COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC PURCHASED GAS	**)**	
ADJUSTMENT FILING OF LOUISVILLE GAS	**)**	**CASE NO. 2023-00089**
AND ELECTRIC COMPANY	**)**	

RESPONSE OF
LOUISVILLE GAS AND ELECTRIC COMPANY
TO
THE COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION
DATED APRIL 28, 2023

FILED: MAY 12, 2023

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Peter Clyde,** being duly sworn, deposes and says that he is Manager **-** Gas Transmission and Distribution 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 10th day of May 2023.

(SEAL)
Notary Public

Notary Public, ID No. KYNP53286

My Commission Expires:

January 22, 2027

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Andrea M. Fackler**, being duly sworn, deposes and says that she is Manager - Revenue Requirement/Cost of Service for LG&E and KU Services Company, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge, and belief.

Andrea M. Fackler

Andrea M. Fackler

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 11th day of May 2023.

Caroline J. Davison

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22 2027

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Pamela L. Jaynes**, being duly sworn, deposes and says that she is Director - Gas Management, Planning, and Supply for Louisville Gas and Electric Company, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge and belief.

Pamela L. Jaynes

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 9th day of May 2023.

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Mark Satkamp**, being duly sworn, deposes and says that he is Director – Gas Control and Storage 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.

Mark Satkamp

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 9th day of May 2023.

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY
COMM EXPIRES 1/22/2027

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 1

Responding Witness: Mark Satkamp

Q-1. Provide a detailed timeline of the Doe Run storage field (Doe Run) retirement.

A-1. The Doe Run closure and retirement project started in 2022 and will continue through 2024. The project includes reducing the volume of natural gas in the field (completed on April 28, 2023), retiring associated pipelines (scheduled to begin in June 2023 with completion expected by October 2023), and plugging 109 wells (started in July 2022 and planned to be completed by December 2024).

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 2

Responding Witness: Mark Satkamp

Q-2. Provide any additional natural gas storage fields that are currently active, the life expectancy for each storage field, and any plans LG&E might have to retire the fields.

A-2. LG&E has four active storage fields: Magnolia Upper (1958), Magnolia Deep (1962), Center (1968) and Muldraugh (1931). The four fields utilize depleted natural gas production reservoirs that were reconditioned into storage fields. Depleted reservoirs are those formations that have already been tapped of all their recoverable native natural gas, which leaves an underground formation, geologically capable of holding natural gas. The four reservoirs' geological characteristics are well known and analyzed by LG&E on a periodic basis. With proper maintenance, LG&E anticipates the four fields will remain in service indefinitely and has no plans to retire any of these four fields.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 3

Responding Witness: Mark Satkamp

Q-3. Provide the storage capacity of Doe Run and any other storage fields used by LG&E.

A-3. The storage capacity of Doe Run and LG&E's other four storage fields is set forth in the table below. All natural gas volumes are listed in Mcf (thousand cubic feet).

MCF	Doe Run	Muldraugh	Magnolia Upper	Magnolia Deep	Center	Total
Maximum Inventory	5,800,000	4,600,000	6,000,000	4,400,000	5,100,000	25,900,000
Base Gas Inventory	1,810,000	1,450,000	2,460,000	2,370,000	2,720,000	10,810,000
Working Gas @ Max. Inventory	3,990,000	3,150,000	3,540,000	2,030,000	2,380,000	15,090,000

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 4

Responding Witness: Mark Satkamp

Q-4. Provide the monthly injections and withdrawals for Doe Run for the period of 2020, 2021, 2022, and 2023.

A-4. The monthly injections and withdrawals for Doe Run for the period 2020 through 2023 are set forth in the table below. All natural gas volumes are listed in Mcf (thousand cubic feet).

	Doe Run Storage Field							
	2020		2021		2022		2023	
Month	Injected	Withdrawn	Injected	Withdrawn	Injected	Withdrawn	Injected	Withdrawn
January	0	716,263	0	689,011	0	742,563	0	70,244
February	0	724,868	0	616,511	0	375,587	0	44,383
March	0	321,564	0	304,075	0	0	0	38,689
April	0	257,578	0	331,429	0	137,665	0	12,756
May	0	0	0	0	0	4,639	NA	NA
June	0	0	0	0	0	0	NA	NA
July	587,210	0	597,787	0	0	0	NA	NA
August	673,801	0	645,120	0	0	0	NA	NA
September	578,640	0	598,056	0	0	0	NA	NA
October	529,148	0	498,091	0	0	0	NA	NA
November	13,817	0	0	0	0	8	NA	NA
December	3,548	0	0	541,603	700	53,771	NA	NA
Total	2,386,164	2,020,272	2,339,054	2,482,628	700	1,314,234	0	166,072

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 5

Responding Witness: Mark Satkamp

Q-5. Provide the percentage of annual gas supply represented by Doe Run storage injections for each of the last ten years.

A-5. The percentage of annual gas supply purchases represented by Doe Run storage injections for each of the last ten years is provided in the table below.

