Exhibit No:	
Issue:	**Effect of Plastic Pipe Retirements on ISRS costs**
Witness:	**Mark D. Lauber**
Type of Exhibit:	**Direct Testimony**
Sponsoring Party:	**Spire Missouri Inc.**
Case Nos.:	**GO-2016-0332, GO-2016-0333, GO-2017-0201, GO-2017-0202, GO-2018-0309, GO-2018-0310**
Date Prepared:	**August 22, 2018**

SPIRE MISSOURI INC.

**File Nos. GO-2016-0332, GO-2016-0333,
GO-2017-0201, GO-2017-0202,
GO-2018-0309, GO-2018-0310**

DIRECT TESTIMONY

OF

MARK D. LAUBER

August 2018

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MDL-D1

DIRECT TESTIMONY OF MARK D. LAUBER

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

A. My name is Mark D. Lauber, and my business address is 700 Market St., St. Louis, Missouri, 63101.

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

A. I am presently employed as Director of Health, Safety, and Environmental for Spire Missouri Inc. ("Spire" or "Company").

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

A. I was appointed to my present position in November 2015. In this position, I am responsible for the occupational health and safety of the Company's employees, the compliance with environmental laws and regulations and completing the Company's environmental objectives.

B. **WHAT WAS YOUR EXPERIENCE WITH THE COMPANY PRIOR TO BECOMING DIRECTOR, HEALTH AND SAFETY, ENVIRONMENTAL AND CRISIS MANAGEMENT?**

A. I joined the Company in January 1987, as a staff engineer. I was promoted to Engineer I in January 1990, Engineer II in January 1992, Assistant to the District Superintendent, Construction & Maintenance May 1993, Senior Maintenance Engineer in January 1997, Superintendent of Maintenance Engineering in January 1999, and appointed to Manager of Pipeline Safety Compliance in April 2013 with responsibility for pipeline safety at Spire and its two operating units, Spire East and Spire West.

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

A. I received a Bachelor of Science degree in Electrical Engineering from the, University of Missouri at Rolla in December 1986. Since January 1997, I have been certified as a International Cathodic Protection Specialist by the National Association of Corrosion Engineers (NACE).

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

A. Yes. I have submitted testimony in Case Nos. GC-2006-0318, GO-2016-0332, GO-206-0333, GR-2017-0215 and GR-2017-0216.

I. PURPOSE OF TESTIMONY

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

A. The purpose of my direct testimony is to explain why the proposals by the Staff and Office of Public Counsel ("OPC") to exclude certain ISRS costs on the theory that such costs were incurred to replace plastic facilities are inappropriate and do not reflect the real-world cost consequences of retiring such facilities as part of the Company's cast iron and bare steel replacement programs. To that end, I am again sponsoring testimony that I previously submitted which showed that the retirement of plastic facilities as part of these replacement programs has resulted in no incremental increase in the Company's ISRS charges but has instead reduced those charges compared to what they would have been had it attempted to reuse the plastic pipe at issue. In short, the Company's incidental replacement of plastic pipe has *avoided* rather than *caused* costs to be incurred.

Q. WILL OTHER COMPANY WITNESSES BE ADDRESSING THIS MATTER AND OTHER ISSUES RAISED BY THE PROPOSAL'S OF STAFF AND OPC?

A. Yes. Testimony is also being submitted on these issues by Craig Hoeferlin, our Vice President for Operations Services, Eric Lobser, our Vice President for Regulatory and Governmental Affairs, and Glenn Buck, our Director of Regulatory and Finance.

II. ANALYSES OF COST IMPACT OF PLASTIC RETIREMENTS

Q. YOU INDICATED THAT YOU HAVE PREVIOUSLY SUBMITTED TESTIMONY ADDRESSING WHAT IMPACT THE RETIREMENT OF CERTAIN PLASTIC FACILITIES HAS HAD ON THE COMPANY'S ISRS COSTS. IN WHAT PROCEEDINGS DID YOU SUBMIT THAT TESTIMONY?

A. I addressed this issue in testimony that was submitted on December 23, 2016, in File Nos. GO-2016-0332 and GO-2016-0333, the first two of the six ISRS cases under consideration here. It is my understanding that such testimony is already a part of the record in these proceedings. I also submitted rebuttal testimony addressing this issue nearly 10 months later, on October 17, 2017, in the Company's most recent rate case proceedings, File Nos. GR-2017-0215 and GR-2017-0216.

Q. HAVE YOU ATTACHED YOUR REBUTTAL TESTIMONY IN FILE NOS. GR-2017-0215 AND GR-2017-0216 TO YOUR DIRECT TESTIMONY IN THESE PROCEEDINGS?

