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## Missouri Public Service Commission

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January 8, 2002

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Missouri Public Service Commission  
P. O. Box 360  
Jefferson City, MO 65102

**FILED<sup>3</sup>**  
JAN 08 2002

**RE: Case No. GO-99-155**

Missouri Public  
Service Commission

Dear Mr. Roberts:

Enclosed for filing in the above-captioned case are an original and eight (8) conformed copies of a **MOTION TO FILE REPORT REGARDING LACLEDE'S COPPER SERVICE LINE REPLACEMENT PROGRAM.**

This filing has been mailed or hand-delivered this date to all counsel of record.

Thank you for your attention to this matter.

Sincerely yours,

Lera L. Shemwell  
Associate General Counsel  
(573) 751-7431  
(573) 751-9285 (Fax)

LLS:sw  
Enclosure  
cc: Counsel of Record

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

**FILED<sup>3</sup>**

JAN 08 2002

In the Matter of the Adequacy of           )  
Laclede Gas Company's Service Line       )  
Replacement Program and Leak Survey      )  
Procedures.                                    )

Missouri Public  
Service Commission

Case No. GO-99-155

**MOTION TO FILE REPORT REGARDING**

**LACLEDE'S COPPER SERVICE LINE REPLACEMENT PROGRAM**

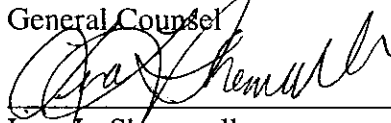
COMES NOW the Staff and for its Motion to File the attached Memorandum to the Commission pertaining Staff's monitoring of Laclede Gas Company's copper-service-line replacement program and Laclede's leak surveys and investigations states as follows:

1. During one of its October 2001 Agenda meetings, the Commission requested that Staff provide an update to the Commission concerning Laclede's direct-buried copper-service-line replacement program.
2. In response to that request, the Staff has prepared and hereby submits the attached Memorandum to this case.
3. Staff has and will continue to monitor the effectiveness of Laclede's direct-buried service-line replacement program and leak surveys to assure compliance with the Commission's safety rules and with the provisions of the Stipulation and Agreement in this Case. The Commission may be assured that, if at any time during the existence of this program, Staff believes that changes must be made, Staff will file a notice with the Commission and will recommend that the Commission order any necessary action to address Staff's concerns.

WHEREFORE Staff moves that the Commission accept the attached Memorandum for filing in the above captioned case.

Respectfully submitted,

DANA K. JOYCE  
General Counsel



Lera L. Shemwell  
Assistant General Counsel  
Missouri Bar No. 43792

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**Certificate of Service**

I hereby certify that copies of the foregoing has been mailed first-class mail, postage prepaid, sent via facsimile, or hand-delivered to all counsel of record as shown on the attached service list this 8th day of January, 2002.




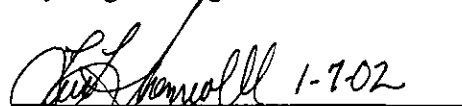
Lera L. Shemwell

## MEMORANDUM

TO: Missouri Public Service Commission Official Case File  
Case No. GO-99-155, Laclede Gas Company

FROM: Michael Loethen, Energy Department <sup>ML</sup> – Safety/Engineering

  
Project Coordinator / Date

  
General Counsel's Office / Date

DATE: January 7, 2002

SUBJECT: Commission Request for Staff Update Report to Laclede's Copper Service Line Program Pertaining to Case No. GO-99-155.

The Missouri Public Service Commission (MoPSC or Commission) requested, during one of its October 2001 Agenda meetings, that the MoPSC Energy Department – Safety/Engineering (Staff) provide an update report summarizing Laclede Gas Company's (Laclede or Company) copper service line program. In response to this request, Staff provides the attached update report, summarizing data obtained (through November 2001) during Staff's ongoing monitoring of the program's progress, which addresses information relevant to the adequacy of Laclede's copper service line replacement program, and the effectiveness of the Company's leak surveys and investigations. This report is in addition to the update report that is ordered due after the completion of the program's third year (March 1, 2003) and should not be considered as a cancellation or substitute of that Commission ordered report.