Year	Doe Run Injections as a Percentage of Annual Gas Supply
2013	8%
2014	7%
2015	9%
2016	9%
2017	10%
2018	8%
2019	8%
2020	8%
2021	7%
2022*	0%*

*Doe Run storage injections were 700 Mcf in 2022, representing less than 1% of annual gas supply purchases. The 700 Mcf was injected in December 2022 in order to run de-watering pigs on a portion of the main pipeline on the suction side of Muldraugh Compressor Station to remove any free liquids that had accumulated.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 6

Responding Witness: Pam Jaynes

Q-6. Explain how the retirement of Doe Run will impact LG&E's ability to hedge natural gas for its customers and whether LG&E has any plans to mitigate the loss of Doe Run.

A-6. The retirement of Doe Run will reduce LG&E's ability to physically hedge its winter season firm sales requirements because it will reduce the volume of gas that LG&E can inject into storage during the summer season for withdrawal during the winter season. Prior to the retirement of Doe Run, LG&E was able to physically hedge about 44% of its normal winter season (November through March) firm customer requirements. After the retirement of Doe Run, LG&E will still be able to physically hedge about 34% of its normal winter season (November through March) firm customer requirements. LG&E has no plans to mitigate the portion of the physical hedge lost. For example, consistent with past practice, LG&E does not plan to purchase financial hedging instruments.

As described in the Doe Run Retirement Analysis Report provided in response to Question No. 7, the potential savings associated with injecting gas into Doe Run during the summer season for withdrawal during the winter season was considered in the economic analysis. Despite the loss of this potential benefit, the economic analysis supports the retirement of Doe Run.

LG&E is mitigating the loss of Doe Run from a reliability perspective through the purchase of additional interstate pipeline capacity. LG&E has purchased 30,000 MMBtu/day of winter season (November through March) Rate STF service from Texas Gas Transmission, LLC. As described in the Doe Run Retirement Analysis Report provided in response to Question No. 7, the cost of additional pipeline capacity was considered in the economic analysis. Despite this additional cost, the economic analysis supports the retirement of Doe Run.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 7

Responding Witness: Mark Satkamp

Q-7. Provide any economic analysis report LG&E conducted to determine that Doe Run was no longer cost-effective to maintain, including a summary of the findings of the report(s).

A-7. See attached. Certain information requested is confidential and is being provided under seal pursuant to a petition for confidential protection.

Doe Run Retirement Analysis

PPL companies

Gas Control and Storage Analysis
April 2022

Table of Contents

1 Executive Summary

Louisville Gas and Electric ("LG&E's" or the "Company") operates approximately 4,417 miles of gas distribution piping and 377 miles of gas transmission piping. During the winter heating season, LG&E supplies its 333,000 gas customers with natural gas delivered to its system by interstate pipelines and from the five LG&E natural gas storage fields. On a design winter day up to 46% of deliveries to firm sales customers are provided by LG&E's gas storage system.

The Doe Run natural gas storage field ("Doe Run") is located 27 miles WSW of Louisville, near Brandenburg, Kentucky. Doe Run was discovered in 1928 and converted to storage operations in 1946. The field covers 13,800 acres from Meade County, Kentucky under the Ohio River to Harrison County, Indiana. Doe Run is an aquifer storage field with 77 injection/withdrawal wells, 6 observation wells, 25 shale gas recovery wells and 1 disposal well. The gas is stored in an anticline structure in the Devonian Jeffersonville (Limestone) Formation. The field has 3.4 Bcf of working gas, 1.8 Bcf of base gas and a maximum daily withdrawal rate of about 60,000 Mcfd The annual volume cycled is about 2.6 Bcf.

In recent years, Doe Run has been LG&E's highest cost storage field to operate. The high cost of operations for Doe Run when compared to the rest of the storage fields is primarily driven by the high gas losses associated with gas migration between the storage formation and cap rock. Since 2005, annual natural gas loss volumes have steadily increased from 295,000 Mcf to current levels of 500,000 Mcf. Current gas loss volumes represent approximately 20% of the annual volume of cycled working gas. A 2021 NITEC Inventory study indicated the increasing gas loss volumes are most likely related to changes in the geological formation used to store natural gas. The theoretical formation changes cannot be proven conclusively. However, multiple inventory studies have supported this conclusion. Because it is not possible to perform corrective actions to the geological formation, no realistic actions can be taken to abate the storage losses.

In addition to gas losses, the gas withdrawn from Doe Run contains hydrogen sulfide (H_2S) and moisture resulting in a potential corrosive environment for storage field piping. Recent Doe Run piping failures resulting from internal corrosion highlighted the operational risk associated with pipe that has been subject to the corrosive constituents found in the wet gas system. Configuration of the majority of existing storage field piping does not allow maintenance cleaning or integrity inspections using in-line tools. Significant investments would be required to replace Doe Run Storage piping to enable maintenance pigging and the use of modern in-line inspection tools which would allow the Company to remove corrosive constituents and assess the integrity of the pipeline. In order to mitigate risk from internal corrosion, LG&E would need to increase annual capital expenditures for Doe Run to replace all legacy pipeline and wellheads. The increased capital expenditure requirements significantly affect the economics of continuing to operate the storage field.