A. Yes. I have attached my rebuttal testimony in the rate cases as part of Schedule MDL-D1.

Q. HOW DID YOUR REBUTTAL TESTIMONY IN THE COMPANY'S RATE CASE PROCEEDINGS DIFFER FROM THE TESTIMONY YOU SUBMITTED IN THE EARLIER ISRS CASES?

A. The testimony and analyses submitted in these cases all substantiated the same conclusion, namely that the retirement of plastic facilities as part of the Company's cast iron and bare

steel main replacement programs served to reduce rather than increase the costs incurred for these programs and thus the amounts included in the Company's ISRS filings. The primary difference is that I provided a more detailed analysis in my rate case testimony to demonstrate this critical fact. As shown in Schedule MDL-D1, I analyzed a specific cast iron main replacement project in that testimony in which plastic comprised about 8.5% of the total being replaced – a circumstance that is generally consistent with our experience. There are only two options available to the Company in order to maintain service, so I compared the costs of reusing the existing plastic components, by tying in the old facilities to the new facilities, to the costs of retiring the existing plastic components, by by-passing the old facilities. My analysis showed that attempting to reuse the plastic rather than simply retire it would have created significant, additional work, incurred further complications and increased the project's cost by approximately 20%. In short, the approach to reuse the plastic would cost approximately $341 thousand, but our decision to retire the plastic pipe instead resulted in a cost of roughly $286 thousand. As a result, there was no incremental cost at all to retire these plastic facilities; in fact, the retirements resulted in a negative cost which means that the Company's ISRS costs and charges were *lower*, not *higher*, than they otherwise would have been as a result of this action. Retirement of plastics results in negative costs compared to reusing plastics. That is the only valid cost analysis there can be on this issue because those are the only valid options available to the Company. It is simply not possible to reuse the existing plastic pipe without incurring the added cost of tying it into the new pipeline.

Q. DO THE SAME OPERATIONAL AND ECONOMIC IMPACTS RESULT FROM THE RETIREMENT OF PLASTIC SERVICE LINES WHEN A NEW CAST IRON OR UNPROTECTED STEEL MAIN IS REPLACED?

A. Yes. Whenever it is operationally and economically possible to reuse and reattach an existing plastic service line to a new main the Company will do so. Only in those instances where it is not economically and operationally feasible to reuse the service line does the Company retire it. In all of these instances, however, whether the Company is retiring or reusing the service line, the intent is to reduce, not increase, the costs that the Company is incurring and later including in its ISRS charges. So when the Company opts to replace rather than reuse service lines, that decision is driving a *negative* cost, not a positive one.

Q. SINCE YOU PRESENTED YOUR TESTIMONY ON THIS ISSUE IN LATE 2016 AND LATE 2017 HAS YOUR ASSESSMENT OF THESE COST IMPACTS CHANGED IN ANY WAY?

A. No. There is nothing that has changed that would alter in any way my analyses or the results flowing from them. In fact, Company witness Hoeferlin presents additional analyses in his direct testimony that further substantiates my conclusion that the retirement or replacement of plastic facilities does not increase but instead decreases the level of ISRS costs and charges sought by the Company.

Q. HAVE OPC OR STAFF TAKEN ISSUE WITH YOUR ANALYSES REGARDING THE ACTUAL COST IMPACTS OF RETIRING PLASTIC FACILITIES?

A. Not to my knowledge. Although I have presented my analyses on two separate occasions in two separate proceedings, neither OPC nor Staff have offered any evidence disputing

either the factual basis for my analyses or the conclusions I have reached regarding the cost impacts of retiring plastic facilities.

Q. HOW THEN WOULD YOU ANSWER THE QUESTION POSITED BY THE COMMISSION OF "WHAT COSTS, IF ANY, WERE RECOVERED THROUGH ISRS CHARGES FOR THE REPLACMENT OF PLASTIC COMPONENTS THAT WERE NOT WORN OUT OR IN A DETERIORATED CONDITION?"

A. I think the only possible answer to that question given the operational and economic realities I have discussed in this and prior testimony is that there are no costs – absolutely none – that were, or are being, recovered through the ISRS charges for the replacement of plastic components that were not worn out in in a deteriorated condition. In fact, if the Commission wanted to exclude the impact of these retirements, it would need to increase the Company's ISRS charges above and beyond what the Company has requested because the only other valid option is to undertake the more expensive approach of reusing the plastics.

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

A. Yes.

Schedule MDL-D1

File Nos.

