

# Missouri Public Service Commission

## Staff Report



GW-2016-0013

Commission Staff Division

Operational Analysis Department

Safety Engineering Unit

August 15, 2016

Jefferson City, Missouri

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## **I. EXECUTIVE SUMMARY**

On July 13, 2015, the Missouri Public Service Commission Staff (“Staff”) filed a motion asking the Commission to open a proceeding to facilitate discussions to develop a state-wide policy and apparatus for communications and coordination between gas utilities, fire departments and other emergency responders to enhance the effectiveness of efforts to respond when a gas leak has occurred and to prevent third-party damage to natural gas facilities. The Commission opened File No. GW-2016-0013 on July 22, 2015. The purpose of this working docket is to facilitate Staff’s efforts to obtain input from interested stakeholders. As part of this docket, Missouri Gas Energy (MGE), now owned by Laclede Gas Company (collectively “Laclede”), held four workshops in an effort to enhance damage prevention and improve communications between first responders and gas utilities. See Section III for further discussion on these workshops.

Laclede has also reviewed and made enhancements to its damage prevention program as discussed in Section IV of this report and enhanced its program for communications with emergency responders as discussed in Section V of this report.

Since the programs implemented by Laclede are new, no information is available regarding the effectiveness of these programs at reducing third-party damages or improving communications with first responders. Staff has proposed six specific recommendations in Section VII of this report for Laclede going forward, including recommendations to evaluate the effectiveness of the new programs it has implemented in regards to reducing third-party damages and improving communications with first responders.

The challenges faced by Laclede as the largest investor-owned natural gas distribution system in the state in both damage prevention and communicating with first responders are different than those faced by many of the municipally owned and operated natural gas distribution systems in Missouri. Because of the differences between Laclede and other Missouri natural gas operators, and the lack of any data regarding the effectiveness of the new programs implemented by Laclede at this time, it is Staff’s opinion that it is premature to set any state-wide policy or initiate rule changes. As more specifically explained throughout the Report, Staff will continue to gather data and will recommend a state-wide policy or rulemaking at some point in the future if the data indicates either is needed.

## **II. BACKGROUND**

On February 6, 2014, Staff filed a complaint against MGE in Case No. GC-2014-0216.

On February 11, 2015, the parties filed a Stipulation and Agreement resolving the issues in the complaint. The Stipulation and Agreement contemplated a working docket to enhance the effectiveness of efforts to respond to instances where a gas leak has occurred, as well as the effectiveness of efforts to prevent third-party damages to natural gas facilities.

On July 22, 2015, the Commission opened a working docket (File No. GW-2016-0013) to facilitate discussion regarding the prevention of third-party damages to natural gas facilities and responding to natural gas incidents when they occur. The Commission directed that this proceeding be used as a repository for receiving information and comments from interested stakeholders and suggested the possible establishment of a workshop to gather additional ideas and input.

The first Status Report filed jointly by Staff and Laclede stated Staff would file a final recommendation no later than August 15, 2016, based on the outcome of Laclede's meetings and status reports. All other interested stakeholders may also file a final recommendation at this time.

## **III. WORKSHOPS**

Laclede hosted four workshops across Missouri to discuss preventing third-party damages to natural gas facilities and responding to natural gas incidents. The workshops took place in Jefferson City, Missouri on October 20, 2015, Kansas City, Missouri on April 28, 2016, Springfield, Missouri on May 26, 2016, and in St. Louis, Missouri on June 23, 2016. Among the attendees to these workshops were natural gas operators and emergency responders. All four workshops followed a similar agenda. Representatives of the Missouri Public Service Commission Safety Engineering Unit attended each workshop.

During each workshop, Laclede presented information about how its damage prevention program is structured. Laclede stated it has been tracking excavation damages since 2001 in its St. Louis service area and since 2013 in its MGE service area (including Kansas City). Laclede stated during the workshops that in 2001 it experienced almost 10 damages per 1,000 locate tickets for its St. Louis operation.<sup>1</sup> Through its damage prevention program, Laclede stated that it has

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<sup>1</sup> Normalizing excavation damages per 1,000 tickets is an industry-accepted method as discussed in further detail in section IV below.

decreased third-party damages to less than 4 damages per 1,000 locate tickets.<sup>2</sup> Laclede explained that as part of the damage prevention program<sup>3</sup>, its damage coordinators conduct on-site field investigations whenever third-party damage occurs. These damage coordinators perform a root cause analysis to determine exactly what caused the third-party damage.