The value of Doe Run Storage Field to customers is reliable gas delivery during the winter season and potential natural gas costs savings. As with LG&E's other storage fields, Doe Run has allowed the Company to avoid purchasing pipeline capacity from its pipeline service providers during the winter season, and to make generally lower cost natural gas commodity purchases during the summer season for delivery to customers during the winter season. However, forecasted seasonal price differences have weakened in recent years due primarily to increases in gas power generation and domestic LNG (liquified natural gas) exports which have increased the demand for natural gas year-round.

This analysis assesses the value of Doe Run Storage Field to customers and demonstrates that Doe Run Storage field should be retired immediately.

2 Introduction

Any new projects and an analysis of whether a set of assets should be retired, should be based on marginal cost. During a planning horizon, future (marginal) costs are avoidable, whereas embedded cost typically include cost components that reflect sunk costs, which are not avoidable. A "sunk cost" is one that cannot be altered by future action and is therefore irrelevant in the economic evaluation. Only marginal cost and marginal benefits should be considered in an economic evaluation to install a new asset or retire an existing asset.

LG&E has traditionally used a marginal cost analysis that considers only future cost to analyze investment decisions regarding new electric generation plant additions and retirement of existing generating units. For example, in the Integrated Resource Plan ("IRP") filed by LG&E and KU in 2014, only future costs were considered in evaluating the possible retirements of EW Brown Units 1 and 2. Sunk cost associated with these units were ignored in the analysis to support the 2014 IRP.

Given the high annual cost to own and operate Doe Run, the field was targeted for a detailed marginal cost analysis. The marginal cost analysis was completed in 2021.

3 Economic Analysis Methodology

The economic analysis used to evaluate the retirement or continued operation of Doe Run is based on a present value revenue requirement (PVRR) analysis. A PVRR analysis was performed for alternative scenarios. In the PVRR analysis, the present value of annual revenue requirements for the period 2022-2072[1] was calculated for each scenario. Annual revenue requirements include the following: (1) operation and maintenance expenses, (2) depreciation expenses, (3) return on investment (debt costs and return on investment), (4) property taxes, and (5) income taxes. The discount rate used is LG&E's weighted cost of capital reflecting the authorized rate of return on equity (ROE) from the order in the Company's most recent rate case. This is the standard methodology used in the utility industry for performing economic evaluations of investment alternatives.

4 Analysis of Alternatives

To assess the value of Doe Run to customers and whether the storage field should be retired, LG&E evaluated the decision to operate Doe Run beyond February 2022 for three scenarios. In the analysis, LG&E compared the revenue requirements of retiring Doe Run at the beginning of 2022 to continuous operation of Doe Run to the end of 2072.[1] The analysis compares the continue operating costs (i.e., ongoing marginal capital and fixed costs required to operate and maintain the storage field) to the field's retirement cost, which includes the costs to shut down the field and the incremental cost of pipeline capacity to replace the field's winter season deliverability. This analysis demonstrates that operating Doe Run beyond 2022 is not warranted.

The analysis considered the following scenarios:

Replacement Capital Expenditure Scenario. Under this scenario, Doe Run would continue to be operated but would be updated to ensure long-term viability of the field. This scenario assumes that key

[1] In 2072, Doe Run will be 125 years old, respectively. 2072 was selected to evaluate Doe Run over a long operating life.

components of the storage field, such as pipelines without traceable, verifiable and complete records and storage wellheads would be replaced with facilities that meet current industry standards and upgraded to ensure compliance with Department of Transportation (DOT) regulations and to ensure the long-term integrity of the storage field.

Maintain Capital Expenditure Scenario. Under this scenario, Doe Run would continue to be operated but with only minimal capital expenditures made to continue to operate the field. This scenario assumes that only current equipment such as control valves would be replaced and that any equipment that fails would be replaced, but no upgrades would be made to ensure the long-term viability of the field or to improve the operating efficiencies of the storage field. This is not a realistic scenario for the reliable long-term use of the field. The purpose of examining this scenario is to determine whether the storage field is economical assuming only minimal future investment in the field. In other words, this scenario serves as a limiting case for the economic viability of the storage field with minimal future investment in the field.

Close Doe Run Scenario. Under this scenario, Doe Run would be closed. This scenario includes capital expenditure to plug the wells and to abandon the pipelines by the end of 2025. Expenditures would be made through approximately 2023 to recover a portion of base gas from the field. Winter season deliverability from the field would be replaced with winter season firm transportation service from Texas Gas Transmission Company, LLC This scenario assumes that LG&E would lose the financial arbitrage (or hedge) normally experienced from using the Doe Run storage capacity to purchase typically lower priced gas during the summer injection season for withdrawal during the winter season when prices are typically higher.

5 Results of Economic Analysis

The PVRR analysis indicates that the most economical alternative is to retire the Doe Run Storage Field. Retiring the Doe Run Storage Field results in the lowest PVRR for the analysis period.