### **REPORT OVERVIEW:**

Staff provides the following update report pertaining to Paragraph 7 (the guidelines), of the Unanimous Stipulation and Agreement (Agreement) in Case No. GO-99-155, Laclede Gas Company's direct-buried copper service line program. The collection of data used to compile this summary was received through Company written correspondences and/or on-site investigations. Company information available as of November 21, 2001, indicated that Laclede was in compliance with the requirements of the Stipulation and Agreement and expects to meet their 2001-2002 annual goal of 8,000 relays and/or renewals of direct-buried copper services. Actions taken by Laclede to comply with the items of Paragraph 7 that pertain to the relay/renewal and leak surveying of the Company's direct-buried copper service lines are addressed below.

**PROGRAM REVIEW:**

It's been three and one-half years since two natural gas incidents, GS-98-422 (Pralle Lane) and GS-98-423 (Bergerac Drive), occurred within days of each other, both involving Laclede's direct-buried copper service lines. Staff's investigation into these cases initiated the creation of Case No. GO-99-155. The Staff has been working diligently for the past three and one-half years to assure public safety and to resolve a real problem occurring with Laclede's direct-buried copper service lines. The creation of Case No. GO-99-155 resulted in a Commission ordered program that is designed to address Laclede's direct-buried copper service lines, specifically the establishment of a 10 percent annual relay/renewal rate of such services, and incorporation of a specialized bar-hole leak survey. The annual relay/renewal rate of these copper services was based upon previous 10 percent replacement programs established in the early 1990's for unprotected steel service lines, which have been successful in protecting the public. The bar-hole leak survey, which involves strategically making a hole in the soil (i.e., at the service line connection to the main) over the service line to facilitate the detection of a leak with a leak detection instrument, has been effective in detecting leaks and useful for prioritizing leak repairs and replacements.

For the past two years, results from bar-hole leak surveys have shown a moderate downward trend in the actual total number of new leaks on copper services, but the results also indicate that continuation of the specialized leak surveys is needed. Note, as part of the Agreement, Class 3 leaks (non-hazardous leaks) detected during an annual bar-hole survey are required to be repaired, at the latest, within a year of discovery. Therefore, it's significant to note that the leaks found in a previous year's bar-hole survey are repaired prior to the following year's bar-hole survey. This requirement of the Agreement exceeds the MoPSC minimum pipeline safety regulations (require 3-year leak surveys on most residential service lines and Class 3 leaks to be monitored every 6-months until repaired) and the Federal minimum pipeline safety requirements (require 5-year leak surveys on most residential service lines). Class 1 leaks (hazardous leaks) and Class 2 leaks are treated by Laclede as required by the MoPSC pipeline safety regulations – these are leaks that, upon discovery, require immediate or prompt action to be taken.

The following data pertaining to the program, and other information, are being closely monitored by Staff and will be utilized to complete the required program re-evaluation (Subparagraph 7h) after the third year of this program. As indicated above, the general guidelines pertaining to the relay/renewal and leak surveying requirements of the program are summarized below.

## STAFF INVESTIGATION / REPORT:

### PROGRAM GENERAL GUIDELINES

#### Subparagraph 7a Actual Number of Direct-Buried Copper Services

A March 1, 2000, correspondence from Laclede identified 76,966 as the actual total number of direct-buried copper service lines that had not already had the portion of the service line in the right-of-way under the street and within twelve feet of the service tap relayed since 1991. This is the total number of direct-buried copper services applicable to the renewal/relay criteria of the program, which, prior to the Agreement, was not accurately known. Providing this number to Staff satisfied the requirements of Paragraph 7a.

Note: The actual total number of direct-buried copper service lines that existed on January 2000, was over 81,500, which included those that had the portion of the service in the right-of-way partially replaced since 1991. Any of these partial replacements that do not meet the terms of the Agreement must be relayed (defined in the following paragraph) in order to satisfy the program's requirements. Essentially, Laclede's copper service lines, meaning a service with any below grade portion consisting of copper piping, can be placed into three category types: inserted hard-copper, direct-buried soft copper, and copper pigtails (small portions of soft copper piping used to connect services to meter risers and service line taps at the main). Case No. GO-99-155 is the only Commission ordered program for copper services and only applies to Laclede's direct-buried copper services.