At each workshop, Laclede also discussed ways to respond more effectively to a natural gas incident. Laclede stated that it educates fire departments in its service areas with a liaison program as required by 4 CSR 240-40.030(12)(J)3. Educational materials provided to meeting attendees included:

- Responding to Natural Gas Emergencies book<sup>4</sup>;
- Tips for Effectively Communicating with Emergency Responders;
- Laclede's Gas Emergency Action Items tip card;
- Natural Gas Emergency Action Items tip card drafted by Laclede and designed for use by emergency responders;
- A copy of the City of Perryville's damage prevention ordinance; and
- A copy of Laclede's revised emergency plan.

At each workshop, Mike Callan<sup>5</sup> gave a presentation on responding to utility emergencies and demonstrated how to use the Responding to Utility Emergencies (RTUE) program. During Mr. Callan's presentation, discussion was encouraged among workshop participants who have been responsible for responding to third-party damages to natural gas facilities. The communication between the natural gas operator and the emergency responder, and the role of the emergency responders at third-party damages were discussed. There was also discussion about how fire departments in some areas have addressed what they portray as a significant increase in third-party damages from major construction projects, such as fiber optic cable installation.

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<sup>2</sup> These damage prevention statistics came from the presentation Laclede attached to the June 2016 status report filed on July 8, 2016 in File No. GW-2016-0013.

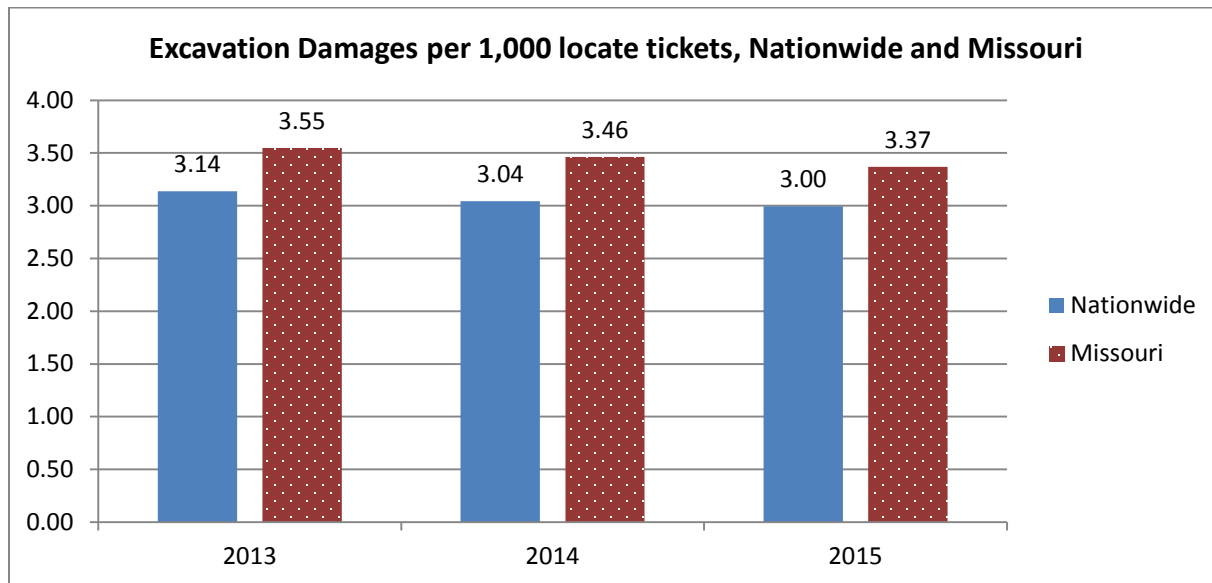
<sup>3</sup> Laclede's damage prevention program originated in its St. Louis operating territory. Once Laclede purchased MGE in 2013, the damage prevention program that originated in St. Louis was implemented in MGE operating areas.

<sup>4</sup> Laclede purchased and provided this book, which Laclede consultant and emergency responder expert, Mike Callan, wrote.

