COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF	**)**	
LOUISVILLE GAS AND ELECTRIC	**)**	**CASE NO. 2019-00301**
COMPANY FOR AN AMENDED	**)**	
GAS LINE TRACKER	**)**	

RESPONSE OF LOUISVILLE GAS AND ELECTRIC COMPANY TO ATTORNEY GENERAL'S INITIAL DATA REQUESTS DATED OCTOBER 17, 2019

FILED: NOVEMBER 1, 2019

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **John P. Malloy**, being duly sworn, deposes and says that he is Vice President – Gas Distribution for Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

John P. Malloy

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 31st day of October 2019.

Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Peter Clyde**, being duly sworn, deposes and says that he is Manager Transmission Integrity and Compliance for Louisville Gas and Electric Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

Peter Clyde

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 31st day of October 2019.

Notary Public (SEAL)

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 1

Witness: John P. Malloy / Peter J. Clyde

Q-1. Reference the Application, generally.

a. Cite any applicable PHMSA or other regulatory requirement mandating the use of inline inspections for gas pipeline assessments.

b. How has LG&E previously performed assessments for the line segments at issue in this case?

c. How does LG&E perform assessments for other non-uniform diameter pipelines in its system?

d. Provide the number and length of multi-diameter pipelines in LG&E's system.

A-1. a. Federal pipeline safety regulation 49 CFR 192.921 requires assessments of high consequence areas to be completed by internal inspection (inline inspection), pressure test, direct assessment, or other technology. New federal pipeline safety regulation 49 CFR 192.710 published October 1, 2019 requires moderate consequence areas to be assessed by internal inspection, pressure test, spike hydrostatic pressure test, direct examination, guided wave ultrasonic testing, direct assessment, or other technology. New federal pipeline safety regulation 49 CFR 192.624 published October 1, 2019 requires the maximum allowable operating pressure of pipelines to be reconfirmed. This can be done through pressure test, pressure reduction, engineering critical assessment, pipe replacement, or alternate technology. Inline inspection data can be used to complete engineering critical assessments.

LG&E considered replacement, pressure test, and pressure reduction in lieu of inline inspection. Direct assessment is not an approved method to satisfy the new maximum allowable operating pressure reconfirmation requirements of 49 CFR 192.624 and does not provide quantitative data on the condition of the pipeline from end to end. See the response to PSC 1-12 for the replacement alternative cost-benefit analysis. The Interstate Natural Gas Association of America (INGAA) reported pressure tests cost between $538K and $2.2M per mile based on 200 operator pressure test data points (Safety of Gas Transmission Pipeline Rule Cost Analysis: A Review of the Natural Gas

Notice of Proposed Rulemaking and Preliminary Regulatory Impact Analysis dated July 7, 2016, section 1.5 Pressure Test Unit Cost). Segments could fail the test and then need to be replaced which would be an additional cost. Pressure tests would also require taking the pipeline out of service, interrupting service to customers, are destructive, and would not provide quantitative data on the condition of the pipeline. A pressure reduction would inhibit the Company's ability to meet customer load requirements and the Company would loose system reliablility in winter periods. In addition, reducing pressure does not provide quantitative data on the condition of the pipeline.

Leveraging an expanded set of technologies enables LG&E to achieve a higher overall level of pipeline safety and pipeline integrity. The tools provide a better understanding of the threats to the pipeline and its condition.

b. Assessments previously performed by LG&E for line segments at issue in this case were predominantly completed by inline inspection. Those assessments were conducted based on 49 CFR Part 192 Subpart O and not the new regulations published October 1, 2019. In addition, as discussed above, leveraging an expanded set of technologies enables LG&E to achieve a higher overall level of pipeline safety.

c. Assessments under 49 CFR Part 192 Subpart O are conducted by inline inspection. The new regulations published October 1, 2019 specifically require additional inline inspection technologies to be run in the pipeline, including the types of tools LG&E is currently having developed, if the data will be used for an engineer critical assessment to reconfirm the pipeline maximum allowable operating pressure. Some of the benefits of using inline inspection are discussed in the response to part (a) above.

d. LG&E's gas transmission system is generally interconnected and made up of various pipeline diameters. For the purposes of running smart inline inspection tools, sections of the system are defined, some of which contain varying diameters. Those pipeline sections in which LG&E has defined for running smart inline inspection tools and which contain varying diameters include the following.
   - Western Kentucky A pipeline, 22 miles
   - Western Kentucky B pipeline, 22 miles
   - Western Kentucky C pipeline, 4 miles
   - Penile to Blanton to Paddy's pipeline, 11 miles
   - Magnolia 16-inch pipeline, 40 miles
   - Magnolia 20-inch pipeline, 30 miles

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 2

Witness: John P. Malloy / Peter J. Clyde

Q-2. Reference the Direct Testimony of John P. Malloy ("Malloy Direct") at 3, wherein he states that "ILIs are an excellent way of thoroughly and timely assessing pipe in a non-destructive manner."

a. Provide the other approved ways of assessing pipelines. Any response should differentiate assessment methodologies approved for Moderate Consequence Areas and High Consequence Areas ("HCA"s) as those terms are used by PHMSA.