#### Subparagraph 7b Describes Qualifying Relay for Short-side and Long-side Services

This subparagraph prescribes the amount of copper piping that shall be removed from a service line to qualify as a relay. A "relay" is a very specific term of the Agreement, while it can be loosely described as a "partial replacement," it means, for purposes of the Agreement, a defined amount of pipe at a certain location that is required to be removed from the copper service line. It's important to understand that in accordance with the Agreement, Laclede is required to perform 8,000 relays annually, unless otherwise ordered by the Commission. Therefore, any copper service that has had a portion partially replaced but that does not meet the specific requirements of a relay remains in the program. For purposes of this update report, Laclede shall relay short-side services (a service line serving a customer on the same side of the street as the main), at a minimum, from the tee connection at the main to a point twelve feet beyond the street pavement edge or tee, which ever is greater. For long-sided services, relays shall be, at a minimum, twelve feet beyond the pavement edge (See Figure 1).

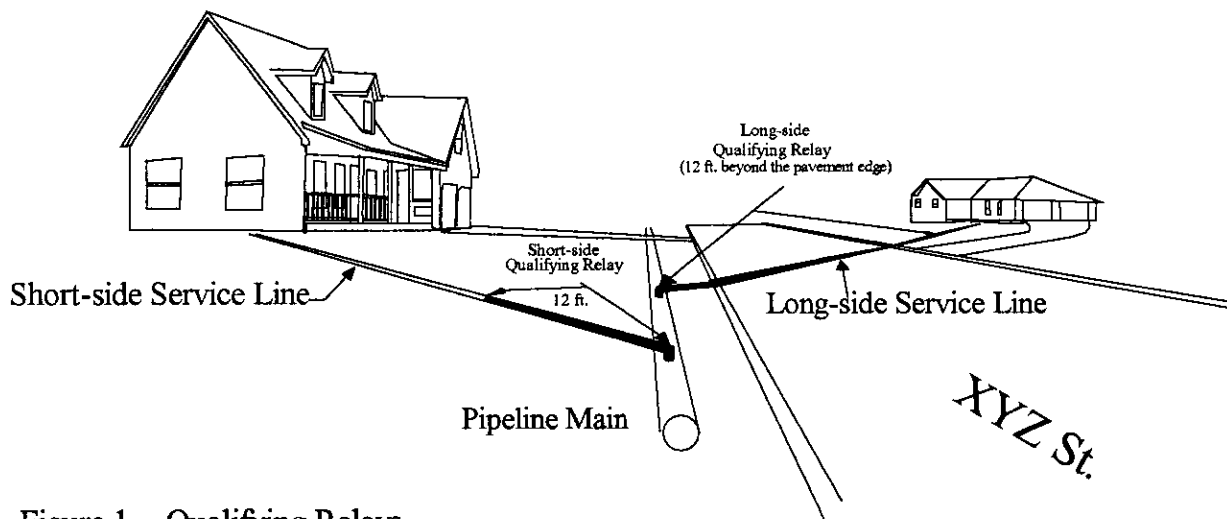


Figure 1. - Qualifying Relays

Relays were agreed to by Staff, Public Counsel, and Laclede, in part, to facilitate the removal of copper services from areas susceptible to road salts. However, construction practices during the first year of the program were modified for efficiency, and Laclede determined full main crews conducting blanket replacements in a given area generally performed best. After completing one year of the program, which ended March 1, 2000, over 8,800 relays and renewals were made with the better part, approximately 74 percent, consisting of renewals (complete replacement from main to meter). Of the required 8,000 service lines relayed or renewed, a higher percentage of renewals are expected following completion of the program's second year.

Emergency responses to complete individual repairs are now the primary reason that Laclede performs relays, as indicated to Staff and reflected in Company reports. Based on the relays witnessed in the field and Company records of completed relays that were reviewed, Staff believes Laclede has, to date, conducted qualifying relays and satisfied the requirements of this subparagraph.

