

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

LOUISVILLE GAS & ELECTRIC)	
COMPANY)	
)	
_____)	CASE NO. 2017-00119
)	
ALLEGED FAILURE TO COMPLY)	
WITH KRS 278.495, 807 KAR 5:022,)	
AND 49 C.F.R. PART 192)	

ORDER

By Order entered March 15, 2017, the Commission initiated this proceeding to conduct a formal investigation and determine whether Louisville Gas & Electric Company ("LG&E") should be subject to the penalties prescribed in KRS 278.992 for alleged violations of minimum pipeline safety standards set forth in 807 KAR 5:022 and 49 C.F.R. Part 192. The incident giving rise to this case occurred on September 17, 2014, when a mechanical coupling on a 12-inch pipeline failed, resulting in the rupture of the pipeline.

In its March 15, 2017 Order, the Commission directed LG&E to file a response to the allegations set forth in the Order within 20 days, and scheduled a formal hearing for July 12, 2017. On April 5, 2017, LG&E filed a response to the Order in which it denied that it committed any willful violation of pipeline safety standards. By Order entered May 18, 2017, the Commission directed LG&E to respond to certain requests for information, and on May 26, 2017, LG&E filed responses to the requests.

Upon motion of LG&E, the Commission continued the hearing scheduled for August 15, 2017, and later rescheduled the hearing for November 8, 2017. The

Commission conducted a formal hearing on November 8, 2017, and heard testimony regarding the allegations in the March 15, 2017 Order. On November 8, 2017, Commission Staff (“Staff”) filed post-hearing requests to LG&E for information, and on November 22, 2017, LG&E filed responses to the requests. On December 20, 2017, LG&E filed a post-hearing brief. This matter now stands submitted to the Commission for a decision.

JURISDICTION

LG&E is a combination electric and gas utility that purchases, stores, transports, distributes, and sells natural gas at retail in Jefferson County and portions of 16 other Kentucky counties.¹ LG&E is a utility as defined in KRS 278.010(3)(b), and is subject to the jurisdiction of the Commission under KRS 278.040 and KRS 278.495.

KRS 278.495(2) grants the Commission authority to regulate the safety of natural gas facilities that are owned by a utility and to enforce the minimum safety standards adopted by the United States Department of Transportation (“USDOT”) pursuant to federal pipeline safety laws, 49 U.S.C. Section 60101, *et seq.*, and amendments thereto. The USDOT adopted minimum safety standards in 49 C.F.R. Part 192. Any person who violates any minimum pipeline safety standard adopted by the USDOT or any regulation adopted by the Commission governing the safety of pipeline facilities is subject to a civil penalty as prescribed in 278.992(1).

KRS 278.030 requires every utility to furnish “adequate, efficient and reasonable” service. KRS 278.260 permits the Commission, upon its own motion, to investigate any

¹ *Annual Report of Louisville Gas and Electric Company (Gas) for the Year Ended December 31, 2016* at 4.

act or practice of a utility that affects, or is related to the service of a utility. KRS 278.280(1) further permits the Commission, after conducting such investigation and finding that a practice is unreasonable, unsafe, improper, or inadequate, to determine the reasonable, safe, proper, or adequate practice or methods to be observed and to fix same by Order.

KRS 278.280(2) directs the Commission to prescribe rules and regulations for the performance of services by utilities. Pursuant to this authority, the Commission promulgated 807 KAR 5:006, Section 25, which requires all utilities to adopt and execute a safety program, and 807 KAR 5:022, which establishes minimum safety requirements for natural gas utilities.

DISCUSSION

On September 17, 2014, LG&E notified the Commission pursuant to 807 KAR 5:027, Section 3, that a mechanical coupling on its 12-inch Ballardsville transmission line in Oldham County, Kentucky, had failed, which caused the pipeline to rupture. Staff performed an onsite investigation on September 17 and 18, 2014, and on October 17, 2015, LG&E submitted to the Commission a written report on the incident.² LG&E retained Gas Technology Institute (“GTI”) to investigate and analyze the failure of the mechanical coupling system.³ GTI prepared a report (“GTI Report”) of its investigation, which LG&E submitted to Staff. Based on its onsite inspection and the information

² Pursuant to 807 KAR 5:022, Section 3(5) and Section 6, gas utilities are required to submit to the Commission a written summary report within thirty days of the occurrence of certain incidents.

³ 49 C.F.R. § 192.617 and 807 KAR 5:022, Section 13(10) require LG&E to have a procedure for analyzing accidents and failures for the purpose of determining the causes of the failure and minimizing the possibility of a recurrence.

provided by LG&E, including the GTI Report, Staff prepared and submitted to the Commission an Incident Investigation Report (“Staff Report”), a copy of which is attached as an Appendix to the Commission’s March 15, 2017 Order.

According to the Staff Report, employees of an LG&E contractor, Southern Pipeline, were excavating several feet of transmission pipeline parallel to Highway 42 in Goshen, Kentucky, as part of a project to reconfigure the pipe to enable an inline inspection tool to pass internally through the pipe. On the day of the incident, a mechanical coupling system installed in 1998 to join two segments of 12-inch pipeline was exposed within the excavation site. Southern Pipeline employees had completed excavation work for the day and were installing barricades at the excavation site when the 12-inch pipeline separated at the mechanical coupling. The coupling separation resulted in a loss of gas, but the gas did not ignite.⁴

The Staff Report states that the force of the coupling separation resulted in flying debris that injured two Southern Pipeline employees. Elvis Posey, Southern Pipeline CDL driver, was admitted to University of Louisville Hospital and treated for a fractured arm. John Schindler, Southern Pipeline laborer, received minor injuries that did not require hospitalization. Flying debris also caused property damage to the roof of a nearby house and a passing vehicle.⁵

LG&E’s written incident report to the Commission (“LG&E Incident Report”)⁶ states that the Louisville Metro Fire Department responded and secured the scene, and

⁴ Staff Report, at 1–2.

⁵ *Id.* at 2.