The following table summarizes the results of the PVRR analysis for the three alternatives

Alternative	**Net Present Value Revenue Requirements** **$000s**
Replacement Capital Expenditure Scenario (Continue to Operate Doe Run Storage Field but at Capital Expenditures Necessary to Ensure Ongoing Operation of the Storage Field)	$ 162,944
Maintain Capital Expenditure Scenario **(**Continue to Operate Doe Run Storage Field but at Minimal Capital Expenditures)	$ 110,097
Retire Doe Run Storage Field	$ 67,385

As shown in the above table, retiring the Doe Run Storage Field results in the lowest PVRR. Retiring the Doe Run Storage Field is more economical than the scenario of performing minimal capital upgrades to

the facility, and the scenario of making additional capital expenditures to ensure long-term operability of the storage field to comply with anticipated DOT regulations.

5.1 Gas Loss Considerations

Since Doe Run's development in 1946, there have been measurable gas losses from this field. The New Albany shale cap rock has natural fractures that allow gas to migrate laterally out of the storage formation. Annual gas losses prior to 2004 averaged 155 MMcf/year.

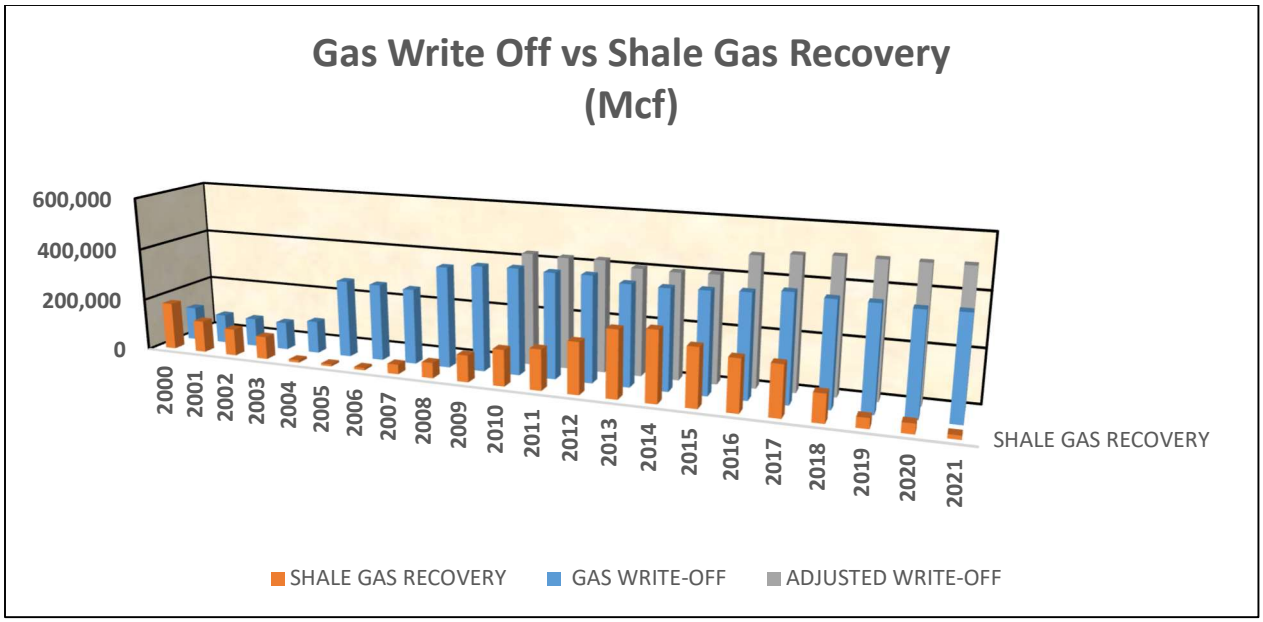
In the early 2000's, third party shale gas production in the New Albany shale reduced the cap rock formation pressure which drastically increased the gas migration from the Doe Run storage formation and increased gas losses. An outside engineering consultant was contracted in 2004 to perform an inventory analysis. The inventory analysis utilized techniques which account for the impact of the pressure hysteresis due to changes in gas occupied pore volume and/or changes due to gas migration. The inventory analysis for the study used a qualitative assessment technique. This approach evaluates the changes in inventory over time by overlaying the annual storage cycles on the pressure-content graph. The 2004 analysis recommended annual gas losses be increased to 300 MMcf. The inventory analysis has been repeated approximately every 5 years since the initial analysis in 2004.

In 2021, NITEC LLC was contracted to complete another inventory analysis.[2] NITEC used data from May 2016 to September 2021. All potential gas losses were quantified as annual losses unless otherwise specified. The 2021 inventory analysis indicates that starting in 2018 and going forward the Doe Run annual write off should be approximately -500 MMCF/year, an increase of -110 MMCF/year over previous loss calculation. The average write-off between 2018-2020 was -388.4 MMCF. It is beyond the scope and capability of the inventory analysis to determine the cause for the increase in the apparent annual gas loss volumes. Based on prior knowledge of the gas migration issues and the results from the recent reservoir simulation study, the additional gas loss volumes are most likely related to the change in the shale zone dynamics related to activities outside the storage boundary.

The dollar value of annual storage losses that will be recovered through LG&E's Gas Supply Clause (GSC) is projected to be $2,144,000 in 2022.

