

MEMORANDUM

TO: Missouri Public Service Commission
Case File No. GS-2008-0038, Laclede Gas Company

FROM: Rick Fennel, Energy Department - Safety/Engineering

/s/ Rick Fennel 9/6/2007
Project Coordinator/Date

/s/ Lera Shemwell 9/6/2007
General Counsel's Office/Date

SUBJECT: Staff Recommendation Regarding Laclede Gas Company's Verified Application Requesting a Revision in the Replacement Requirements for Case No. GO-99-155 Establishing the Adequacy of the Company's Copper Service Line Replacement Program and Leak Survey Procedures for Soft Copper Service Lines

DATE: September 6, 2007

BACKGROUND

On October 30, 1998, the Commission issued an Order Establishing Case No. GO-99-155 for the purpose of receiving information relevant to the adequacy of Laclede Gas Company's (Laclede or Company) direct-buried copper service line replacement program and the effectiveness of the Company's leak survey procedures and investigations. The Parties filed a Unanimous Stipulation and Agreement ("Agreement"), which was approved by the Commission on May 30, 2000.

As part of the Agreement, Laclede agreed to the annual replacement rate of 8,000 direct-buried copper service lines. In addition, Laclede agreed to submit annual reports to Staff detailing direct-buried copper service line renewal (full replacement) and relays (partial replacement) completed, and agreed to submit additional reports confirming the achievement of other milestones under the Agreement. The Agreement provided that after the third year of the program, Laclede and Staff would review the progress and results of the program to determine future relay/renewal plans, including the rate of such

future actions, and potential modifications to leak survey techniques and other related matters.

On August 1, 2003, Staff filed its Three-Year Summary Report in which Staff requested that the Commission continue the current requirements of the Agreement, with annual reporting from the Staff. Staff stated that the requirements of the Copper Service Line Replacement Program reflect the overall goals of protecting the public, achieving a substantial number of replacements annually, using effective leak detection methods, and the timely elimination of discovered leaks. Staff suggested that Laclede met or exceeded the guidelines of the Agreement and that the crucial goal of public safety is being maintained.

On March 5, 2004, the Commission issued a Report and Order, adopting Staff's recommendation that the Commission continue the current requirements of the previously approved Stipulation and Agreement with annual reporting from Staff.

On September 1, 2004, August 29, 2005, August 30, 2006, and August 31, 2007, Staff filed subsequent Annual Reports updating the status of Laclede's direct-buried copper service line replacement program and leak surveys. In each year's Annual Report, Staff stated that Copper Service Line Replacement Program reflected the overall goals of protecting the public, achieved a substantial number of replacements annually, used effective leak detection methods, and timely eliminated discovered leaks. Staff suggested that Laclede has met or exceeded the guidelines of the Agreement and that the crucial goal of public safety is being maintained. For these reasons, Staff requested that the Commission continue its current requirements of the Agreement, with annual reporting from Staff.

On August 8, 2007, Laclede filed an application (Case No. GS-2008-0038) requesting the Commission issue an Order revising replacement requirements set forth in Case No. GO-99-155.

On August 17, 2007, the Commission issued an Order for Staff to file its recommendation in Case No. GS-2008-0038, no later than September 6, 2007.

LACLEDE'S APPLICATION

In its Application, Laclede proposed a reduction in the number of direct-buried copper service lines it is required to replace annually. Laclede states that this proposed

revision is due to increased costs of replacing the remaining copper service lines, which are scattered rather than grouped. In addition, many lines are difficult to replace due to their location under pavement or in high traffic areas or in locations where construction is difficult. Laclede suggests the reduction in the requirement of the number of service lines replaced annually would permit Laclede to better manage the replacements of these more difficult and scattered service lines in the final stages of the direct-buried copper replacement program, while still being consistent with the program's overarching goal of public safety. Further, Laclede claims the decrease in annual replacements would allow better management of the replacement program in a more orderly and efficient manner by better matching workforce levels, equipment, and available resources. It would also allow use of in-house employees while avoiding abrupt changes in employee levels that could occur if the current level of replacements is maintained. Laclede noted that this approach has been approved in previous replacement programs, as noted in the Application, in the later stages of those programs.

Laclede's Application requests revisions to the current replacement program as contained in Case No. GO-99-155. The following bullet points summarize the major elements of Laclede's Application.