⁶ A copy of the LG&E Incident Report is Attachment A to the Staff Report.

evacuated 24 nearby homes as a precaution. Additionally, when the pipeline was fully shut down to allow for repairs, 2,400 LG&E customers lost gas service. LG&E restored service to the majority of customers by September 20, 2017.⁷

According to the Staff Report, coupling systems can be subject to longitudinal “pull-out” forces resulting from pressure inside the pipe or from external action, such as excavation or ground settlement. In this installation, restraint was provided by a harness system consisting of lug brackets welded to the pipe and threaded with tensioning rods spanning the coupling length.

In its report,⁸ GTI concludes that multiple factors contributed to the failure of the coupling harness. According to GTI, the most significant factors were:

- An insufficient number of rod/lug assemblies were installed for the size and design pressure of the pipe.
- The weld quality on the lug brackets was poor, and some brackets had been welded only on one side.
- The brackets were constructed of low-yield strength steel.
- Washers were not installed between the lug and nut of the tensioning rod on both ends to distribute the load over the bracket face.
- The rods were not axially aligned or uniformly distributed around the pipe.

Additionally, GTI analyzed a segment of 8-inch pipe with two coupling devices provided to it by LG&E. The 8-inch pipe came off the 12-inch pipe and had been exposed during the excavation work by Southern Pipeline. The GTI Report states that testing

⁷ Staff Report, at 2.

⁸ A copy of the GTI Report is Attachment B to the Staff Report.

revealed some distortion of brackets on both 8-inch pipe couplings, and further that washers were not installed on both ends of some of the rods on one of the couplings.

Based on its investigation of the September 17, 2014 incident, Staff determined that LG&E violated multiple procedures for the installation of mechanical coupling systems contained in LG&E's Gas Operating, Maintenance, and Inspection Procedures ("GOMI"). Staff also determined that LG&E failed to inspect the weld on the coupling system that failed as required by 49 C.F.R. § 192.241 and 807 KAR 5:022, Section 5(8). Finally, Staff determined that as-installed, the coupling system necessarily would have had a Maximum Allowable Operating Pressure ("MAOP") of less than 300 psig. Staff noted that pipeline pressure data provided by LG&E for the period May 1, 2011, to the date of the accident showed that LG&E had operated the segment of pipe with the coupling at a pressure greater than MAOP of the pipeline on five days in violation of 49 C.F.R. § 192.619(a) and 807 KAR 5:022, Section 13(11)(a).

On October 13, 2017, LG&E filed responses to Commission Staff's second request for information. In its responses, LG&E stated that it had operated the Ballardsville pipeline at a pressure greater than 300 psig on 72 days from the date of installation of the coupling to April 30, 2011. In a November 22, 2017 response to a post-hearing request for information from Staff, LG&E revised the number of days during this period that the pipeline operated at a pressure greater than 300 psig to 69.

LG&E also filed an expert witness report prepared by Daniel Ersoy, an R&D Executive Director with GTI. LG&E retained Mr. Ersoy to present expert testimony at the hearing regarding GTI's root-cause failure analysis and the action plan LG&E developed in response to the coupling failure.

At the November 8, 2017 evidentiary hearing, Joel Grugin, a regulatory and safety investigator with the Commission's Division of Inspection, testified regarding his investigation of the September 17, 2014 accident, the Staff Report he prepared, and the conclusions he reached in the Staff Report.⁹ Mr. Grugin stated that the harness assembly on a mechanical coupling is designed to resist longitudinal pull-out forces. Mr. Grugin testified that the coupling on the 12-inch Ballardsville pipeline failed because the harness assembly was not installed in accordance with specific requirements in LG&E's GOMI and could not resist the pull-out forces when the coupling was exposed by the excavation work.¹⁰

Specifically, Mr. Grugin testified that not enough lugs were welded to pipe for its rated MAOP of 400 psig. LG&E's GOMI specified that for a design pressure of 400 psig, the harness assembly required seven 3/4-inch bolts or five 7/8-inch bolts. The harness assembly on the coupling that failed only had four 3/4-inch bolts.¹¹ Mr. Grugin stated that the MAOP of a pipeline segment is determined based on the design pressure of the weakest element of the segment. With only four 3/4-inch bolts, the MAOP of the coupling and consequently of the pipeline segment necessarily would have been less than 300 psig per the specifications in the GOMI. Based on daily maximum pressure readings provided by LG&E, Mr. Grugin stated that LG&E on multiple occasions had operated the

⁹ Video Transcript of Hearing ("H.V.T.") at 8:37:36 AM.

¹⁰ *Id.* at 8:42:45.

¹¹ *Id.* at 8:51:50 AM.

Ballardsville transmission pipeline at a pressure in excess of what the as-installed coupling would support.¹²

Additionally, Mr. Grugin testified that LG&E failed to install washers on both ends of the harness assembly as required by the GOMI to distribute the load evenly over the lug faces.¹³ Mr. Grugin also stated that both the inside and outside of some lugs were not welded to the pipe as required by the GOMI and that the quality of the weld was poor. Mr. Grugin stated that the failure to weld both sides of the lugs and the poor weld quality would have been discovered had the welding been properly inspected.¹⁴ Mr. Grugin noted that the GTI report found the low-yield strength of the steel used to construct the brackets contributed to the failure of the coupling.¹⁵

Mr. Grugin testified that all of the above factors contributed to the failure of the coupling. He stated it could not be determined if any one of the factors alone would have caused the failure.¹⁶

Mr. Grugin testified that although there was no fire when the mechanical coupling on the 12-inch pipe failed, had there been ignition the consequences could have been “catastrophic” considering the diameter of the pipe and volume of gas. He stated that in his opinion the crew in the excavation area “would have probably not made it.”¹⁷

¹² *Id.* at 8:52:45 AM.

¹³ *Id.*, at 8:42:30 AM.

¹⁴ *Id.* at 8:52:45 AM.

¹⁵ *Id.* at 8:45:15 AM.

¹⁶ *Id.* at 8:54:10 AM.

¹⁷ *Id.* at 8:57:20 AM.