<sup>5</sup> Mike Callan is a consultant for Laclede. He delivers presentations about responding to utility emergencies and also has supplied Laclede with the Responding to Utility Emergencies program. Additional information is available on his website <http://mikecallan.com/>

#### IV. PREVENTING THIRD-PARTY DAMAGES TO NATURAL GAS FACILITIES

A standard method for comparing excavation damages statistics is based on the number of excavation damages per 1,000 locate request tickets.<sup>6</sup> This method normalizes the rate of excavation damages between large and small operators as well as taking into account the higher concentrations of damages in areas of high growth. Over the past 3 years, Missouri has had excavation damage rates (number of excavation damages per 1,000 locate request tickets) reported for its distribution systems that are somewhat higher than national average. However, it should be noted that the locate request criteria vary from state to state,<sup>7</sup> therefore this statistic is more appropriate as a means for states and operators to measure the trends in a state on a year-to-year basis. Over the past three years, the overall trend of damages in Missouri appears to be decreasing over time consistent with decreases in the national average<sup>8</sup>:



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<sup>6</sup> Method explained by Common Ground Alliance in: [https://www.cga-dirt.com/annual/2013/DIRT\\_Report\\_for\\_2013\\_Final\\_20141008\\_REDUCED.pdf](https://www.cga-dirt.com/annual/2013/DIRT_Report_for_2013_Final_20141008_REDUCED.pdf)

<sup>7</sup> From the 2013 “Analysis & Recommendations, Volume 10” of the Common Ground Alliance Damage Information Reporting Tool: [https://www.cga-dirt.com/annual/2013/DIRT\\_Report\\_for\\_2013\\_Final\\_20141008\\_REDUCED.pdf](https://www.cga-dirt.com/annual/2013/DIRT_Report_for_2013_Final_20141008_REDUCED.pdf).

“It is important to keep in mind that locate request criteria vary from state to state. Requirements for submitting locate requests, such as length or size of the excavation (e.g., a city block, 1 mile, or from county line to county line, etc.), life of the ticket (e.g., 14 business days, 30 calendar days, indefinite), and notification exemptions, will affect how many locate requests may be submitted in a particular state. For these reasons, users of the metric need to keep in mind how the number is derived when attempting comparisons, whether they be state vs. state, operator vs. operator, or state vs. operator. However, the metric remains valuable as a means for states and operators to measure their own “Damages per 1,000 locate requests” data in a year-over-year basis to ensure that improvement is being made.”

<sup>8</sup> Data is from a public website: <http://www.phmsa.dot.gov/pipeline/library/data-stats/distribution-transmission-and-gathering-lng-and-liquid-annual-data>

Laclede and MGE service areas are the largest natural gas distribution systems in Missouri. If the size of the combined Laclede and MGE service area is considered based on the distribution annual reports for 2015,<sup>9</sup> the total number of natural gas services reported by Laclede and MGE is about 70% of the total number of services in Missouri.<sup>10</sup>

If the total number of excavation damages to natural gas distribution facilities in Missouri is considered for the same time period, about 70% of the total damages to natural gas distribution facilities in Missouri have been reported on the combined MGE and Laclede natural gas facilities, which is consistent with the size of these systems.<sup>11</sup>

## **A. EXCAVATION DAMAGE PREVENTION: LACLEDE AND MGE**

The above referenced workshops were held as an effort to get emergency responders, Laclede, Staff and any other interested stakeholders together to discuss effective methods that could be used to prevent third-party damages.

Prior to the Stipulation and Agreement, Laclede had taken several actions to prevent third-party damages as a part of its damage prevention program. These actions included frequent meetings with contract locators to discuss locate damages, tailgate meetings with contract locator crews, reporting inaccurate record(s) to the Laclede Engineering department for verification and record correction, and requiring the locate contractor to conduct self-audits.

Following the Stipulation and Agreement, Laclede continued to take several additional actions in an effort to further prevent third-party damages to natural gas facilities. These additional actions include requiring new contract locator employees to attend contract locator training,<sup>12</sup> random auditing of contract locators, placing marker balls at the tee on new service installations, placing marker balls at damages<sup>13</sup> and purchasing 10 units of a new locating equipment tool<sup>14</sup> to locate non-locatable services.

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<sup>9</sup> Operators of natural gas distribution systems are required to file annual reports with the Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) under 49 CFR 192.402(b)(7)(A).