Table below shows gas losses going back to year 2000. The table includes LG&E's historical attempts to mitigate gas losses by utilizing a shale gas recovery system. The shale recovery required significant incremental operating costs with limited impact to gas losses. As a result, these shale recovery operations were suspended.

[2] See NITEC LLC, December 2021 "Inventory Analysis for Five Gas Storage Fields"



5.2 Pipeline Capacity Considerations

For system planning and gas supply acquisition purposes it is critically important to determine below-normal weather conditions and resulting system loads that might reasonably occur during any given year. A gas distribution utility must be reasonably assured that it has acquired adequate volumes of pipeline capacity and gas supply, and has installed storage, transmission, and distribution capacity sufficient to meet customer demands particularly when temperatures are colder than normal.

The ABB SENDOUT® model ("SENDOUT") was used to determine the impact of retiring Doe Run on LG&E's interstate pipeline capacity requirements. The evaluation includes the following major assumptions:

- Design Weather Pattern including a Peak Design Day of -9°F.
- Load Formulas provided by Sales Analysis and Forecasting for the 2021 Supply Plan
- Supply transactions similar to the 2021 Supply Plan portfolio
- Pipeline transportation contracts in the current transportation service portfolio
- On-system storage parameters similar to those provided by Gas Control and Storage for the 2021 Supply Plan except Doe Run storage is not in service

The results of the SENDOUT analysis indicate that up to 30,000 MMBtu/day of additional pipeline capacity is required for the months of the winter season if Doe Run is retired.

A review of the pipeline service options offered by Texas Gas Transmission, LLC ("Texas Gas") and Tennessee Gas Pipeline Company, L.L.C. ("Tennessee") indicates that Texas Gas Rate STF provides the least cost service option, primarily because it allows for a seasonal contract demand instead of an annual contract demand. The annual Demand Charges associated with the required capacity at current FERC-approved tariff rates is $1,926,156.

5.3 Reliability Considerations

On a January peak day up to 46% of firm sales customers' gas supply is met from LG&E's gas storage system. When in service, Doe Run provides up to 9% of total firm sales customers gas supply

requirements on a peak winter day. The pipe, fittings and valves located with-in Doe Run date back to the 1950's. There are approximately 47 miles of pipeline facilities within Doe Run. Of the 47 miles, material specifications, construction records, and testing records for 30.8 miles are either unknown or incomplete.

When in service, integrity of the Doe Run field facilities is critical to maintaining reliable gas supply for LG&E customers. Doe Run contains hydrogen sulfide (H_2S) and moisture resulting in a potential corrosive environment. Since 2014, 4 pipeline failures have occurred on Doe Run facilities that met the reportable thresholds defined within CFR 49 191.3. All of these failures resulted from internal corrosion, which highlights the operational risk associated with pipe that has been subject to the corrosive constituents found in the wet gas system. If left in service a piping failure could result in the inability to withdraw the needed storage field gas, which would result in the inability to provide adequate gas supplies from gas storage to the gas distribution system during critical operating periods.

Configuration of the majority of existing storage field piping does not allow maintenance cleaning or integrity inspections using in-line tools. Significant investments would be required in the Doe Run Storage piping to enable maintenance pigging and the use of modern in-line inspection tools which would allow the Company to remove corrosive constituents and assess the integrity of the pipeline. LG&E would be required to increase annual capital expenditures for Doe Run to over $5.5 million beginning in 2026 for a period of 15 years to replace all legacy pipeline and wellheads. These increased capital expenditure requirements significantly affect the economics of continuing to operate the storage field

6 Seasonal Natural Gas Price Differential

In addition to reliable delivery service during the winter season, Doe Run provides potential gas cost savings to customers. As with LG&E's other storage fields, Doe Run allows LG&E to make generally lower priced gas purchases during the summer season for delivery to customers during the winter season. However, forecasted seasonal price differences have narrowed in recent years due primarily to increases in gas power generation and domestic LNG exports which have increased the demand for natural gas year-round. The seasonal price differential savings provided by Doe Run for the last five-years is estimated at $1,284,670.[3]

7 Conclusion

Based on the economic analysis performed by LG&E, it is recommended that LG&E should retire the Doe Run Storage Field.

[3] This estimate may be conservative given the fifth year of data includes historically low U.S. summer demand and prices for 2020 due to the pandemic's impact on the U.S. economy compared to higher winter prices as the result of Storm Uri in February 2021.

8 Appendix A – 2021 NITEC Inventory Analysis

Appendix A is Confidential and provided separately under seal.

9 Appendix B – CEM Model Results

Capital Evaluation Model (CEM)

The CEM is used to create a financial analysis of capital projects.
The CEM is required on projects $1,000,000 or greater,
per the Capital and Investment Review Policy.
To use this file, please insert your data on this tab,
following the directions in the blue header of each section.

The inputs will feed to the "Outputs" tabs,
which are summarized on the "Summary" tab for you.

This spreadsheet is owned and maintained
by the Financial Planning & Analysis Department.
For help, questions, comments, suggestions, etc., please contact:
Clark Elliot (502) 627-3718

Input data in all cells that have a green background.