- **Reallocate resources to accelerate replacements in Pressure Region I.** To maximize safety benefits, Laclede proposes to replace all the remaining direct-buried soft copper service line in Pressure Region I by February 2009, which is a year ahead of the current schedule. Many of these service lines are scattered throughout the system. Laclede identified the service lines in Pressure Region I as the greatest potential for risk from leaking copper service lines. All the previous incidents related to leaking copper service lines occurred in Pressure Region I. Laclede proposes to eliminate the copper service lines in the area of greatest risk, Pressure Region I, within two years while continuing robust replacements in the area of less risk, Pressure Region II. This approach should significantly reduce the risk of an incident related to leaking copper service lines.
- **Establish a new average annual replacement rate of 6,000 direct buried soft copper service lines, beginning with this program year (program year 8).**
- **Further reduce the annual service line replacement amounts.** Allow Laclede to take credit for the approximately 2,400 to 2,500 copper service lines that have been replaced in excess of the required minimum 8,000 annual service line replacements.

Laclede requests that in years eight through eleven of the program it be allowed to reduce the total annual replacements by an additional 600 service lines.

In its Application, Laclede notes enhancements to the program and several milestones that the program has achieved.

- Except for early in the program, Laclede has been making renewals (replacements main-to-meter) instead of relays (partial replacements of the copper service line in the area near the street) thereby eliminating all copper from replaced service lines. The original order only required relays.
- Laclede has been completing the replacements of the 4,145 service lines, which were partially replaced prior to the start of the program and exempted from the original replacement schedule. These services were not required to be addressed until the conclusion of the program.
- The annual bar-hole leak survey method that is more frequent than the 3-year survey required by the Commission's regulations.
- Expanded replacement of copper service lines when Class 3 leaks are found. The Agreement requires replacement of Class leaks found only during the bar-hole leak surveys. Laclede has expanded these requirements to include all leaks reported from all sources.
- Accelerated replacement of copper service lines when Class 3 leaks are found. In the Agreement, Class 3 leaks found during the bar-hole leak surveys in Pressure Region I were to be eliminated in 6 months or by the end of the calendar year, and Class 3 leaks found in Pressure Region II were to be eliminated in one year. Laclede has averaged three to four months for replacements for Class 3 leaks reported from all sources in Pressure Region I and seven to nine months for leaks reported from all sources in Pressure Region II.
- When responding to an odor call at an address with a copper service line, Laclede conducts a bar-hole leak survey over copper service lines at adjacent addresses.
- The over-all leak rate found during the bar-hole leak survey has significantly declined from 3.4% found prior to the start of the replacement program to 0.65% during the last bar-hole leak survey completed in 2007, which is a reduction of approximately 80%.
- There has been a significant decrease in the number of Class 1 leaks found during the annual bar-hole leak surveys (73%).
- Laclede uses a database linked to a geographic information system to prioritize and schedule annual replacements, which has improved performance (decrease in leak

rate) due to the number of copper service lines replaced and the ability to prioritize replacements in areas identified as experiencing the greatest degree of corrosion.

STAFF ANALYSIS

Staff's concern in Case No. GO-99-155 is focused on the corrosion of direct-buried soft copper service lines. The investigation of the corrosion of direct-buried soft copper service lines was initiated by the natural gas incidents at 401 Pralle Lane in St. Charles, Missouri on March 17, 1998, and at 732 Bergerac Drive in Creve Coeur, Missouri on March 13, 1998. Both incidents resulted from natural gas escaping from corroded direct-buried soft copper service lines as documented in the Staff's Incident Reports.

The Staff's goal in its initial investigation, and subsequent recommendation, was to, as rapidly and efficiently as possible, eliminate direct-buried soft copper service lines, and to effectively leak survey the remaining direct-buried soft copper service lines until they have been replaced or eliminated. To achieve this goal, the Commission ordered Laclede to implement a replacement program in which a minimum of 8,000 direct-buried soft copper service lines would be replaced or eliminated annually so that all direct-buried soft copper service lines in the system would be replaced or eliminated in a 10-year time period. For the same program time period, Laclede would also survey the remaining direct-buried copper service lines in the system on an annual basis using enhanced leak survey procedures.

Through year 7 of the program (the period ending March 1, 2007), Laclede has completed approximately 58,405 direct-buried copper service line replacements, which is approximately 72% of the sum of the program's beginning total of 76,966 qualifying services and the 4,145 services originally exempted, which are being voluntarily included in the replacement schedule. Laclede has averaged approximately 8,344 direct-buried copper service line replacements each year, which exceeds the Agreement's criteria of an annual replacement rate of 8,000 direct-buried copper service lines.