<sup>10</sup> Data is from a public website: <http://www.phmsa.dot.gov/pipeline/library/data-stats/distribution-transmission-and-gathering-ling-and-liquid-annual-data>, distribution annual report data reported to PHMSA for 2015.

<sup>11</sup> Data is from a public website: <http://www.phmsa.dot.gov/pipeline/library/data-stats/distribution-transmission-and-gathering-ling-and-liquid-annual-data>, distribution annual report data reported to PHMSA for 2015.

<sup>12</sup> In DR 0005.4 (File No. GW-2016-0013), Laclede stated they began attending training for new contract locate employees in February 2016. Laclede has attended 8 of these training sessions.

<sup>13</sup> Laclede stated these actions are being taken after February 15, 2015, to prevent third-party damages in DR 0005 in File No. GW-2016-0013.

<sup>14</sup> The Company purchased Jamison tools locating equipment as an enhancement to its current equipment. Jamison tool information was obtained from DR 005.2 in File No. GW-2016-0013.

Laclede also stated it has made efforts to educate the public about safe digging practices through its public awareness program. On April 1, 2016, Laclede stated it held an Arbor Day event at the Missouri Botanical Gardens. Laclede was able to distribute 1,000 Missouri One Call informational materials to emphasize safe digging practices. Since April is “National Safe Digging Month”, Laclede stated it promoted excavation awareness and safety messages through social media, reaching 22,328 people.<sup>15</sup>

Laclede has not yet provided data regarding the effectiveness of these new program improvements. As discussed later, Staff recommends Laclede evaluate the effectiveness of these new programs, and provide this information to Staff.

## **B. EXCAVATION DAMAGE PREVENTION IN HIGH PROFILE AREAS**

Missouri pipeline safety regulations 4 CSR 240-40.030 (12)(I)3.H<sup>16</sup> and (12)(I)4<sup>17</sup> require additional actions be taken under certain conditions to prevent damages caused by excavation.

MGE designated mains in downtown Kansas City and the Country Club Plaza as “High Profile Mains” regardless of whether they met the above-noted criteria.<sup>18</sup> The Stipulation and Agreement required that within six months of the Commission’s approval of the Stipulation and Agreement, MGE submit to Staff a Status Report addressing the results of its analysis of the high profile program and identifying any changes made to the scope or term of the program based on such analysis. If MGE or Staff believes additional analysis is still required at the time such Status Report is submitted, MGE agrees to submit, in consultation with Staff, an additional status report

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<sup>15</sup> Laclede provided this information in DR 001.4 in File No. GW-2016-0013.

<sup>16</sup> MoPSC regulation 4 CSR 240-40.030(12)(I)3.H. states that an operator’s damage prevention program must “Provide as follows for inspection of pipelines that an operator has reason to believe could be damaged by excavation activities: (I) The inspection must be done as frequently as necessary during and after the activities to verify the integrity of the pipeline; and (II) In the case of blasting, any inspection must include leak surveys.”

<sup>17</sup> MoPSC regulation 4 CSR 240-40.030(12)(I)4. states that locate requests received by the operator “should be evaluated to determine the need for and the extent of inspections. The following factors should be considered in determining the need for and extent of those inspections:

- A. The type and duration of the excavation activity involved;
- B. The proximity to the operator’s facilities;
- C. The type of excavating equipment involved;
- D. The importance of the operator’s facilities;
- E. The type of area in which the excavation activity is being performed;
- F. The potential for serious incident should damage occur;
- G. The prior history of the excavator with the operator; and
- H. The potential for damage occurring which may not be easily recognized by the excavator.”

<sup>18</sup> Discussed in the Staff Incident Report filed in Case No. GS-2013-0400, on February 6, 2014.



addressing the same matters six months thereafter and as needed. If Staff and MGE do not agree on whether to change the boundary of the current “High Profile Areas”,<sup>19</sup> MGE and Staff shall present the issue to the Commission for decision.

Laclede submitted a report to Staff as required by the Stipulation and Agreement detailing its analysis of its high profile area program to determine whether the boundaries for the high profile areas were adequate and if Laclede needed to make any changes. In the first report Laclede submitted to Staff on November 25, 2015,<sup>20</sup> the high profile area encompassing the boundary around the Kansas City downtown high profile area was considered to be adequate by Laclede and no further changes were needed. However, Laclede believed the boundary around the high profile area surrounding the Country Club Plaza area warranted changes. After further analysis<sup>21</sup> on the Country Club Plaza high profile area, Laclede expanded the boundary for the Country Club Plaza high profile area a few blocks to the west of its original boundary and provided this information to Staff via email on April 25, 2016, with additional explanation of the analysis performed via email to Staff on May 13, 2016. Staff does not disagree with the analysis performed by Laclede to date, but recommends there be on-going evaluation by Laclede to determine the area and extent of such “High Profile Areas” as discussed in Section VII below.