Project name	Doe Run Storage Field Closure Analysis
Project number	44/1000000
Key contact	Jon Miller or Mike Cummins

	Recomm.	Alt #1	Alt #2	Alt #3
First year of spending*	2022	2022	2022	
In service year*	2024	2022	2022	
Salvage value (only if applicable), +$000s				

Use the drop-down boxes to fill in all cells that have an orange background.

Commonwealth	Utah
Generating asset	None
Line of business	Gas Operations
Depreciation category	Underground Gas Storage
ECR/GLT/DSM/Other project	

*Note: In alternatives with no capital spend, the "First year of spending" and "In service year" inputs should both be set to equal the first year with Revenue/(Incurred Costs).

Input data for up to 4 options in the sections below and re-name each title as appropriate. Input data in cells that have a green background. Do not cut and paste (copy and paste only, if needed).

Close Doe Run Field	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
Capital Investment, $000s	945	2,869	3,078	1,040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Depreciable Investment (e.g., Land), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Investment, $000s	945	2,869	3,078	1,040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Rate Improvement (Disimprovement), Btu/kWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Value per Btu/kWh Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Heat Rate Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Availability Improvement/(Disimprovement), in weeks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Probability %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Value of a One Week Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Availability Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue/(Incurred Costs), $000s																																											
OPEX	(4,288)	(4,996)	(4,099)	(3,944)	(3,461)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)
Total Revenue/(Incurred Costs), $000s	(4,288)	(4,996)	(4,099)	(3,944)	(3,461)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)	(3,441)

Doe Run Replace Capital	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
Capital Investment, $000s	1,426	1,365	1,406	1,448	5,507	5,673	5,843	6,018	6,199	6,385	6,576	6,773	7,584	7,738	7,898	8,063	8,234	8,411	8,595	2,528	2,536	2,546	2,556	2,568	2,581	2,596	2,611	2,628	2,646	2,665	2,686	2,708	2,731	2,756	2,782	2,810	2,839	2,870	2,902	2,936			
Non-Depreciable Investment (e.g., Land), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Investment, $000s	1,426	1,365	1,406	1,448	5,507	5,673	5,843	6,018	6,199	6,385	6,576	6,773	7,584	7,738	7,898	8,063	8,234	8,411	8,595	2,528	2,536	2,546	2,556	2,568	2,581	2,596	2,611	2,628	2,646	2,665	2,686	2,708	2,731	2,756	2,782	2,810	2,839	2,870	2,902	2,936	-	-	-
Heat Rate Improvement (Disimprovement), Btu/kWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Value per Btu/kWh Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Heat Rate Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Availability Improvement/(Disimprovement), in weeks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Probability %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Value of a One Week Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Availability Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue/(Incurred Costs), $000s																																											
OPEX	(3,186)	(3,286)	(3,310)	(3,351)	(3,529)	(3,560)	(3,660)	(3,817)	(3,969)	(4,085)	(4,178)	(4,305)	(4,434)	(4,541)	(4,638)	(4,729)	(4,809)	(4,915)	(5,006)	(5,099)	(5,195)	(5,278)	(5,363)	(5,469)	(5,588)	(5,722)	(5,874)	(6,056)	(6,256)	(6,447)	(6,603)	(6,763)	(6,928)	(7,097)	(7,270)	(7,449)	(7,632)	(7,820)	(8,013)	(8,211)	(8,415)	(8,624)	(8,839)
Total Revenue/(Incurred Costs), $000s	(3,186)	(3,286)	(3,310)	(3,351)	(3,529)	(3,560)	(3,660)	(3,817)	(3,969)	(4,085)	(4,178)	(4,305)	(4,434)	(4,541)	(4,638)	(4,729)	(4,809)	(4,915)	(5,006)	(5,099)	(5,195)	(5,278)	(5,363)	(5,469)	(5,588)	(5,722)	(5,874)	(6,056)	(6,256)	(6,447)	(6,603)	(6,763)	(6,928)	(7,097)	(7,270)	(7,449)	(7,632)	(7,820)	(8,013)	(8,211)	(8,415)	(8,624)	(8,839)