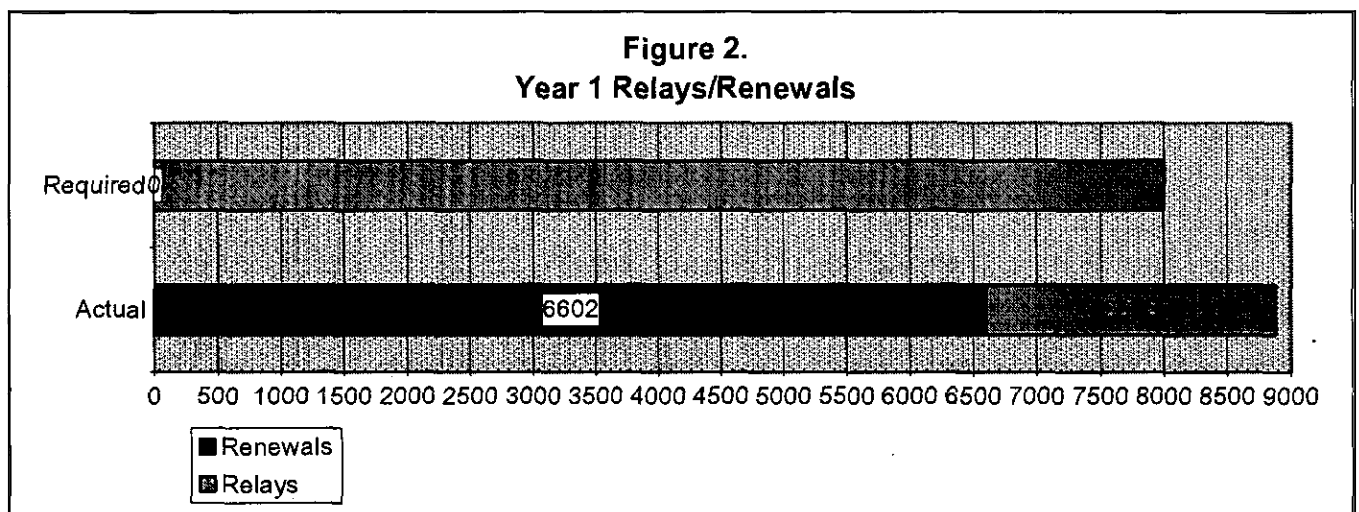
Subparagraph 7c. Renewals for Leaking Services

This subparagraph prescribes that Laclede shall renew any direct-buried copper service line found leaking at the riser and the tee during the bar-hole survey, as well as any direct-buried copper service lines found leaking at the riser as a result of the 90 psi air test conducted subsequent to the installation of a copper service relay. The foundation for this requirement was based upon common sense. It did not make practical sense to conduct repairs at the main and at the meter and not replace the entire service. As previously mentioned, Laclede has been conducting primarily renewals, and only making relays during emergency repair situations where time doesn't permit a complete main-to-meter replacement. The Laclede records that were

reviewed by Staff showed that Laclede has satisfactorily met the requirements of this subparagraph.

Subparagraph 7d Annual Rate of Relays/Renewals

Pursuant to this subparagraph of the Agreement, Laclede is required to relay or renew direct-buried copper services at a rate of 8,000 service lines for each annual period commencing on March 1, 2000, and on each March 1<sup>st</sup> thereafter, unless, or until such time as, a new rate is approved by the Commission. Leaking copper services are given priority, and bar-hole leak survey results are used, in part, to prioritize areas for blanket relays/renewals. Figure 2 graphically shows the breakdown of relays and renewals completed the first year of the program.



Note: A relay is a specific term of the Agreement that means, in part, replacing copper piping, at a minimum, from the tee connection at the main to a point 12 ft. beyond the street pavement edge or tee, whichever is greater (See Figure 1). A renewal is a complete replacement from main to meter.

Not separately identified in Figure 2 are the renewals Laclede completed from January 1 to March 1, 2000, which was approximately 600 renewals. As part of the Stipulation and Agreement, in the first year Laclede was allowed to count qualifying relays/renewals completed after January 1, 2000. Excluding these approximately 600 renewals, Laclede met the 8,000 service line total for the first year.

Specified Laclede personnel complete daily totals, compare daily/monthly totals to targeted rates of relays/renewals, review construction crew progress, and attend weekly meetings with Company executives to address the status of the program. After June 2001, Laclede was slightly ahead of its targeted relays/renewals schedule, but since then dropped below its target number for the month of September 2001. This was not completely unexpected by Staff, as Laclede



diverted some construction resources from its direct-buried copper program to meet, by October 2001, its cast iron replacement program requirements.

From past discussions, Staff and Laclede understood that the projected monthly totals are only averages, and do not reflect the actual number of services that will be relayed/renewed during a particular month. Some months will need to have higher totals in order to compensate for winter months when construction can be hindered due to inclement weather. Laclede personnel are evaluating construction resources in order to meet the 8,000 service line requirement of the Agreement. In mid-November, the workforce that is dedicated to the copper service program was significantly increased to compensate for workforce changes made during August-September while satisfying the Company's cast iron replacement program requirements. For the remainder of the 2001-2002 program year, Staff will conduct monthly reviews of Laclede's continuing efforts to meet the 8,000 service line requirement and evaluate the overall effectiveness of the program.