GO-2015-0333

GO-2016-0332

GO-2017-0201

GO-2017-0202

GO-2018-0309

GO-2018-0310

August 2018

Exhibit No:	
Issue:	**Hydrostatic Testing; Replacements of Cast Iron and Bare Steel with Incidental Plastic Pipe**
Witness:	**Mark D. Lauber**
Type of Exhibit:	**Rebuttal Testimony**
Sponsoring Party:	**Laclede Gas Company (LAC)** **Missouri Gas Energy (MGE)**
Case Nos.:	**GR-2017-0215** **GR-2017-0216**
Date Prepared:	**October 17, 2017**

LACLEDE GAS COMPANY
MISSOURI GAS ENERGY

GR-2017-0215
GR-2017-0216

REBUTTAL TESTIMONY

OF

MARK D. LAUBER

October 2017

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MDL-R1

REBUTTAL TESTIMONY OF MARK D. LAUBER

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

A. My name is Mark D. Lauber, and my business address is 700 Market St., St. Louis, Missouri, 63101.

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

A. I am presently employed as Director of Health, Safety and Environmental Compliance for Spire, formerly Laclede Gas Company ("Company").

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

A. I was appointed to my present position in November 2015. In this position, I am responsible for the occupational health and safety of the Company's employees, the Company's compliance with environmental laws and regulations, and completing the Company's environmental objectives.

B. **WHAT WAS YOUR EXPERIENCE WITH THE COMPANY PRIOR TO BECOMING DIRECTOR, HEALTH, SAFETY, AND ENVIRONMENTAL COMPLIANCE?**

A. I joined Laclede in January 1987, as a staff engineer. I was promoted to Engineer I in January 1990, Engineer II in January 1992, Assistant to the District Superintendent, Construction & Maintenance in May 1993, Senior Maintenance Engineer in January 1997, and Superintendent of Maintenance Engineering in January 1999. I was appointed Manager of Pipeline Safety Compliance in April 2013 with responsibility for pipeline safety at both Laclede Gas (LAC) and MGE following Laclede's acquisition of MGE.

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

A. I received a Bachelor of Science degree in Electrical Engineering from the University of Missouri at Rolla in December 1986. Since January 1997, I have been certified as a International Cathodic Protection Specialist by the National Association of Corrosion Engineers (NACE).

Q. **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

A. Yes. I submitted testimony in Case No. GC-2006-0318, as well as Case Nos. GO-2016-0332 and GO-2016-0333.

I. PURPOSE OF TESTIMONY

Q. **WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

A. The purpose of my rebuttal testimony is to respond to portions of the direct testimony filed on behalf of the Office of the Public Counsel ("OPC") by Charles R. Hyneman. Specifically, I will address two issues. The first concerns Mr. Hyneman's assertion that project expenditures made to hydrostatically test, or hydro-test, certain pipeline facilities should be expensed rather than capitalized. I will explain why this assertion is incorrect in that it fails to recognize that such testing is a vital and essential component of allowing the asset to be in service and function in its intended manner and is inconsistent with the capitalization of other testing expenditures that are made to ensure facilities can be placed in service and made operational in a safe manner.

Q. IS ANY OTHER WITNESS SUBMITTING TESTIMONY ON THIS ISSUE?

A. Company witness Michael Noack is also submitting rebuttal testimony on this issue in which he explains why capitalization is a preferred accounting treatment for this item and why adoption of OPC's recommended approach would result in a higher revenue requirement for customers in this case.

Q. WHAT IS THE SECOND ISSUE YOU WILL BE ADDRESSING?

A. The second issue relates to Mr. Hyneman's assertion that that the Commission should disallow certain costs previously collected by the Company through its ISRS mechanism because the Company replaced cast iron main that contained incidental patches of plastic, and replaced some plastic service lines as part of its cast iron replacement program. As I will discuss, Mr. Hyneman's proposed disallowance – which he makes no effort to quantify in his direct testimony – should be rejected by the Commission because it is based on a demonstrably false premise. Specifically, I will explain why Mr. Hyneman is simply incorrect when he asserts that the Company has spent "million and millions of dollars" to replace such plastic pipe. In fact, by replacing this incidental pipe as part of its cast iron program, the Company has actually saved its customers millions and millions of dollars and, in the process, constructed a far safer and more reliable system than would have been the case had it not done so. As a result, there is absolutely no basis for OPC's proposed adjustment.

II. TREATMENT OF HYDROSTATIC TESTING COSTS

Q. PLEASE EXPLAIN WHAT HYDROSTATIC TESTING IS IN THE CONTEXT OF NATURAL GAS PIPELINE FACILITIES.

A. Hydrostatic testing of natural gas pipelines is a pressure test process where a pipeline is taken out of service and tested for strength and possible leaks by filling the pipeline with pressurized water. Hydrostatic testing has long been used to determine, verify and improve pipeline integrity.