Mr. Grugin stated that the incident occurred in a High Consequence Area (“HCA”) and that the Ballardsville transmission pipeline had a potential impact radius of 165 feet from the point of failure. He stated this means that any structure within 165 feet from the point of failure likely would have been destroyed or severely damaged had there been ignition. Mr. Grugin stated that he did not measure the impact radius but estimated there were three houses within this area. He noted one of these houses sustained roof damages from the force of the pipeline rupture.¹⁸

Mr. Grugin also testified that one of the couplings on the 8-inch pipe examined by GTI was also defectively installed. Mr. Grugin stated that washers were not installed on both ends of the harness assembly as required by the GOMI.¹⁹ Mr. Grugin noted that although this coupling did not fail, some of the brackets on the washerless side were deformed and beginning to yield, which posed a risk that the coupling would fail in the future.²⁰

LG&E presented three witnesses at the hearing: Lonnie Bellar, Senior Vice President of Operations for LG&E and its affiliate, Kentucky Utilities Company; Daniel Ersoy, an R&D Executive Director with GTI; and Bryan Claypool, Emergency Management Outreach Coordinator for LG&E.

Mr. Bellar stated that at the time of the September 17, 2014 accident, LG&E was in the process of reconfiguring the segment of the Ballardsville line that separated when the coupling failed. He stated that this segment had a very sharp turn, and that it was

¹⁸ *Id.* at 8:58:10 AM.

¹⁹ *Id.* at 8:55:10 AM.

²⁰ *Id.* at 8:56:12 AM.

necessary to modify the turn to allow inline inspection tools to pass through the line to monitor the condition of the pipe for safety purposes.²¹ Mr. Bellar testified that the area around the segment of pipe being modified had been excavated to facilitate the work. He stated that LG&E had to temporarily discontinue service to 2,400 customers to repair the pipeline after the accident.²²

Mr. Bellar testified that LG&E acknowledges there were a number of mistakes made when the 12-inch coupling was installed and accepts responsibility for the mistakes. He said LG&E does not disagree with the conclusions in the GTI report regarding the cause of the coupling failure.²³

Mr. Bellar stated that following the September 17, 2014 accident, LG&E developed an action plan (“Action Plan”) to prevent similar incidents from occurring and to manage the risk posed by existing mechanical couplings on its pipeline system. Mr. Bellar described the Action Plan as having three components.²⁴ First is the prohibition of the use of mechanical couplings on LG&E’s system except in very limited circumstances. Second is a process to remove and analyze existing couplings. Third is a focus on increased communications regarding the management of risks associated with mechanical couplings.

Regarding the first component, Mr. Bellar stated that mechanical-coupling systems have not been installed on LG&E’s transmission pipelines since the early 2000’s and

²¹ *Id.* at 9:09:48 AM.

²² *Id.* at 9:10:20 AM.

²³ *Id.* at 9:11:10 AM.

²⁴ *Id.* at 9:17:17 AM.

would not be used in the future.²⁵ Going forward, LG&E will not install couplings on its high-pressure distribution pipelines, which it defines as distribution pipelines with a pressure rating greater than 60 psig. Mr. Bellar stated that for distribution pipelines with a pressure rating between 3 and 60 psig, LG&E has put in place guidelines to severely restrict their use – installation of couplings on these lines must be pre-approved and can only be used in a temporary situation. LG&E will continue to use couplings on lines with rated pressure below 3 psig because of the minimal pull-out pressure exerted on these lines.²⁶

Mr. Bellar testified that LG&E had performed a record review and identified ten mechanical couplings on LG&E's transmission pipelines, including the three recovered from the excavation site and analyzed by GTI. Mr. Bellar testified that LG&E has removed all but three of the couplings from its transmission pipes, and that it plans to remove these by April 2018.²⁷ LG&E plans to continue to remove couplings on its high-pressure distribution lines opportunistically as it encounters them, and to analyze the couplings as removed. Mr. Bellar stated that LG&E will look at the data collected for trends and leading indicators to determine if this approach is the best course of action.²⁸

Mr. Bellar testified that LG&E does not dispute the finding in the Staff Report that LG&E did not follow three requirements in the installation of coupling that failed.²⁹ He

²⁵ *Id.* at 9:18:05 AM.

²⁶ *Id.* at 9:18:23 AM.

²⁷ *Id.* at 9:31:22 AM.

²⁸ *Id.* at 9:23:00 AM.

²⁹ *Id.* at 9:40:45 AM.

further testified that he agreed an inspection should have revealed the problems with the welding identified in the GTI report.³⁰ Mr. Bellar stated LG&E does not dispute that the installed configuration of the coupling harness does not support a 400-psig MAOP rating.³¹

Mr. Bellar stated that when the coupling failed, the force of resulting separation of the pipeline injured two Southern Pipeline employees. He said one employee suffered a broken arm, was admitted to the hospital, and may have required major surgery. He said the other employee suffered lacerations but was not hospitalized.³²

Mr. Bellar testified that flying debris also struck and damaged a passing vehicle and the roof of a nearby home. Mr. Bellar stated that per LG&E's written incident report, damages to private property amounted to approximately \$52,000. He said the blast also caused approximately \$262,000 in damages to LG&E and Southern Pipeline's equipment, and that LG&E incurred approximately \$60,000 in emergency response costs. The cost of service restoration efforts, he said, was approximately \$950,000.³³ The separation of the pipeline also resulted in a release of 7000 mcf of gas,³⁴ which according to LG&E's written incident report had a value of \$30,709.³⁵

³⁰ *Id.* at 9:41:15 AM.

³¹ *Id.* at 9:41:32 AM.

³² *Id.* at 9:42:05 AM.

³³ *Id.* at 10:43:28 AM

³⁴ *Id.* at 10:47:02 AM.

³⁵ Staff Report, at Appendix A, p. 3.