A-2. a. HCAs can be assessed by internal inspection (inline inspection), pressure test, direct assessment, or other technology. MCAs can be assessed by internal inspection, pressure test, spike hydrostatic pressure test, direct examination, guided wave ultrasonic testing, direct assessment, or other technology.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 3

Witness: John P. Malloy / Peter J. Clyde

Q-3. With regard to the multi-diameter tool to be constructed by Rosen USA for the purpose of performing in-line inspections ("ILI"s):

a. Provide the tool's total projected cost.

b. Will the Company own the tool, or will Rosen USA? If the Company will own it, will the Company's personnel always perform the proposed ILIs, or will Rosen USA personnel?

a. Provide the tool's expected lifespan. If the Company will own the tool, explain the Company's anticipated depreciation treatment of the tool.

b. Refer to the Direct Testimony of Robert M. Conroy("Conroy Direct"), at 5. Explain why a cost for the tool is provided for the years 2020-2021, but not any other years. Explain whether additional costs will be incurred in later years, and if so, identify those costs and the reasons therefor.

c. Explain whether the Company engaged in an RFP process for the acquisition of the mult-diameter tool. If so, provide the results of the RFP.

d. Provide a breakdown of each item of projected O&M costs (incremental/recurring and one-time) associated with the multi-diameter tool.

e. Refernce Conroy Direct, at 5, lines 10-11. Explain why the Company will have to pay Rosen USA additional O&M expense for its development of the tool.

f. Identify any and all other costs associated with the development, construction, deployment, operation and ownership of the multi-diameter tool for which the Company will be responsible.

A-3. a. LG&E is responsible for [redacted] of the [redacted] estimated cost to develop the new tools. Approximately [redacted] of the LG&E cost is expected to be incurred in 2019 and approximately [redacted] of the LG&E cost will occur in 2020-2021.[1]

b. Rosen USA will own the tools.

a. Rosen has indicated that the electronic components in their inline inspection tools typically need to be upgraded after the tool is over seven years old. This is because electronic components like microcontrollers can be discontinued by their manufacturers. Although Rosen stocks spare parts of these types of components, the tools usually get upgraded with the latest electronics. Rosen currently has 46 multi-diameter inline inspection tools in their fleet. To date, Rosen has retired one multidiameter tool due to excessive damage. It has also discarded one multi-diameter tool design and replaced it with an improved design. Thus, the vast majority of multidiameter tools Rosen has developed remain in operation today.

b. The cost to develop the new tools will be paid by the end of 2021. There will be additional costs associated with running the tools. See the response to PSC 1-1 and PSC 1-12 for the costs.

c. See the response to PSC 1-4b.

d. See the response to PSC 1-12.

e. The multidiameter EMAT and MFL-C tools needed do not exist. LG&E was only able to identify one vendor, Rosen USA, willing to develop the tools. They required a fee to do so.

f. See the response to PSC 1-12.

[1] For the same reasons set forth in LG&E's September 27, 2019 Petition for Confidential Treatment, the pricing information in this response is confidential, and, therefore, LG&E seeks confidential protection of it.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 4

Witness: John P. Malloy / Peter J. Clyde

Q-4. Explain whether the multi-diameter tool can appropriately be reffered to as a smart pig. If so, identify the types of ILI inspections it will be capable of performing.

a. State whether the multi-dimater tool is capable of performing multiple analyses simultaneously.

b. Explain also whether multiple runs of the multi-diameter tool may be required to perform some types of analyses.

A-4. There are actually two technologies needed in the multidiameter tools that Rosen is developing and each will be achieved via a separate tool. They are commonly referred to as "smart pigs." One new tool will include the technology to perform electromagnetic acoustic tranducer (EMAT) inspections. The other new tool will include the technology to perform circumferential magnetic flux leakage (MFL-C) inspections.

a. The EMAT tool will only gather EMAT data. The MFL-C tool will only gather MFL-C data. However, the data captured can be analyzed in different ways to provide different information.

b. Each new tool is only required to be run one time per inspection if a full data set is collected. Speed excursions and tool damage can result in multiple runs being required.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 5

Witness: John P. Malloy / Peter J. Clyde

Q-5. Reference Malloy Direct, generally. Explain whether the Company has developed an all-in operating cost basis for use of the multi-diameter tool which includes crew labor, O&M, etc. State whether costs were developed on a time-of-use basis (whether by hour or day), distance (whether in feet, or meters), or some other basis.