Q. WHAT SPECIFIC FLAWS CAN A HYDROSTATIC TEST IDENTIFY?

A. Several types of flaws can be detected through hydrostatic testing, including manufacturing defects, stress corrosion cracking, galvanic corrosion, internal corrosion, mechanical damage, and weld defects. One of the key objectives of the test is to find possible flaws that exist in the pipeline. The test creates a certain amount of stress for a given time to allow these possible flaws to be exposed as leakages. The test pressure is designed to provide a sufficient tolerance between itself and the maximum operating pressure such that surviving flaws in the pipeline shall not grow over time after the pipeline is placed into service at the intended operating pressure.

Q. DO FEDERAL SAFETY REGULATIONS REQUIRE THAT CERTAIN FACILITIES BE HYDROSTATICALLY-TESTED?

A. Yes, federal pipeline safety regulations require that pipeline operators subject all newly constructed pipelines to a post construction pressure test, and to keep records of that pressure test. Hydrostatic testing is the method used by the Company to perform these tests on natural gas transmission lines, which are typically the larger, highest pressure lines in the system. The cost of the test is included with the capital cost of constructing the pipeline. The current federal requirements came into existence in 1970 with the inception of the federal pipeline safety code. All pipelines installed after July 1970 require a documented one-time pressure test completed in compliance with regulatory requirements to establish a Maximum Allowable Operating Pressure (MAOP). Pipelines installed prior to 1970 must meet either a specific pressure test, operating history, or design requirements as outlined in 4 CSR 240-40.030(12)(M) [49 CFR part 192.616] to establish an MAOP. Additionally, pressure testing is one acceptable option to assess certain threats defined by 4 CSR 240-40.030(16), Pipeline Integrity Management for Transmission Lines [49 CFR

part 192 Subpart O]. Furthermore, an advisory bulletin issued by DOT's Pipeline Hazardous Materials Safety Administration (PHMSA) on January 10, 2011, provided specific regulatory interpretations that placed a renewed focus on locating and verifying the records of historical pressure tests of transmission pipelines.

Q. WHY DID PHMSA PLACE A RENEWED FOCUS ON HYDROSTATIC TESTING IN JANUARY 2011?

A. The renewed focus occurred as a result of the September 2010 explosion in San Bruno, California resulting from a natural gas transmission pipeline failure. PHMSA sought to have pipeline operators undertake detailed threat and risk analyses that integrate accurate data and information from their entire pipeline system, especially when calculating MAOP. In doing so, PHMSA stated that "PHMSA's goal is to improve the overall integrity of pipeline systems and reduce risks." The identification and review of hydrostatic pressure testing records is a key component in ensuring the adequacy of MAOP calculations for transmission lines. PHMSA's new interpretations stated that traceable, verifiable and complete records were necessary which led the Company to determine that certain hydrostatic testing projects were required.

Q. WHAT ARE THE CONSEQUENCES IF HYDROSTATIC TESTING IS NOT DONE ON A PIPELINE FACILITY WHERE IT IS REQUIRED?

A. The choice would be for the Company to perform a hydrostatic test or replace the line. The test is required to determine if the line is safe to operate at its MAOP. If the line passes, the hydrostatic test successfully extended the life of the line and avoided the cost of replacement. If the line fails the test and an unacceptable flaw is identified, the Company can often make an investment during the test to enhance the integrity of the line. However,

if the line needs to be replaced, the new line must still be subjected to a one-time post construction hydrostatic test that also becomes part of the capital cost of the line.

Q. SO THE EXPENDITURE FOR HYDROSTATIC TESTING ALLOWS THE PIPELINE FACILITY TO BE PLACED BACK IN SERVICE AND PERFORM ITS INTENDED FUNCTION?

A. Yes. The completion of a one-time hydrostatic pressure test will allow these pipelines to continue to be operated and maintained into the future in a similar manner as a newly constructed pipeline.

Q. HOW IS OPC PROPOSING TO ACCOUNT FOR THESE HYDROSTATING TESTING COSTS?

A. At pages 33-35 of his direct testimony OPC witness Charles Hyneman is proposing that these costs be treated as an expense item rather than capitalized and recovered over the remaining life of the facility. He also proposes to disallow certain hydrostatic costs that the Company capitalized and began to recover in ISRS charges that were approved by the Commission in filings made prior to when OPC first raised the hydrostatic testing issue in the Company's most recent ISRS filings.