The program has been in place for over 7 years and data indicates a substantial number of direct-buried soft copper services have been replaced or eliminated and the leakage rate (calculated from annual bar-hole surveys) for direct-buried soft copper service lines has decreased each year for the last 6 years of the program. On August 31, 2007, Staff filed its annual status report detailing the progress of the replacements

of direct-buried copper service lines and annual bar-hole leak surveys. In its report, Staff emphasized that priority replacements, leak surveys, and timely elimination of discovered leaks must be considered together in order to achieve the purpose of the Agreement, which is protection of the public's safety, and each, must therefore, compliment the other. Staff also reiterated its position that, at this time, that the efforts of the parties in meeting the Agreement's requirements are achieving this purpose, as supported by the results discussed in Staff's annual report. However, Staff, in consideration of Laclede's Application, will address the Company's request for a revision to the current direct-buried copper service line replacement program.

STAFF RECOMMENDATION

The Staff recommends the Commission allow Laclede to replace an average of 7,000 direct-buried soft copper service lines annually beginning in program year 8 (ending March 2008). The Staff believes these replacements should be accelerated to eliminate the service lines in Pressure Region I by March 2009. Laclede and Staff could review the progress and results of the 2008 bar-hole leak survey to determine if any additional modifications should be considered. The Staff recommends that the replacement rate remain at 7,000 per year, unless otherwise changed by the Commission.

Replacement at this rate for the remaining service lines would accomplish the goals of the original replacement program. The average number of services lines replaced over the approximate ten- year program would be approximately 8,000 per year. It would more quickly eliminate the copper service lines in the area identified as the highest risk in an expedited manner (Pressure Region I). This required replacement rate would also recognize the difficulties associated with the replacements of the remaining copper service lines that may not be grouped together or may be more difficult to replace than at the beginning of the program. The Staff does not believe that public safety will be compromised since the replacement rate would be at approximately the rate over 10 years as the rate originally ordered by the Commission. Staff will have the ability to monitor the leakage rate on the remaining copper service lines and require Laclede to return to the replacement rate of 8,000 per year if determined necessary.

At the beginning of program year eight (March 1, 2007), there were approximately 23,000 copper service lines remaining to be replaced. Of this amount, approximately 1,700 are service lines that had been partially replaced (the portion of the service line in

the corrosive environment was replaced). As part of the program, Laclede is fully replacing, main-to-meter, the remaining copper in all of these service lines.

CONCLUSION

Laclede should follow the guidelines in the original Stipulation and Agreement with the revisions specifically noted above. Staff also recommends that the current requirement from previous Commission orders for Laclede to replace a minimum of 8,000 direct-buried soft copper service lines in the last 3 years of the program be changed to a requirement for replacement of an average of 7,000 service lines annually, if Laclede follows the recommendations noted above. The revisions recommended by the Staff would result in the higher risk copper service lines in Pressure Region I being eliminated one year earlier than would have occurred in the original program. Also, the overall average replacement rate for the duration of the program will still be approximately 8,000 service line replacements per year. Therefore, the Staff does not believe the revisions will compromise public safety. If at any time the leakage rate is found to be unsatisfactory, the Staff will bring this information back to the Commission and recommend appropriate remedial action be taken.

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

In the Matter of the Verified Application of Laclede)
Gas Company for an Order Establishing Replacement)
Requirements for The Final Phase of its Soft Copper) Case No. GS-2008-0038
Service Line Replacement Program Previously)
Approved Pursuant to Case No. GO-99-155)

VERIFICATION

STATE OF MISSOURI)
)
COUNTY OF COLE)

I, Richard A. Fennel, Utility Technical Specialist II in the Commission's Energy - Safety/Engineering Department, of lawful age, on oath state: that I participated in the preparation of the Staff Recommendation that is being filed in the above case on September 6, 2007, consisting of seven (7) pages to be presented in this case; that information in the Staff Recommendation was given by Laclede Gas Company; that I have true knowledge of the matters set forth in such Staff Recommendation; and that such matters are true to the best of my knowledge and belief.

Richard A. Fennel

Richard A. Fennel

Subscribed and sworn to before me this 6th day of September, 2007.



SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #05842086

Susan L. Sundermeyer

NOTARY PUBLIC