Mr. Bellar stated he agreed with Mr. Grugin's testimony that the consequences of the failure of the 12-inch coupling could have been much more serious had there been ignition of the gas. He acknowledged that the accident occurred in an HCA, which he said is a designation based on population density and indicates a high risk of property damage and loss of life in the event of ignition.³⁶

Mr. Bellar testified that the welder who installed the failed 12-inch coupling would have been responsible for inspecting his own work.³⁷ He stated that LG&E now has a well-developed procedure for welding work on its distribution system that requires certain levels of inspection.³⁸ He said 100% of welds on LG&E's transmission system are inspected by x-ray.³⁹

Daniel Ersoy, R&D Executive Director for GTI, testified regarding the failure analysis investigation and subsequent consulting work his firm performed for LG&E. Mr. Ersoy stated that GTI is a technical institute and is specifically accredited to perform root-cause failure analyses.⁴⁰ He said in this case, GTI's investigation of the failure of the 12-inch coupling on the Ballardsville transmission line identified multiple factors that contributed to the failure.⁴¹ Mr. Ersoy testified that stress on the tensioning rods was able to either pull the rods through the lug or cause the bracket to detach from the pipe.⁴² He

³⁶ H.V.T. at 10:49:02 AM.

³⁷ *Id.* at 10:09:19 AM.

³⁸ *Id.* at 10:08:00 AM.

³⁹ *Id.* at 10:16:55 AM.

⁴⁰ *Id.* at 10:58:10 AM.

⁴¹ *Id.*, at 11:31:30 AM, 11:51:15 AM.

⁴² *Id.*, at 11:51:45 AM.

stated all of the contributory factors cited in the GTI Report either contributed to too much load per rod or too weak of a “hold back” of the rods.⁴³

Mr. Ersoy agreed that there were a number of deviations from applicable installation requirements but for which the separation would not have occurred.⁴⁴ Mr. Ersoy stated that a proper inspection of the coupling installation would have revealed all of the defects in the installation of the coupling, with the exception of the poor quality of the steel of the brackets.⁴⁵ Mr. Ersoy stated that it was hard to say if any one of the factors by itself would have caused the failure.⁴⁶ Mr. Ersoy testified that he did not see anything in the Staff Report that was inconsistent with GTI’s root-cause failure analysis.

Mr. Ersoy testified that LG&E developed the Action Plan in the aftermath of the Ballardsville coupling failure to restrict the future use of couplings on its system and to manage the safety risk posed by the potential failure of existing couplings on its system. Mr. Ersoy stated that in his opinion, the Action Plan was the result of a prudent, collaborative, and deliberative process and was sound from an engineering basis.⁴⁷

Mr. Ersoy stated that LG&E’s Action Plan includes new requirements for the installation and inspection of couplings. The process includes enhanced installation procedures with checklists, enhanced training and proficiency requirements for personnel

⁴³ *Id.*, at 11:51:55 AM.

⁴⁴ *Id.*, at 11:52:38 AM.

⁴⁵ *Id.*, at 11:34:00 AM.

⁴⁶ *Id.*, at 11:51:30 AM.

⁴⁷ *Id.* at 11:02:45 AM.

that install couplings, and installation audit and inspection requirements.⁴⁸ Mr. Ersoy noted that the audit process includes a review of third-party contractors' procedures to assure that they are equivalent to or more stringent than LG&E's requirements.⁴⁹

Mr. Ersoy stated that LG&E's Action Plan also includes preventative measures to address existing mechanical-coupling systems on LG&E's system. He noted that LG&E plans to remove all of the remaining mechanical-coupling systems on its transmission pipelines in the near future, but to remove the 1350 existing couplings on its high-pressure distribution lines only as it encounters them during the ordinary course of work on its lines.⁵⁰ Mr. Ersoy testified that there are very few instances of coupling systems failing when in the ground due to axial separation because the weight of the soil holds the pipe together.⁵¹ Mr. Ersoy stated that digging up the couplings and removing them could pose a bigger risk than leaving them in the ground.⁵² For this reason, LG&E's Action Plan calls for the removal of couplings on its high-pressure distribution lines only as LG&E encounters them. LG&E will inspect and collect data on the removed couplings, and identify from this data characteristics of couplings found to exhibit problems, such as geographic region of installation, work crew performing the installation, soil type, installation date, etc.⁵³ Mr. Ersoy stated that LG&E would proactively remove couplings

⁴⁸ *Id.* at 11:06:07 AM.

⁴⁹ *Id.* at 11:09:50 AM.

⁵⁰ *Id.* at 11:53:53 AM.

⁵¹ *Id.* at 11:18:15 AM.

⁵² *Id.* at 11:20:20 AM.

⁵³ *Id.* at 11:22:05 AM.

that share characteristics with couplings determined to pose a risk.⁵⁴ Mr. Ersoy testified that in his opinion this is the lowest risk approach to dealing with existing couplings on LG&E's high distribution lines.⁵⁵

The final witness to testify was Brian Claypool, LG&E's Emergency Management Outreach Coordinator. Mr. Claypool testified that the failed 12-inch coupling was installed in the repair of a Class 1 leak on the transmission line.⁵⁶ He said he was foreman of one of the crews dispatched to make the repairs. He said his crew was responsible for performing a hot tap on the line to stop the flow of gas so repairs could be made and was not involved in the installation of the coupling system.⁵⁷ He stated that at the time, the welder would have been responsible for inspecting his own weld.⁵⁸ He also said a binder with the installation specifications would have been in the truck of the welder's crew.⁵⁹

Following the hearing, LG&E filed responses to Staff's post-hearing data requests on November 22, 2017, and a post-hearing brief ("Brief") on December 20, 2017. In its Brief, LG&E acknowledges that it violated pipeline safety standards as found in the Staff Report.⁶⁰ Citing the measures it has taken in response to the September 17, 2014 accident and the development of its Action Plan, LG&E argues that the Commission

⁵⁴ *Id.* at 11:23:55 AM.

⁵⁵ *Id.* at 11:23:25 AM.

⁵⁶ *Id.* at 12:06:10 PM.

⁵⁷ *Id.* at 12:05:28 PM.

⁵⁸ *Id.* at 12:05:10 PM.

⁵⁹ *Id.* at 12:16:48 PM.