Q. DO YOU AGREE WITH THESE RECOMMENDATIONS?

A. No. In terms of OPC's proposal to disallow certain hydrostatic testing costs that were included in previous ISRS charges approved by the Commission, I have been advised by legal counsel that that such a disallowance is inappropriate since it concerns an eligibility (rather than prudence) issue that must be raised at the time an ISRS filing is made, not years later in a rate case. Indeed, Mr. Hyneman himself has testified before this Commission that the focus in an ISRS proceeding is ISRS eligibility, as contemplated by

Section 393.1015.2(4). In response to questions from his counsel in Case Nos. GO-2016-0332 and GO-2016-0333, Mr. Hyneman testified as follows:

> Q. Could we raise prudence issues in this?
>
> A. No.
>
> Q. What is the purpose of this case?
>
> A. To determine that the costs that are going to be charged in the surcharge are ISRS eligible costs and it's calculated correctly.
>
> Q. And that's the only issue?
>
> A. **That's the whole thing**. (Emphasis added)[1]

Q. HOW ABOUT OPC'S RECOMMENDATION THAT HYDROSTATIC TESTS SHOULD BE EXPENSED RATHER CAPITALIZED?

A. I disagree with that recommendation as well for several reasons. First, contrary to what Mr. Hyneman implies in his testimony, as more fully discussed below, the Commission has made no determination that such costs should be expensed rather than capitalized. Second, hydrostatic testing costs are a one-time expenditure that serve the same purpose as similar one-time pipeline testing costs that have been routinely capitalized for many years, namely to permit a particular asset to be safely placed in service or, in this case, to be placed back in service. Third, because the incurrence and amount of these expenditures can vary from year to year, capitalization can better ensure that such costs are not over or under recovered over time. Finally, expensing of these costs, as proposed by OPC, would require that the Company's revenue requirement and rates be increased significantly above the

[1] Transcript of Evidentiary Hearing, Vol. I, January 3, 2017, page 248, lines 7-14, Case Nos. GO-2016-0332 and GO-2016-0333.

level being proposed by the Company in order to establish an ongoing allowance for such expenditures.

Q. WHY IS MR. HYNEMAN INCORRECT IN SUGGESTING THAT THE COMMISSION HAS ALREADY DETERMINED THAT HYDROSTATIC TESTING COST SHOULD BE EXPENSED RATHER THAN CAPITALIZED?

A. As someone who also participated in the ISRS cases in which OPC first raised the issue of whether hydrostatic testing costs were ISRS-eligible, I am aware that OPC also raised the issue of whether such costs should be expensed or capitalized. I have reviewed the Commission's Report and Order which resolved these issues. While Mr. Hyneman is correct that the Commission determined that such costs were not ISRS-eligible, it did not reach or even attempt to resolve the issue of whether such costs should be expensed or capitalized. Any implication to the contrary is inaccurate.

Q. PLEASE EXPLAIN YOUR STATEMENT THAT CAPITALIZATION RATHER THAN EXPENSING OF THESE COSTS IS APPROPRIATE GIVEN THE NATURE OF SUCH COSTS AND THE REASON THEY ARE BEING INCURRED.

A. Whenever a utility installs a new main or service, it is tested, pursuant to applicable safety requirements, to ensure that it has no physical defects that would preclude it from operating properly and safely. The costs incurred to perform such testing are a one-time expenditure and are properly capitalized as part of the cost of the asset. The hydrostatic testing costs at issue here serve an identical purpose. As I previously discussed, they too are incurred on a one-time basis, are mandated by applicable safety regulations and are necessary to establish an MAOP and ensure that the pipeline has no physical defects that would preclude it from operating properly and safely. The only difference – and it is a difference without

a distinction – is that hydrostatic testing costs are incurred to ensure that the asset can be placed back into service rather than placed into service for the first time.

Q. DOES CAPITALIZATION ALSO ENSURE THAT THESE ONE-TIME COSTS WILL BE MORE APPROPRIATELY AND ACCURATELY RECOVERED FROM CUSTOMERS OVER TIME?

A. Yes. As discussed more fully by Company witness Mike Noack, capitalization means that the hydrostatic testing costs incurred to qualify this asset to provide service to customer for years into the future will be spread over the remaining useful life of the asset rather than recovered immediately from customers, as is the case with expenses. As a result, customers will pay for this cost in better proportion to how they are benefitting from the asset over time. In addition, it is my understanding that capitalization will better ensure that these costs, which can vary from year to year, will not be over or under-recovered from customers.

Q. SHOULD THE COMMISSION NEVERTHELESS AGREE THAT THESE HYDROSTATIC COSTS SHOULD BE EXPENSED RATHER THAN CAPITALIZED, WOULD AN UPWARD ADJUSTMENT NEED TO BE MADE TO THE COMPANY'S REVENUE REQUIREMENT AND RATES IN THIS CASE?