## **V. RESPONDING TO NATURAL GAS EMERGENCIES**

Another part of the Stipulation and Agreement required representatives of Laclede, Staff and other interested stakeholders to meet in order to enhance the effectiveness of responding to natural gas emergencies. This topic was covered in each of the four workshops along with identifying methods to prevent third-party damages. In addition to the workshops, Laclede also implemented several methods described below to improve response to natural gas emergencies.

In compliance with 4 CSR 240-40.030(12)(J)3., Laclede provided 70 training sessions that were attended by 84 fire and police departments from January 1, 2015 to March 31, 2016. A total of 1028 emergency responders, between both fire departments and police departments, were trained on how to respond to natural gas emergencies. Laclede also attended 21 meetings with various fire chiefs, fire marshals, and fire training coordinators. In order to advertise the training,

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<sup>19</sup> High profile areas have boundaries that were set to identify areas of elevated consequence based on the presence of both high occupancy structures and main-to-wall pavement.

<sup>20</sup> The first status report on high profile areas was provided to Staff via email on November 25, 2015.

<sup>21</sup> Analysis to evaluate the high profile areas included using satellite imagery to evaluate for high occupancy structures and main-to-wall pavement and review of dig-up notifications through the Missouri One Call System in both the Kansas City downtown and Country Club Plaza high profile areas.

Laclede mailed 289 letters to various fire departments, police departments, “911” individuals and emergency management agencies.<sup>22</sup>

During Mike Callan’s presentation about responding to utility emergencies in each of the workshops, he promoted his RTUE online training program. This training program contains information for several different audiences including police departments, fire departments, and utilities. Laclede indicated it would provide access to any emergency responder in its service area who requests access to it. According to Laclede, 171 emergency responders have accessed the RTUE program and completed the training.<sup>23</sup> According to an estimate from Mike Callan, an estimated 775 fire departments and 773 police departments<sup>24</sup> in Missouri could use the RTUE training program.

Laclede has not yet provided data regarding the effectiveness of these new program improvements. As discussed later, Staff recommends Laclede evaluate the effectiveness of these new programs, and provide this information to Staff.

## **VI. COSTS**

As part of the Stipulation and Agreement, Laclede estimated the cost to implement these first responder outreach programs at over \$100,000. According to the Stipulation and Agreement, the costs will be borne by MGE shareholders and are not recoverable in MGE’s next rate case. A comparison between estimated<sup>25</sup> and actual<sup>26</sup> costs is shown below:

<b>Estimated Expense</b>	<b>Actual Expense</b>
\$107,539.00	\$113,298.86

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<sup>22</sup> Information in this paragraph came from Laclede’s response to DR 0001, subpart 5 in File No. GW-2016-0013.

<sup>23</sup> From response to DR 0010 in File No. GW-2016-0013.

<sup>24</sup> From response to DR 0010 in File No. GW-2016-0013.

<sup>25</sup> Estimated costs are from Case No. GC-2014-0216 Stipulation and Agreement.

<sup>26</sup> Actual costs came from Laclede’s response to File No. GW-2016-0013 DR 0014.