⁶⁰ Brief at 7.

should not impose any penalty.⁶¹ If the Commission does assess a penalty, LG&E argues that the Commission should suspend the penalty contingent on LG&E's compliance with regulatory requirements and implementation of its plan of action. LG&E asserts that recent Commission decisions involving pipeline safety violations by small municipal utilities support a substantial or complete suspension of any penalty imposed on it.⁶² LG&E argues that in any event, the maximum civil penalty the Commission could impose for violations relating to the September 17, 2014 accident is \$1,000,000.⁶³ LG&E does not address in its Brief the finding of violation in the Staff Report based on the defective installation of the 8-inch coupling.

FINDINGS OF VIOLATION

In this case, the material facts are not in dispute. LG&E acknowledges the failed 12-inch mechanical coupling was not installed in accordance with multiple specifications of the GOMI and further that it did not properly inspect the welding on the failed coupling to ensure that the weld was acceptable and free from defects. LG&E also acknowledges that an 8-inch mechanical coupling on a segment of pipe coming off the 12-inch line was not installed in accordance with its GOMI. Finally, LG&E acknowledges that it operated the 12-inch Ballardsville transmission pipeline at pressures greater than the MAOP of the segment of pipeline containing the failed coupling.

49 C.F.R § 192.605(a) and 807 KAR 022, Section 13(2), require operators of natural gas pipelines to establish and follow written operating procedures. The

⁶¹ *Id.* at 14–15, and 19–20.

⁶² *Id.*

⁶³ *Id.* at 13.

Commission finds that LG&E committed four violations of 49 C.F.R § 192.605(a) and 807 KAR 022, Section 13(2), by failing to adhere to specifications in its GOMI for the installation of mechanical couplings:

1. LG&E did not follow the specification in Table 79.2 of the GOMI for the number and size of coupling harness bolts. Table 79.2 specifies that for a 12-inch pipeline with a design pressure of 400 psig, the coupling harness must be installed with seven 3/4-inch diameter bolts or five 7/8-inch diameter bolts. The failed coupling was installed with only four 3/4-inch bolts. **(Violation 1)**.
2. LG&E did not follow the specification in Figure D-8 of the GOMI that "both inside and outside welding surfaces of lugs are to be welded to the pipe." The inside surface of one of the lugs on the failed coupling was not welded to the pipe. **(Violation 2)**.
3. LG&E did not follow the specification in Figure D-8 of the GOMI that a washer be installed between the bracket and nut on both ends of each harness-tensioning rod. LG&E did not install washers on both ends of the harness on the failed coupling. **(Violation 3)**.
4. LG&E did not follow the specification in Figure D-8 of the GOMI that a washer be installed between the bracket and nut on both ends of each harness-tensioning rod. LG&E did not install washers on both ends of the harness on one of the 8-inch couplings. **(Violation 4)**.

49 C.F.R. § 192.241 and 807 KAR 5:022, Section 5(8), set forth standards for the inspection of welds on steel pipelines and require visible inspection of welding to ensure that welding is performed in accordance with welding procedure and that the weld is acceptable. The Commission finds that:

5. LG&E violated 49 C.F.R. § 192.241 and 807 KAR 5:022, Section 5(8), by failing to properly inspect the welding on the failed 12-inch coupling. **(Violation 5)**.

49 C.F.R. § 192.619(a) and 807 KAR 5:022, Section 13(11)(a), prohibit operation of a segment of pipeline at a pressure that exceeds the MAOP of the weakest element of the segment. The Commission finds that:

6. LG&E violated 49 C.F.R. § 192.619(a) and 807 KAR 5:022, Section 13(11)(a), by operating a segment of the 12-inch Ballardsville transmission pipeline in excess of the MAOP of the failed coupling on **74 days** during the period from January 5, 1998, to September 17, 2014. (**Violation 6**).

PENALTY ASSESSMENT

Based upon a review of the evidence of record and being otherwise sufficiently advised, the Commission finds that LG&E should be assessed a penalty pursuant to KRS 278.992(1) for the foregoing violations of pipeline safety standards and regulations. KRS 278.992(1) provides that any person who violates any minimum pipeline safety standard adopted by the USDOT shall be subject to a civil penalty in an amount not to exceed the maximum civil penalty set forth in 49 C.F.R § 190.223, as of December 31, 2011, for each violation for each day that the violation persists. As of December 31, 2011, the maximum civil penalty contained in 49 C.F.R. § 190.223 for the violation of a USDOT minimum safety standard was \$100,000 per violation per day, not to exceed \$1,000,000 for any related series of violations.

In its Brief, LG&E raises two threshold issues relating to the application of the statutory penalty caps. First, LG&E asserts that there were only “three related violations . . . borne from a single act – the inadequate installation of the coupler by a single employee on January 5, 1998.”⁶⁴ LG&E identifies the violations as: (1) LG&E’s failure to follow its GOMI “when it installed the coupler with inadequately sized rods, inadequate welding, and inadequate use of washers;” (2) inadequate inspection of the weld on the coupling; and (3) operation of the pipeline at a pressure greater than the MAOP of the

⁶⁴ Brief, at 13. The Commission notes that LG&E failed to acknowledge in its brief the violation arising from the defective installation of the 8-inch coupling.

coupling as installed.⁶⁵ LG&E thus asserts that the three deviations from installation specifications (Violations 1, 2 and 3) should be considered a single violation for purposes of assessing a civil penalty.

Second, LG&E asserts that all of the violations related to the failure of the 12-inch coupling – the failure to follow three installation specifications, the failure to properly inspect the weld on the coupling, and the MAOP violation – are a “related series of violations” within the meaning of the penalty cap set forth in 49 C.F.R. § 190.223. LG&E argues that because these violations are related, the total penalty for the violations cannot exceed \$1,000,000.⁶⁶

KRS 278.992(1) provides that a person who violates minimum pipeline safety standards is subject to a civil penalty “for *each* violation for each day that the violation persists.” What constitutes separate violations under the statute is a matter of first impression for the Commission. The Commission notes, however, that the United States Pipeline and Hazardous Materials Safety Administration (“PHMSA”), the federal agency that enforces minimum pipeline safety standards at the federal level and promulgated 49 C.F.R. § 190.223, has recognized that “some separately alleged violations [of minimum pipeline safety standards] may be so related that they constitute a single violation” for purposes of penalty assessment.⁶⁷ Insofar as the Commission is charged under KRS 278.495 with enforcing federal pipeline safety regulations, the Commission finds it appropriate to consider what the federal agency charged with enforcement of pipeline

⁶⁵ *Id.* at 7.

