe, the depreciation rates and analyses  
15 conducted over many years have shown that such facilities are at or beyond their expected  
16 useful service lives. These conclusions are based on the studies and calculations of  
17 experienced and competent depreciation professionals who have extensive experience on  
18 such matters.

19  
20 **Q. ARE THE CAST IRON MAINS BEING REPLACED BY THE COMPANY AT OR**  
21 **BEYOND THIS EXPECTED USEFUL SERVICE LIFE?**

1 A. Yes. Most of the cast iron mains being replaced by the Company have already exceeded,  
2 by a number of years, their useful service lives as estimated and/or endorsed by OPC, Staff  
3 and Company depreciation professionals.

4

5 **Q. HAS OPC CONTRIBUTED TO THESE ANALYSES REGARDING THE**  
6 **EXPECTED USEFUL LIVES OF CERTAIN FACILITIES THE COMPANY IS**  
7 **NOW REPLACING PURSUANT TO REPLACEMENT PROGRAMS**  
8 **MANDATED BY THE COMMISSION?**

9 A. Yes, in the Company's most recent rate case, the OPC endorsed a continuation of the  
10 service lives previously established for certain kinds of distribution plant. The currently  
11 established useful service life for cast iron mains is 80 years.

12

13 **Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?**

14 A. Yes.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of the Application of Spire Missouri )  
Inc. to Change its Infrastructure System ) **File No. GO-2019-0115**  
Replacement Surcharge in its Spire Missouri East )  
Service Territory )

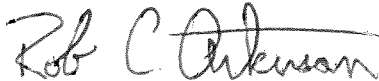
In the Matter of the Application of Spire Missouri )  
Inc. to Change its Infrastructure System ) **File No. GO-2019-0116**  
Replacement Surcharge in its Spire Missouri West )  
Service Territory )

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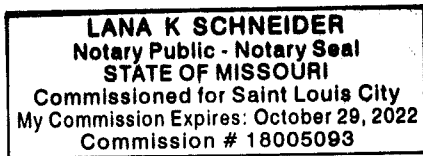
STATE OF MISSOURI )  
CITY OF ST. LOUIS ) **SS.**


Rob Atkinson, of lawful age, being first duly sworn, deposes and states:

1. My name is Rob C. Atkinson. I am Director, Pipeline Management for Spire Missouri Inc. My business address is 5311 Manchester Ave., St Louis, Missouri, 63110.
2. Attached hereto and made a part hereof for all purposes is my direct testimony on behalf of Spire Missouri Inc.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

  
\_\_\_\_\_  
Rob C. Atkinson

Subscribed and sworn to before me this 29<sup>th</sup> day of March 2019.



  
\_\_\_\_\_  
Notary Public