A-5. LG&E has developed an all-in operating cost. See the response to PSC 1-12. The costs for developing the multi-diameter tools and the estimated costs for running inline inspection tools are included in this response.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 6

Witness: John P. Malloy / Peter J. Clyde

Q-6. Reference Malloy Direct, generally. Provide a discussion of the process by which the Company decided that ILIs, in general, were the most cost-effective means of meeting compliance with all regulatory requirements at issue in this filing, as opposed to pressure testing, direct assessment, or other technologies.

a. Refer also to Exhibit JPM-1, Executive Summary, wherein it is stated that the Company "has considered various alternatives in assessing the safety, integrity, and reliability of several of [its] gas pipelines. . . " Identify all other options which the Company considered in lieu of ILIs, including any alternatives that may not be identified in Exhibit JPM-1. Provide any cost-benefit analyses performed with regard to all such alternatives.

b. Provide an additional discussion of the process by which the Company decided that the use of the proposed multi-diameter tool was the least-cost means of conducting the ILIs.

A-6. a. See the response to AG 1-1a.

b. See the response to PSC 1-12.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 7

Witness: John P. Malloy / Peter J. Clyde

Q-7. Reference Malloy Direct , generally. Explain whether the multi-diameter tool could be used to conduct future ILIs in other 16-inch and 20-inch pipe segments not identified in the current filing.

A-7. LG&E also plans to use the new multi-diameter tools in the Blanton to Paddy's pipeline.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 8

Witness: John P. Malloy / Peter J. Clyde

Q-8. Reference Malloy Direct, at 3, wherein he states, "However, ILI tools with the enhanced inspection technologies are not currently available for pipelines of varying diameter with operating characteristics such as those in the Western Kentucky A and B pipelines and other lines in the LG&E's gas transmission system." Explain whether this statement excludes or includes the proposed multi-diameter tool.

A-8. The statement excludes the proposed multi-diameter tools because they are currently not available.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 9

Witness: John P. Malloy / Peter J. Clyde

Q-9. Reference Malloy Direct, at 3-4. Explain how the multi-diameter tool will be able to avoid the problem of speed excursions.

a. Explain how the Company will be able to determine whether a speed excursion, and any resulting data gaps has or have occurred when the multi-dimeter tool is passing through a transition point from a 16-inch pipe to a 20-inch pipe, and vice versa.

A-9. The new multi-diameter tools are being built to be "low friction" tools. This allows them to pass through the pipeline with a reduced risk of becoming stuck. Thus, they are less likely to break free of a stuck location at a high velocity causing a speed excursion. LG&E's experience has shown that speed excuursions are more likely to occur at locations of a line diameter change. Thus, targeted reduction of line diameter changes along with developing multi-diameter tools will reduce the risk of speed excurions. This solution is much more cost-effective than wholesale replacement of the entire length of a line.

a. The inline inspection vendor data analyst reviews data collected during the inspection and determines if a speed excursion occurred and if data gaps resulted. The speed excursion may not be identified immediately. This can cause a delay in scheduling reruns thus impacting both schedule and cost.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 10

Witness: John P. Malloy / Peter J. Clyde

Q-10. Assuming the Commission approves the instant application, explain whether any of the Company's remaining 22-inch pipes will require ILIs or other types of inspections prior to being replaced.

A-10. LG&E performs various types of inspections of its pipelines, such as leak surveys and pipe to soil potential readings, as required by federal pipeline safety regulations. These will occur both before the 22-inch pipe is replaced and occur on the new pipe after the replacement is complete. Their need is not impacted by the replacement project. A geometry and MFL-A inline inspection tool will be run through the Western Kentucky B pipeline in 2020. This pipeline has 16-inch, 20-inch and 22-inch pipe in it. The tools will only collect data on the 16-inch and 20-inch pipe since they are not capable of collecting data on 22-inch pipe.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Data Requests
Dated October 17, 2019

Case No. 2019-00301

Question No. 11

Witness: John P. Malloy / Peter J. Clyde

Q-11. Explain whether any of the proposed pipe replacement projects are located in areas that are HCAs.

A-11. Approximately 1.7 miles of the proposed replacements are in HCAs.