Doe Run - Maintain Capital	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
Capital Investment, $000s	1,366	1,303	1,304	1,418	1,420	2,954	3,043	3,134	2,095	1,231	1,268	1,306	1,345	1,385	1,427	1,470	1,514	1,559	2,606	1,654	1,704	1,755	1,808	1,862	1,918	1,975	2,034	2,095	3,208	2,223	2,289	2,358	2,429	2,502	2,577	2,654	2,734	2,816	2,900	2,987			
Non-Depreciable Investment (e.g., Land), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Investment, $000s	1,366	1,303	1,304	1,418	1,420	2,954	3,043	3,134	2,095	1,231	1,268	1,306	1,345	1,385	1,427	1,470	1,514	1,559	2,606	1,654	1,704	1,755	1,808	1,862	1,918	1,975	2,034	2,095	3,208	2,223	2,289	2,358	2,429	2,502	2,577	2,654	2,734	2,816	2,900	2,987	-	-	-
Heat Rate Improvement (Disimprovement), Btu/kWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Value per Btu/kWh Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Heat Rate Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Availability Improvement/(Disimprovement), in weeks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Probability %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Value of a One Week Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Availability Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue/(Incurred Costs), $000s																																											
OPEX	(3,186)	(3,286)	(3,310)	(3,351)	(3,529)	(3,560)	(3,660)	(3,817)	(3,969)	(4,085)	(4,178)	(4,305)	(4,434)	(4,541)	(4,638)	(4,729)	(4,809)	(4,915)	(5,006)	(5,099)	(5,195)	(5,278)	(5,363)	(5,469)	(5,588)	(5,722)	(5,874)	(6,056)	(6,256)	(6,447)	(6,603)	(6,763)	(6,928)	(7,097)	(7,270)	(7,449)	(7,632)	(7,820)	(8,013)	(8,211)	(8,415)	(8,624)	(8,839)
Total Revenue/(Incurred Costs), $000s	(3,186)	(3,286)	(3,310)	(3,351)	(3,529)	(3,560)	(3,660)	(3,817)	(3,969)	(4,085)	(4,178)	(4,305)	(4,434)	(4,541)	(4,638)	(4,729)	(4,809)	(4,915)	(5,006)	(5,099)	(5,195)	(5,278)	(5,363)	(5,469)	(5,588)	(5,722)	(5,874)	(6,056)	(6,256)	(6,447)	(6,603)	(6,763)	(6,928)	(7,097)	(7,270)	(7,449)	(7,632)	(7,820)	(8,013)	(8,211)	(8,415)	(8,624)	(8,839)

Alternative #3	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
Capital Investment, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Depreciable Investment (e.g., Land), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Investment, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Rate Improvement (Disimprovement), Btu/kWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Value per Btu/kWh Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Heat Rate Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Availability Improvement/(Disimprovement), in weeks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Probability %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Value of a One Week Improvement, $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Availability Improvement/(Disimprovement), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue/(Incurred Costs), $000s																																											
[Add description for Cost here]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue/(Incurred Costs), $000s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PPL companies

Financial Summary for
Doe Run Storage Field Closure Analysis

Project Number 447000060
Gas Operations: Jon Miller or Mike Cummins
LG&E

Financial Analysis - Project Summary	RECOMMEND-ATION	Doe Run Replace Capital	Doe Run - Maintain Capital	Alternative #3
Total Capital Expenditures Requested, $000s	**$7,932**	$167,621	$81,628	$0
Total Revenue/(Incurred Costs), $000s	**($175,632)**	($307,734)	($307,734)	$0
NPV Revenue Requirements, $000s	**$67,385**	$162,944	$110,097	$0

	RECOMMENDATION						
Financial Analysis - By Year	**5-Year Total 2022-2026**	**2022**	**2023**	**2024**	**2025**	**2026**	**Life 2022-2070**
Capital Expenditures Requested, $000s	$7,932	$945	$2,869	$3,078	$1,040	$0	$7,932
Revenue/(Incurred Costs), $000s	($20,787)	($4,288)	($4,996)	($4,099)	($3,944)	($3,461)	($175,632)

NPVRR general rules:
The NPVRR is the present value of the cost to the customer, so the option with the lowest NPVRR is best. NPVRR can be negative if savings are put into the model, in which case the biggest negative number is best as it represents the most benefit to the customer.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 8

Responding Witness: Mark Satkamp

Q-8. Explain whether LG&E notified impacted parties of the retirement of Doe Run. Also, provide a list of the parties and any agencies notified of the Doe Run retirement.

A-8. LG&E notified the parties impacted by the retirement of Doe Run as set forth in the table below.

Agency / Impacted Parties	Initial Communication Date	Communication Type	LG&E Contact
Kentucky Public Service Commission (KPSC)	6/30/2022	Phone Call	Rick Lovekamp
Indiana Utility Regulatory Commission (IURC)	6/30/2022	Phone Call and Letter	Pete Clyde
Indiana Dept of Natural Resources (IDNR)	6/29/2022	IN Well Plugging Plans	Lewis Barnette
Kentucky Division of Oil and Gas	Ongoing conversations	KY Well Plugging Plans	Lewis Barnette
Indiana Dept of Environmental Management (IDEM)	Ongoing	IN Building demolition permits	Eric Benge
Free Gas Allotment Lessors	9/30/2022	Letter and in-person meetings	Paul Weis
Mineral Right Lessors	11/14/2022	Letter	Paul Weis
All residents within storage field zone (including buffer)	2/10/2023	Letter	Paul Weis

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 9

Responding Witness: Mark Satkamp / Andrea Fackler / Peter Clyde

Q-9. Explain whether LG&E communicated the Doe Run retirement to the Kentucky Public Service Commission outside of a Gas Supply Clause rate report cover letter.