⁶⁶ Brief, at 13. LG&E does not address the 8-inch coupling in its Brief.

⁶⁷ *ExxonMobil Pipeline Company*, CPF No. 5-2013-5007, at 19 (PHMSA Jan. 23, 2015), .

safety standards deems to be separate violations arising from a single accident or occurrence.

In determining whether violations are indeed separate or are so closely related that they should be considered a single violation for purposes of penalty assessment, PHMSA has been guided by analogy to the seminal United States Supreme Court case of *Blockburger v. United States*.⁶⁸ In *Blockburger*, the Supreme Court held that:

Where the same act or transaction constitutes a violation of two distinct statutory provisions, the test to be applied to determine whether there are two offenses or only one, is whether each provision requires proof of an additional fact which the other does not.⁶⁹

“PHMSA has used this rationale in certain cases to ensure that alleged violations are indeed separate, meaning they each require proof of an additional fact, or have their own ‘evidentiary basis.’”⁷⁰

For example, in *Colorado Interstate Gas Company*, PHMSA considered whether certain alleged violations arising from an accident that occurred when a contractor’s bulldozer struck and ruptured a natural gas pipeline. The pipeline operator was cited for eight alleged violations of 49 C.F.R. § 192.605 for failure to follow its written operating procedures. One of the procedures allegedly violated required the operator’s area manager to conduct oversight of contract line locators and another required the operator to perform documented evaluations of contract line locators. PHMSA found that these two separately alleged violations had the same evidentiary basis, namely the conduct of

⁶⁸ 284 U.S. 299 (1932).

⁶⁹ *Id.* at 304.

⁷⁰ *ExxonMobil Pipeline Company*, CPF No. 5-2013-5007, at 19 (citation omitted).

the employee responsible for overseeing the line locator, and should be treated as a single offense for purposes of penalty assessment 49 C.F.R § 190.226.⁷¹ The Commission finds that PHMSA's approach to the issue of separate violations is consistent with Kentucky law⁷² and will employ it in this proceeding.

The Commission finds Violations 1, 2, and 3 to be separate violations each subject to assessment of a civil penalty under KRS 278.992(1). Each violation is based on a failure to follow a distinct installation specification in LG&E's GOMI. Each finding of violation required proof of an additional fact that the other two did not and thus each had its own evidentiary basis. Violation 1, for example, required proof that LG&E failed to follow the GOMI specification for the number and size of coupler-harness bolts, whereas Violation 2 and 3 did not. Further, each violation was a causal factor in a serious accident. The Commission finds that it would be inappropriate for purposes of penalty assessment to treat LG&E's failure to follow three installation specifications the same as if it had only violated one specification simply because the violations involve the same coupling installation.

A separate issue is whether all of the violations arising from the failure of the 12-inch coupling are a "related series of violations" within the meaning of 49 C.F.R. § 190.223 and thus subject to a maximum penalty of \$1,000,000. The Commission has not previously interpreted this provision and will consider how PHMSA, the agency which promulgated 49 C.F.R. § 190.223, applies the related-series penalty cap.

⁷¹ *Colorado Interstate Gas Company*, CPF No. 5-2008-1005, at 12 (PHMSA Nov. 23, 2009).

⁷² *Cf. Clark v. Commonwealth*, 267 S.W.2d 668, 675 (Ky. 2008).

In *Colorado Interstate Gas Company*, PHMSA considered the assessment of penalties against an operator alleged to have violated multiple operating procedures dealing with pipeline locating and marking requirements. The operator argued that the violations were a related series because the procedures all pertained to the same subject matter, and that the civil penalties for the violations could therefore not exceed the statutory cap for a related series of violations. PHMSA rejected that argument and interpreted the term “related series” to mean “a series of daily violations.”⁷³ PHMSA held:

In the case of pipeline safety regulations, because each pipeline system is unique the regulations allow the operator to develop written procedures tailored to its system, but each section of those procedures is enforceable by PHMSA in the same manner as a code section. If PHMSA were unable to hold operators accountable for following all of their procedures in a given subject area of the manual because they were in some sense related, public safety would suffer and the intent of Congress in enacting the pipeline safety laws would be frustrated.⁷⁴

In support of its decision, PHMSA cited *United States v. American Airlines, Inc.*,⁷⁵ in which the court reviewed the Federal Aviation Administration’s (“FAA”) assessment of civil penalties against an airline for violation of the requirement to screen passengers’ carry-on luggage for weapons. The maximum penalty was \$1,000 per violation. The FAA cited the airline for failing to inspect 25 carry-on bags on a single flight on a single day and sought to assess the maximum penalty for 25 violations, for a total of \$25,000.

⁷³ *Colorado Interstate Gas*, CPF No. 5-2008-1005, at 9.

⁷⁴ *Id.*

⁷⁵ 739 F.Supp. 52 (D. Mass. 1990).

The airline argued that the 25 failures to inspect carry-on bags should be considered to constitute one violation because all of the bags were transported on a single flight. The court rejected that argument, holding that each failure to inspect an individual's bag was a discrete event, not a discrete condition, and that each time there is no inspection, there is a separate, complete violation.⁷⁶ Obviously, it only takes one uninspected suitcase to pose a grave security risk. The court found that it would be anomalous to fine an airline that fails to inspect one bag the same as an airline that fails to inspect 25 bags on a single flight. The court concluded that the purpose of federal aviation laws to deter safety violations would be undermined if cumulative fines could not be imposed for multiple violations arising from a single flight.⁷⁷

The Commission finds PHMSA's interpretation of "related series" to mean a series of daily violations persuasive. The Commission therefore rejects LG&E's contention that all of the violations pertaining to the failed 12-inch coupling are a related series within the meaning of 49 C.F.R. § 190.223. The Commission finds, however, that the 74 violations of MAOP regulations are a series of daily violations subject to the \$1,000,000 cap.⁷⁸

Based on the foregoing, the Commission finds that for purposes of penalty assessment, there are six separate violations, one of which recurred 74 times. The

⁷⁶ *Id.* at 53.