Subparagraph 7e Bar-hole Surveys

Beginning in March 2000, Laclede must complete an annual bar-hole survey for three years, with each survey completed by July 1<sup>st</sup> of that year. Once Laclede and Staff agreed that leak surveyors should be provided with the location of the service line connection to the main (required by Subparagraph 7 l), bar-holes were strategically made over the copper service line to facilitate both the venting and detection of any subsurface leak. As part of the Agreement, if a qualifying relay has been made on a direct-buried copper service line, that service line is then excluded from the program and will no longer qualify for the annual bar-hole survey, but will be leak surveyed annually with the exclusion of the strategic bar-holes being made over the service. This, in part, explains the difference between the number of direct-buried copper totals of 81,500 and 76,966 noted earlier. In other words, the difference in the two totals are service lines that do not meet the requirements of a qualifying relay (76,966) and those services that meet the requirements of a qualifying relay but because a portion of the direct-buried copper service remains in the ground, the service is still considered to be a copper service line.

Laclede sent an October 1999 correspondence, in response to Staff Memorandum and Proposals in Case No. GO-99-155, that disclosed survey results from a 1999 bar-hole survey that was conducted over 84,786 direct-buried copper services, with 3,145 leaks detected. As of January 2000, a total of 77,654 direct-buried copper services qualified for the annual bar-hole survey. The total number of detected leaks found during the Year 2000 bar-hole survey (completed by July 2000) were similar to the total number of detected leaks that was disclosed in the October 1999 Laclede correspondence. However, because the relay/renewal program rate of 8,000 services did not commence until Year 2000, a large portion of the leaks detected during the Year

2000 bar-hole survey were leaks detected (and not repaired) from the previous bar-hole survey conducted in 1999.

At the end of the program's first year (March 1, 2001), a total of 68,440 copper services qualified for the annual bar-hole survey. Again, Laclede completed the annual bar-hole survey prior to July 1<sup>st</sup> of the year and leak totals were computed. Following each Laclede annual bar-hole survey, Staff reviewed results and Company personnel explained how the data would be used to schedule future relays and renewals. Field inspections of Laclede personnel performing bar-hole surveys were also incorporated as part of Staff's review and then used to evaluate the effectiveness of the bar-hole surveys. As mentioned in the Program Review section above, the total number of new leaks found has dropped moderately from the Year 2000 to the Year 2001 bar-hole surveys, and will be closely watched during future leak surveys.

Subparagraph 7f & g Repair Time for Leaks Found

Class 3 leaks found in Pressure Region 1<sup>1</sup> during the annual bar-hole survey must be relayed/renewed within six months of identification or prior to the end of that calendar year, whichever occurs first. Any Class 3 leak found in Pressure Region 2 during the annual bar-hole survey, or any Class 3 leak found outside of the bar-hole survey, with priority given to Pressure Region 1 leaks, must be relayed/renewed within one year of identification. The Laclede records that were reviewed by Staff showed that Laclede has satisfactorily met these requirements for the program's first year. Records indicating relays/renewals of leaks found in Pressure Region 1 and Pressure Region 2 during the Year 2000 bar-hole survey were reviewed, and similar records pertaining to the Year 2001 bar-hole survey are currently being monitored, with final results planned for review when they become available.

Implementing this expedited time of repair from when a leak is first discovered has produced the most significant results thus far, in Staff's opinion. As a direct result of relaying/renewing leaking copper services, the total of all leaks found during the Year 2001 bar-hole survey was over 50% less than the October 1999 leak total.

Subparagraph 7h Three-year Program Review

After March 1, 2003, Laclede and Gas Safety Staff will provide a progress report and the results of the direct-buried copper service program. This progress review will determine future relay/renewal plans, including the rate of such future actions, and effectiveness of leak survey techniques employed and other related matters.

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<sup>1</sup> Pressure Region 1 is a part of Laclede's pipeline system that can operate above 35 psig, while Pressure Region 2 is a part of Laclede's pipeline system that is not allowed to operate above 35 psig.

**FINAL SUMMARY:**

For the entirety of this program, Staff has and will continue to monitor the effectiveness of Laclede's direct-buried copper service line replacements and leak surveys. The Commission can be assured that if at any time during the life of this program the Staff believes that changes must be made, it will make a separate filing to Case No. GO-99-155 to address specific issue(s) and suggest the Commission order any necessary action to be taken.

**Service List for**  
**Case No. GO-99-155**  
**Revised: January 8, 2002 (SW)**

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