## **VII. STAFF RECOMMENDATIONS FOR LACLEDE AND MGE**

1. High Profile Areas: Going forward, Staff recommends that Laclede continue to track locations where damages are occurring to help identify/modify high profile areas, and when warranted, create new high profile areas in both its MGE and Laclede service areas. Further, Staff recommends that Laclede develop procedures to determine when each current high profile area should be re-evaluated to determine whether that high profile area needs to be expanded, reduced, or remain the same, and whether a new high profile area should be created. Laclede should identify specific factors to be used as a basis for identification of high profile areas and create a procedure for routine surveillance that will allow identification of new high profile areas as well as revision of existing high profile areas.
2. Contract Locator Performance Objectives: As a result of the Stipulation and Agreement, Laclede started conducting random auditing of its contract locators. Staff recommends that Laclede compile the data gathered from these random audits to verify the contract locator's compliance with requirements to locate facilities. Laclede already has in place a contract performance metric related to timeliness.<sup>27</sup> Staff recommends that Laclede continue to verify the timeliness, completeness and accuracy of the contract locator's performance and also set specific contract performance objectives for completeness and accuracy in addition to its contract requirements for timeliness.
3. Excavator Outreach: Staff recommends that Laclede make efforts to provide educational materials and seek input from excavators regarding third-party damage issues at venues that are likely to reach excavators. An example of such a venue would be at the 2016 Damage Prevention and Excavation Safety Summit scheduled to be held in Springfield, Missouri on December 6-7, 2016. In 2015, more than 1,600 people from 21 states attended the event.<sup>28</sup>
4. Operator Outreach: Staff recommends that Laclede present the results and findings of the actions Laclede has taken to prevent third-party damages and enhance emergency response to natural gas incidents at an upcoming Missouri Association of Natural Gas Operators (MANGO) meeting or at the next annual MANGO seminar. This would enable other Missouri natural gas operators to benefit from lessons learned and actions taken by Laclede.

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<sup>27</sup> In response to File No. GW-2016-0013 DR 008, Laclede stated that it has a contract stipulation regarding locate timeliness.

<sup>28</sup> These stats came from <http://mocommonground.org/summit>.

5. Evaluate New Emergency Responder Program Effectiveness: Staff recommends that Laclede establish and measure meaningful metrics to evaluate the effectiveness of the various programs it has implemented for working with first responders and report the effectiveness of these programs to Staff within one year.
6. Evaluate New Damage Prevention Program Effectiveness: Staff recommends that Laclede establish and measure meaningful metrics to evaluate the effectiveness of the various programs it has implemented for damage prevention and report the effectiveness of these programs to Staff within one year.

## **VIII. STAFF RECOMMENDATIONS REGARDING STATEWIDE POLICY**

Staff's opinion is that recommending a state-wide policy on either improving damage prevention or working with emergency responders is premature at this time for reasons discussed below:

First, the challenges for Laclede in working with emergency responders are different from those for many other natural gas operators in the state. Laclede provides gas service in the two largest population centers (St. Louis and Kansas City) in Missouri and as a result must work with a number of different emergency response organizations. Of the five investor-owned natural gas distribution companies providing gas service to customers in Missouri, Laclede is the largest. In contrast, 41 of the natural gas distribution systems in Missouri are owned by municipalities, many working with only one or a few emergency response organizations. Staff recommends that instead of a state-wide policy or rule change related to working with first responders, Laclede should make the information regarding its program changes available to all Missouri natural gas operators through a venue such as the annual MANGO seminar and allow other natural gas operators to decide if such action would benefit their programs.

Second, Laclede uses a contractor to locate its facilities. Not all natural gas operators in Missouri use contract locators. The Staff recommendations for Laclede above regarding contract locators would not necessarily apply to natural gas operators who use their own employees to locate facilities; however, these recommendations may be applicable to other natural gas operators using contractors to locate natural gas facilities.

Third, Laclede has just recently implemented the changes in its emergency responder training and damage prevention and as a result, does not have any information regarding the effectiveness of these changes. Staff recommends Laclede should evaluate the effectiveness of the changes it made to enhance responses to natural gas emergencies and prevent third-party damages before a state-wide policy is developed.

Fourth, the combined MGE and Laclede service areas represent about 70% of both the number of customer service lines and excavation damages reported in Missouri for 2015.<sup>29</sup> Given the size of the combined MGE and Laclede systems and number of excavation damages, focusing on these two systems for the initial implementation and evaluation of the new programs seems reasonable.

Finally, to be effective, any such state-wide policy changes would likely require revisions to existing pipeline safety regulations in 4 CSR 240-40.030. Staff currently does not have statistics to determine if the number of third-party damages is higher for natural gas operators using contract locators than for natural gas operators using employees to locate facilities. Staff will collect and compile this data and evaluate if there is a need for revisions or additions to the pipeline safety regulations.

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<sup>29</sup> Data is from public website: <http://www.phmsa.dot.gov/pipeline/library/data-stats/distribution-transmission-and-gathering-lng-and-liquid-annual-data>, distribution annual report data reported to PHMSA for 2015.