⁷⁷ *Id.*

⁷⁸ The Commission does not consider the violations arising from the noncompliant installation of the couplings to be recurring daily violations as the failure to follow GOMI installation specifications occurred on a single day, the day of the installations.

Commission therefore finds that LG&E is subject to a maximum civil penalty of \$1,500,000.⁷⁹

In determining the amount of the penalty for each violation, KRS 278.992(1) directs the Commission to consider “the size of the business of the person charged, the gravity of the violation, and the good faith of the person charged in attempting to achieve compliance, after notification of the violation.” The Commission also finds instructive and will consider, in assessing a penalty under KRS 278.992(1), the factors used by the PHMSA Associate Administrator for Pipeline Safety, to determine the amount of a civil penalty for a violation of a federal pipeline safety standard:

- (a) The Associate Administrator will consider:
 - (1) The nature, circumstances and gravity of the violation, including adverse impact on the environment;
 - (2) The degree of the respondent's culpability;
 - (3) The respondent's history of prior offenses;
 - (4) Any good faith by the respondent in attempting to achieve compliance;
 - (5) The effect on the respondent's ability to continue in business; and

- (b) The Associate Administrator may consider:
 - (1) The economic benefit gained from violation, if readily ascertainable, without any reduction because of subsequent damages; and
 - (2) Such other matters as justice may require.⁸⁰

⁷⁹ This assumes a maximum per violation penalty of \$100,000 for Violations 1, 2, 3, 4, and 5, and a maximum penalty of \$1,000,000 for the recurring Violation 6.

⁸⁰ 49 C.F.R. § 190.225.

In determining the amount of the penalties, the Commission is also mindful of the dual purpose of civil penalties. “While the fines imposed may be intended to punish [the violator], they are also designed to deter similar conduct in the future.”⁸¹ Fines are intended to deter further violations by both the fined party and others similarly situated.⁸²

The Commission also notes that the assessment of a civil penalty for violation of minimum pipeline safety standards is a matter vested in the sound discretion of the Commission. “The assessment of a penalty is particularly delegated to the administrative agency. Its choice of sanction is not to be overturned unless ‘it is unwarranted in law’ or ‘without justification in fact.’ The assessment is not a factual finding but the exercise of a discretionary grant of power.”⁸³

The Commission considers the gravity of the violation to be the most important mandatory penalty assessment consideration. In this case, the Commission finds Violations 1, 2, and 3 to be of the highest level of gravity. The violations resulted in the failure of a critical component on a 12-inch transmission pipeline. The violations occurred in an HCA. The violations were a causal factor in the September 17, 2014 accident. The accident resulted in personal injury requiring hospitalization and approximately \$1,324,000 of property damage and response costs. Had there been ignition the consequences could have been catastrophic and could have resulted in loss of life and

⁸¹ *Denton v. Kentucky Horse Racing Authority*, 172 S.W.3d 803, 808 (Ky. 2004) (quoting *Vanhoose v. Commonwealth*, 995 S.W.2d 389, 393 (Ky. Ct. App. 1999)).

⁸² *Vanhoose*, 995 S.W.2d, at 393.

⁸³ *Id.* at 393 (Ky. Ct. App. 1999) (quoting *Panhandle Coop. Ass'n v. Environmental Protection Agency*, 771 F.2d 1149, 1151 (8th Cir.1985)).

the destruction of homes. The accident resulted in the loss of service to approximately 2,400 customers and the release of 7,000 mcf.

The Commission finds the gravity of Violation 4 to be high. The violation compromised a critical component on an 8-inch pipeline located in an HCA. Although the violation was not a causal factor in the September 17, 2014 accident and did not contribute to its severity, the failure to install washers on both ends of the coupling-rod assembly resulted in severe deformation of some brackets from compression and compromised the integrity of the coupling.

The Commission finds the gravity of Violation 5 to be high. A proper inspection of the weld on the coupling would have shown that the coupling was improperly installed and could have prevented the September 14, 2014 accident. The violation occurred in an HCA.

The Commission finds the gravity of Violation 6 to be moderate. LG&E's operation of the Ballardsville pipeline at a pressure in excess of the line's MAOP occurred in an HCA. There was, however, no MAOP violation on the day of the accident, and there is no evidence in the record that prior MAOP violations were a causal factor in the September 17, 2014 accident or contributed to the accident's severity.

The next mandatory assessment consideration is the good faith of LG&E "in attempting to achieve compliance, after notification of the violation,"⁸⁴ which the Commission interprets to mean efforts to achieve compliance with the specific regulation or safety standard violated. Violations 1, 2, 3, and 4 are based on an LG&E employee's

⁸⁴ The Commission notes that in contrast, PHMSA does not consider post-violation efforts to achieve compliance a relevant factor in assessing a penalty. *See City of Richmond, Virginia*, CPF No. 1-2013-001, at 12 (PHMSA May 2, 2014).

failure to follow its written operating procedures for the installation of mechanical couplings. The Commission recognizes that LG&E's Action Plan includes enhanced procedures for the installation of mechanical couplings, improved training, proficiency requirements, and step-by-step checklists to ensure future compliance with installation procedures and specifications. The Commission acknowledges that LG&E took these measures in good faith to achieve compliance with the requirement that it follow its written operating procedures. The Commission finds, however, that the measures are steps that any reasonable and prudent operator would take in response to such an egregious disregard of installation procedures, and do not warrant a reduction in the penalties given the gravity of these violations.