A. Yes. As explained by Company witness Noack, adoption of OPC's proposal would require that an allowance for hydrostatic testing expenditures be added to the Company's revenue requirement in this case. While Mr. Noack quantifies the amount of this adjustment in his rebuttal testimony, I would simply note that it is significantly greater than the revenue requirement amount resulting from the Company's capitalization of these costs. Regardless of the technical accounting considerations, I consider this upward impact on

rates to be yet another factor that warrants the capitalization treatment being proposed by the Company in these proceedings.

III. INCIDENTAL REPLACEMENT OF PLASTIC FACILITIES

Q. HAVE YOU REVIEWED MR. HYNEMAN'S TESTIMONY AND RECOMMENDATIONS REGARDING THE COSTS HE CLAIMS HAVE BEEN INCURRED BY THE COMPANY IN CONNECTION WITH THE INCIDENTIAL REPLACEMENT OF PLASTIC MAIN AND SERVICES THAT HAS OCCURRED DURING THE COURSE OF THE COMPANY'S CAST IRON REPLACMENT PROGRAM?

A. Yes. Mr. Hyneman has proposed that the Commission disallow in this proceeding certain costs that have been collected through MGE's or LAC's ISRS mechanism because they were allegedly incurred to replace some plastic mains and services as part of the operating units' cast iron and unprotected steel replacement programs. According to Mr. Hyneman, MGE and LAC have spent "millions and millions of dollars" to replace these plastic facilities and since they were not in a worn-out or deteriorated condition, they were not eligible for ISRS inclusion.

Q. HAS THE COMMISSION PREVIOUSLY REJECTED OPC'S POSITION ON THIS ISSUE?

A. Yes. Unlike the issue of whether hydrostatic testing expenditures should be capitalized or expensed, the Commission actually reached and ruled upon this issue in the Company's most recent ISRS cases. In doing so, the Commission rejected OPC's contention that alleged costs associated with the replacement of these plastic facilities should be excluded from the Company's ISRS mechanism. As Mr. Hyneman notes, OPC has appealed the

Commission's decision and OPC seeks to preserve its ability in these cases to adjust the Company's cost of service should it prevail on appeal.

Q. DO YOU BELIEVE THAT THE COMMISSION SHOULD CONSIDER PRESERVING OPC'S ABILITY TO MAKE A DISALLOWANCE FOR THESE COSTS SHOULD IT PREVAIL ON APPEAL?

A. No, I do not. First, OPC is continuing to propose that some amount of costs be excluded from the Company's ISRS filings for the costs supposedly incurred to replace these plastic facilities, without ever providing a quantification of those costs or even a method for calculating them. OPC did not provide such critical information in the Company's last ISRS filings nor have they done so in these rate cases. I have been advised by legal counsel that it should have done so in its direct testimony if it wanted to preserve that issue for Commission consideration.

Q. DOES THAT MEAN YOU CAN'T OFFER ANY OPINION REGARDING THE MERITS OF OPC'S POSITION?

A. No. Even without the benefit of any information on how OPC would quantify its proposed adjustment, I can state that there is no real basis for a disallowance of any amount.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THERE IS NO BASIS FOR A DISALLOWANCE OF ANY AMOUNT RELATING TO THIS ISSUE.

A. There is no basis for a disallowance of any amount because OPC's entire position on this issue rests on the false assumption that the Company has incurred some additional cost in connection with its incidental replacement of these plastic facilities. That is simply not correct. In fact, the opposite is true. Specifically, by replacing these patches of plastic pipe as part of its cast iron and unprotected steel replacement programs, the Company has

actually saved its customers millions of dollars in costs that they would otherwise have to pay for in rates.

Q. EXACTLY HOW HAS THE COMPANY SAVED ITS CUSTOMERS MONEY BY REPLACING PLASTIC PIPE AS PART OF ITS CAST IRON AND UNPROTECTED STEEL REPLACMENT PROGRAMS?

A. As the Commission recognized in rejecting OPC's position on this issue in the Company's last ISRS proceedings, it would have been uneconomic, unsafe and operationally impractical to even try and integrate the newer plastic pipe being installed as part of the cast iron and unprotected steel replacement programs with the scattered segments of older plastic pipe.

Q. PLEASE EXPLAIN WHY IT WOULD HAVE BEEN UNECONOMIC TO COMPLETE THESE PROJECTS IN A MANNER THAT CONTINUED TO UTILIZE THE PLASTIC PIPE THAT WAS REPLACED?