A-9. Yes. On June 30, 2022 LG&E communicated with both the Indiana Utility Regulatory Commission (IURC) and the Kentucky Public Service Commission (KPSC) regarding the retirement of the Doe Run storage facility as it spans area both in Indiana and Kentucky. Specifically related to the KPSC, Rick Lovekamp, Manager, Regulatory Strategy/Policy for LG&E, contacted the Executive Director via a voice mail at approximately 1:10 p.m. on June 30, 2022 which provided information concerning LG&E's planned retirement of Doe Run and asked her to contact the Company if there were any questions. In addition, on October 7, 2022, Peter Clyde, Manager, Gas T&D Integrity & Compliance for LG&E, following up on a telephone conversation with the KPSC Division of Inspections Assistant Director, Melissa Holbrook, sent an email confirming in writing correspondence sent to the IURC of LG&E's plans to close the Doe Run storage field. See attached email to Melissa Holbrook and letter to the IURC which was copied to the KPSC. Finally, as implied in the question, LG&E included disclosure of this information in quarterly GSC filing letters beginning on September 30, 2022.

From: Clyde, Peter
Sent: Friday, October 7, 2022 8:50 AM
To: Holbrook, Melissa C (KPSC)
Subject: Doe Run Storage Field Closure
Attachments: 2022-10-07 IURC Notification - Doe Run Storage Field Retirement.pdf

Melissa,
As we discussed on the phone, LG&E plans to shut down the Doe Run storage field which is in both Indiana and Kentucky. I am copying you on the attached notification to the Indiana Utility Regulatory Commission. Let me know if you have any questions.

Pete Clyde
Manager Gas Transmission & Distribution Integrity & Compliance | Louisville Gas and Electric Company
6900 Enterprise Drive, Louisville, KY 40214
502-364-8715
lge-ku.com

a PPL company

Louisville Gas and Electric Company
Transmission Integrity and Compliance
6900 Enterprise Dr
Louisville, KY 40214
Peter.Clyde@lge-ku.com
(502) 364-8715

October 7, 2022

Michael Neal
Pipeline Safety Division Director
Indiana Utility Regulatory Commission
101 West Washington St, Suite 1500 E.
Indianapolis, IN 46204-3407

RE: Retirement of Doe Run Storage Field

Mr. Neal:

Louisville Gas and Electric Company (LG&E) operates Doe Run natural gas storage field in Meade County, Kentucky and Harrison County, Indiana. We are reaching out to inform you of plans for LG&E to close the Doe Run Storage Field by December 2024.

The closure project will begin in 2022 and continue through 2024. The project will include reducing the volume of natural gas in the field (scheduled completion by June 2023), retiring associated pipelines (scheduled completion by August 2023), and plugging 106 wells (scheduled completion by December 2024). As such, LG&E anticipates it will have no natural gas pipe in the state of Indiana meeting the definition of a transmission line or distribution line contained in 49 CFR Part 192.3 by August 2023.

This closure plan will be completed per all LG&E procedures and relevant state and federal regulations. More detailed information on the project can be found at **lge-ku.com/doe-run-field-closure**. If you have questions, please contact me by phone at (502) 364-8715.

Sincerely,

Peter Clyde
Manager Gas Transmission & Distribution Integrity & Compliance

Cc: Melissa Holbrook, Assistant Director Division of Inspections, Kentucky Public Service Commission

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's First Request for Information
Dated April 28, 2023

Case No. 2023-00089

Question No. 10

Responding Witness: Mark Satkamp

Q-10. Explain the safety procedures in place for the retirement of Doe Run.

A-10. Safety is LG&E's top priority. Employees and contractors are trained on various safety procedures to ensure the integrity and safety of our storage field operations. Prior to closure of the Doe Run field all working gas was removed as part of storage field natural gas withdrawal operations. Gas well plugging and abandonment procedures are completed in accordance with applicable regulations. Well plugging and abandonment plans are submitted in advance to applicable regulatory agencies. Various steps associated with well plugging and abandonment operations include: preparing the well site to ensure the well is safe to work around, removing and salvaging wellhead equipment, placing cement plugs in the well, filling the well completely with cement from total depth to surface, cutting the upper well casing below ground, permanently capping the well and restoring the land where the well site was located to match the existing landscape. A final report is submitted to applicable regulatory agencies to certify the well has been plugged in accordance with regulatory requirements. LG&E follows Federal and State guidelines for formal abandonment of natural gas pipelines including the disconnection, purging and sealing of such facilities left in place.

To safely plug and abandon the gas storage wells in the Doe Run Storage field, LG&E is complying with or exceeding the Indiana Natural Resources Division of Oil and Gas Regulations 312 IAC 29-33 and IC 14-37 and the Kentucky Division of Oil and Gas Regulations KAR 1:060.

For Indiana wells, these rules require an operator to submit a plugging plan to the IN Division of Oil and Gas for approval, to provide adequate notification of when the plugging operations will occur to allow for a State plugging representative to be on site during plugging operations, and to submit a final plugging report to the IN Division of Oil and Gas. After the plugging procedure is completed, LG&E performs the final cutting and capping of the well in accordance with 312 IAC 29-33-24.

For Kentucky wells, these rules require an operator to provide adequate notification of when the plugging operations will occur and to submit a final plugging affidavit to the Kentucky Division of Oil and Gas. After the plugging procedure is completed, LG&E performs the final cutting and capping of the well in accordance with KAR 1:060.