Violation 5 is based on an LG&E employee's failure to inspect the weld on the 12-inch coupling to ensure the weld was adequate. The Commission recognizes that LG&E's Action Plan includes enhanced audit and inspection procedures with checklists. The Commission acknowledges that LG&E took these measures in good faith to achieve compliance with the requirement that it inspect all welds to assure they are acceptable. The Commission finds, however, that the measures are steps that any reasonable and prudent operator would take in response to such a clear failure to perform an adequate inspection, and do not warrant a reduction in the penalties given the gravity of these violations.

Violation 6 is a derivative violation in the sense that but for the noncompliant installation of the 12-inch coupling and inadequate inspection of the welding, MAOP violations would not have occurred. Therefore, LG&E's efforts to ensure future compliance with its written coupling-installation specifications and weld-inspection

standards are appropriately considered in the assessment of a penalty for Violation 5. The Commission also recognizes LG&E's efforts to locate and remove all couplings on its transmission system and heightened-risk couplings on its pipelines operating at greater than 60 psig. To the extent LG&E is operating a segment of pipe at a pressure exceeding its MAOP solely as a result of noncompliant installation of a coupling, removal of the coupling will enable LG&E to bring operation of such segment into compliance with the MAOP regulations. The Commission thus will take account of this effort in assessing a penalty for Violation 5.

The third mandatory assessment factor is the size of LG&E's business. LG&E acknowledges that it is one of the largest gas utilities in the state and that a penalty of \$1,000,000 or less would have a minimal impact on its ability to continue in business. LG&E correctly notes that in prior cases, the Commission has reduced or suspended penalties when an otherwise warranted penalty would be too burdensome on the penalized violator considering its size.⁸⁵ The Commission agrees that the size of the violator's business is a mitigating and not a penalty-enhancing factor. Considering the size of LG&E's business, no penalty abatement is warranted in this case.

The Commission notes that KRS 278.992(1) does not preclude it from considering factors other than the three mandatory penalty assessment considerations. Thus, while not an effort to achieve compliance with the regulations violated, the Commission acknowledges the excavation work that exposed the 12-inch coupling prior to the September 17, 2014 accident was part of a safety initiative to reconfigure the 12-inch transmission line to allow an inline inspection tool to pass internally through the pipe.

⁸⁵ Brief, at 15–16.

Although not a prerequisite to assessment of a penalty under KRS 278.992(1), the Commission finds and will consider for penalty-assessment purposes that Violations 1, 2, 3, 4, and 5 were willful.⁸⁶ The violations were the result of intentional, not accidental or involuntary, conduct on the part of its employees. An LG&E employee intentionally used four 3/4-inch rod assemblies instead of seven as specified in LG&E's GOMI. An employee intentionally did not weld the inside surface of one of the lugs or inspect the weld to ensure its acceptability. And an employee intentionally installed washers on only one end of some of the harness-assembly rods.

Having reviewed the record and considered the assessment criteria, the Commission finds that LG&E should be assessed a total civil penalty in the amount of \$395,000 calculated as follows:

Violation 1: \$100,000

Violation 2: \$100,000

Violation 3: \$100,000

Violation 4: \$ 30,000

Violation 5: \$ 50,000

Violation 6: \$ 15,000

The Commission further finds that LG&E should provide status reports to the Commission regarding the status of the implementation of its Action Plan. The Commission finds that LG&E should notify the Commission when it has completed removal of the remaining mechanical-coupling systems on its transmission pipelines and

⁸⁶ The term "willful" applies to the action or failure to act that results in the violation. It does not necessarily require an intent to commit a violation, but may include conduct that reflects an indifference to its natural consequences. See *Huddelston v. Hughes*, 843 S.W.2d 901, 905 (Ky.Ct.App. 1992).

report whether any defects in the couplings are observed. The Commission also finds that LG&E should provide the Commission, on an annual basis for a period of five years, a summary report on implementation of the LG&E's Action Plan. The report should include the number of mechanical-coupling systems removed from high-pressure distribution lines in the period covered by the report and an analysis of any defects that are observed in the removed couplings. If defects are observed, the report should detail what actions, if any, LG&E is taking in response. Finally, the Commission finds that LG&E should provide the Commission with a description of organizational changes made on its gas side subsequent to the September 17, 2014 accident.

IT IS THEREFORE ORDERED that:

1. LG&E is assessed a civil penalty in the total amount of \$395,000 for four violations of 49 C.F.R § 192.605(a) and 807 KAR 5:022, Section 13(2), one violation of 49 C.F.R § 192.241 and 807 KAR 5:022, Section 5(8), and seventy-four violations of 49 C.F.R. §192.619(a) and 807 KAR 5:022, Section 13(11)(a).
2. LG&E shall pay \$395,000 within 30 days of the date of this Order by cashier's check or money order payable to the Kentucky State Treasurer, and mailed or delivered to the Office of the General Counsel, Kentucky Public Service Commission, 211 Sower Boulevard, Post Office Box 615, Frankfort, Kentucky 40602.
3. LG&E shall provide the Commission written notification that it has completed removal of all remaining mechanical couplings on its transmission system within 30 days of removal of the last coupling. The notification shall state whether any defects in the coupling systems are observed.

4. LG&E shall submit annual written reports on the status of implementation of its Action Plan. The reports shall include the number of coupling systems removed from distribution lines having an operating pressure in excess of 60 psig in the preceding calendar year and an analysis of any defects that are observed in the removed couplings. If defects are observed, the report shall detail what actions, if any, LG&E is taking in response. LG&E shall submit annual reports for the years 2018-2022, and shall submit each report by January 31 of the following year.

5. LG&E shall provide the Commission with a description of all organizational changes made on its gas side since September 17, 2014.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

By the Commission



ATTEST:


Executive Director

*Honorable Allyson K Sturgeon
Senior Corporate Attorney
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202

*Honorable Lindsey W Ingram, III
Attorney at Law
STOLL KEENON OGDEN PLLC
300 West Vine Street
Suite 2100
Lexington, KENTUCKY 40507-1801

*Sara Veeneman
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202

*Louisville Gas and Electric Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40232-2010

*Louisville Gas and Electric Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40232-2010

*Louisville Gas and Electric Company
Louisville Gas and Electric Company
220 W. Main Street
P. O. Box 32010
Louisville, KY 40232-2010