A. The existing pieces of plastic main vary in length from just a few feet to several hundred feet. Plastic mains were typically installed as a repair or replacement of a specific portion of cast iron or unprotected steel main to address the safety and integrity of the system. Several years ago, Laclede ended its focus on piecemeal repairs and replacements and developed a strategic plan to orderly and efficiently accelerate the elimination of cast iron and steel. Our plan is to bring customers a safer system faster and in a cost-effective manner.

Q. PLEASE CONTINUE.

A. Cast iron and the subject steel mains are typically installed deeper than is required or necessary for plastic pipe; however the original plastic pipe installed as piecemeal

replacements had to be installed at the same depth to connect to the older main. These older mains are also commonly under pavement which is currently avoided where possible when we install plastic pipe for replacement of these mains. Installing pipe at greater depths and under pavement significantly drives up cost. An attempt to utilize the plastic pipe that is being replaced would require tie-in connections at a greater depth and in locations often under pavement which would significantly drive up cost. Similar issues exist for many of our plastic service lines. The main tie-in connection would be at a completely different location and depth from the previous location before the main was replaced. Additionally, where feasible the Company moves meters located inside to an outside location. If a plastic service line is serving an inside meter the new outside meter may have to be at an entirely different location than the previous point of entry into the customer's building. Service lines are an integral part of the distribution system feeding our customers. If the main is being replaced in a different location then the services also must be relocated and replaced. Because of these considerations, it is far more economic and cost effective to abandon the incidental patches of plastic facilities at the same time the cast iron or unprotected steel facilities are being replaced and install a single unified pipeline system than it would be to try and integrate the new pipeline facilities with these patches of older plastic mains and services.

Q. HAS THE COMPANY CONDUCTED ANY ANALYSIS TO CONFIRM THAT IT IS, IN FACT, SAVING MONEY WITH THIS APPROACH?

A. Originally, the Company had not performed an engineering analysis because engineering personnel considered it axiomatic that bypassing the old main would be less expensive than tying into it. We have now performed such an analysis. Attached as Schedule MDL-R1

to my Rebuttal Testimony is an engineering analysis that was performed on an actual cast iron replacement project in which 2549 feet of main was replaced, consisting of 2330 feet of cast iron main and two small patches of plastic pipe totaling 219 feet. This project is representative of what the Company typically encounters when it replaces cast iron main as part of its replacement program. Using our standard analytical tools for estimating construction costs, the engineering analysis estimated the cost to install one continuous plastic main to bypass the cast iron facilities and plastic pipe versus replacing only cast iron facilities and tying the new pipe into the older plastic patches.

Q. WHAT WERE THE RESULTS OF THIS ANALYSIS?

A. It was about 20% more expensive to use the plastic patches rather than bypassing them. The extra cost arises from extra tie-in holes and fittings that are needed to incorporate the plastic patches into the new main. In summary, there is no cost, but rather a cost savings associated with replacing the older plastic piping.

Q. DID THE COMPANY ANALYZE A DIFFERENT WAY TO REPLACE THE CAST IRON MAIN?

A. Yes. Prior to 2011, the Company was not strategically replacing entire neighborhoods of cast iron, but rather patching areas of cast iron that were leaking and needed attention. This is how the two plastic patches became interspersed in this cast iron main. The Company looked at the cost to perform the two patches and found the cost to be about $76,400 to install 219 feet of plastic main. If the Company continued with a piecemeal approach at this pace, it would take 23 excavations in this neighborhood to ultimately complete the replacement of the entire 2,549 feet of main at a total cost of just under $900,000, versus the $285,600 to bypass the entire main in one job.

Q. ISN'T IT POSSIBLE THAT THERE COULD BE INSTANCES WHERE THE REVERSE WOULD BE TRUE, AND IT WOULD BE LESS EXPENSIVE TO REPLACE THE CAST IRON FACILITIES BY TYING INTO THE EXISTING PLASTIC FACILITIES?

A. Based on my experience, I believe such instances would be rare and certainly not sufficient to offset the overwhelming savings associated with the far more numerous instances where it is more cost effective to replace both the cast iron or bare steel facilities and the older plastic facilities.

Q. ASIDE FROM THESE ECONOMIC CONSIDERATIONS, WOULD CONTINUED USE OF THESE PLASTIC PIPELINE SEGMENTS COMPROMISE THE SAFETY AND OPERATIONAL INTEGRITY OF THE COMPANY'S DISRIBUITION SYSTEM?

A. Yes, in several ways. The very nature of the construction process required to create deeper excavations and in locations which are generally exposed to more traffic creates higher safety risk for our crews. Also, the additional tie-in points would increase the number of connections and fittings required, which in general increases the risk of future leakage. Additionally, continuing to use these plastic segments may cause installations in non-standard locations which may be more difficult to locate causing higher risk of third party damage.

Q. GIVEN ALL OF THESE CONSIDERATIONS, IS THERE ANY CONCEIVABLE BASIS FOR OPC'S PROPOSED DISALLOWANCE?

A. No. As I indicated earlier in my testimony, after nearly a year of discovery, OPC has still failed to quantify a disallowance relating to the plastic issue or even offer a method for

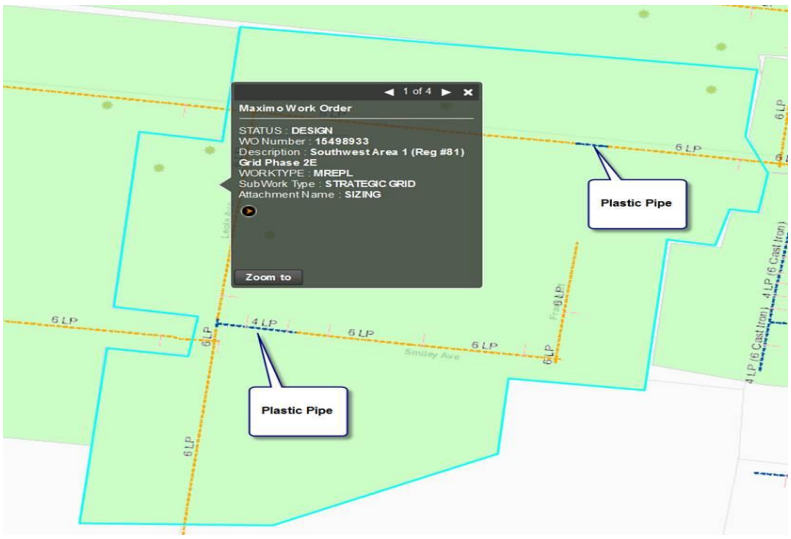
calculating such a disallowance. In the end, I think this persistent failure is a natural byproduct of the fact that there are simply no additional costs that have been incurred by the Company as a result of its incidental replacement of some plastic pipe as part of its cast iron and unprotected steel replacement programs. OPC's contention to the contrary is based on nothing more than a completely unsupported and entirely fictitious assumption that such additional costs have been incurred. Its attempt to continue this obvious fiction should be rejected by the Commission.

Q. **DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?**

A. Yes.

	Scenario 1 - All New Pipe	Scenario 2 – Utilize Existing Plastic	WO 60181	WO 60933
Cast Iron Abandoned	2384'	2384'	51′	9′, (319')*
Plastic Installed	2549'	2330'	51′	168′
Plastic Existing Used	NA	219′	NA	NA
Total Plastic Pipe	2549'	2549'	51'	168'
Cost	$285,634.75	$341,132.05	$29,417.88	$46,989.21

*319' of Steel main was abandoned in the alley between Franke Ct and Tamm Ave. Originally there was no main where the plastic was installed in this WO.



MDL-R1

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Laclede Gas Company to Change its Infrastructure System Replacement Surcharge in its Laclede Gas Service Territory	))))	**File No. GO-2016-0333**
In the Matter of the Application of Laclede Gas Company to Change its Infrastructure System Replacement Surcharge in its Missouri Gas Energy Service Territory	))))	**File No. GO-2016-0332**
In the Matter of the Application of Laclede Gas Company to Change its Infrastructure System Replacement Surcharge in its Missouri Gas Energy Service Territory	))))	**File No. GO-2017-0201**
In the Matter of the Application of Laclede Gas Company to Change its Infrastructure System Replacement Surcharge in its Laclede Gas Service Territory	))))	**File No. GO-2017-0202**
In the Matter of the Application of Spire Missouri Inc. to Establish an Infrastructure System Replacement Surcharge in its Spire Missouri East Service Territory	))))	**File No. GO-2018-0309**
In the Matter of the Application of Spire Missouri Inc. to Establish an Infrastructure System Replacement Surcharge in its Spire Missouri West Service Territory	))))	**File No. GO-2018-0310**

AFFIDAVIT

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

Mark D. Lauber, of lawful age, being first duly sworn, deposes and states:

1. My name is Mark D. Lauber. I am Director, Health, Safety and Environmental for Spire Missouri Inc. My business address is 700 Market St., St Louis, Missouri, 63101.

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.

Mark D. Lauber

Subscribed and sworn to before me this 22nd day of August 2018.

Jackie M. McCain
Notary Public

My Commission Expires:
July 18, 2020