MEMORANDUM

TO: Missouri Public Service Commission Official Case File
Case No. GR-2023-0129, The Empire District Gas Company

FROM: Kwang Y. Choe, PhD, Economics Analyst – Procurement Analysis
Jacob R. Robinett, Associate Engineer – Procurement Analysis
Lisa Schlup, Lead Sr. Utility Regulatory Auditor – Procurement Analysis

/s/ David M. Sommerer 12/08/23	*/s/ David T. Buttig, PE* 12/08/23
Project Coordinator / Date	Senior Professional Engineer/ Date

SUBJECT: Staff Recommendation in Case No. GR-2023-0129,
The Empire District Gas Company 2021-2022 Actual Cost Adjustment Filing

DATE: December 08, 2023

EXECUTIVE SUMMARY

On November 4, 2022, The Empire District Gas Company ("Empire" or "Company") filed its Actual Cost Adjustment (ACA) for the 2021-2022 annual period for rates to become effective December 1, 2022. This filing revised the ACA rates based upon the Company's calculations of the ACA balances for the 2021-2022 period.

The Procurement Analysis Department ("Staff") of the Missouri Public Service Commission reviewed the Company's ACA filing. Staff's analysis consisted of:

1. A review and evaluation of the Company's billed revenues and its natural gas costs for the period of September 1, 2021 to August 31, 2022;

2. A reliability analysis of the Company's estimated peak day requirements and the capacity levels to meet those requirements;

3. An examination of the Company's gas purchasing practices to determine the prudence of the Company's purchasing decisions; and

4. A hedging review to evaluate the reasonableness of the Company's hedging practices for this ACA period.

Based on Staff's review, adjustments to the Company's filed ACA balances have been recommended to reflect the actual billed revenues and natural gas costs for the period under review. Please see the Recommendations section for Staff's recommendations.

STAFF'S TECHNICAL DISCUSSION AND ANALYSIS

Staff's discussion of its findings is organized into the following six sections:

I. OVERVIEW

Service Area

Empire's natural gas operations are grouped into three geographic service areas: South, North, and Northwest. A more detailed description, with the associated interstate pipelines serving these service areas follows:

The South Service Area includes the communities of Sedalia, Marshall, Nevada, Clinton, Higginsville, Lexington, and Richmond and is served by the Southern Star Central Gas Pipeline (SSCGP). The South Service Area served an average of 28,275 sales customers during this ACA period.

The North Service Area includes the communities of Chillicothe, Brookfield, Marceline, and Trenton and is served by Panhandle Eastern Pipe Line Company (PEPL). The North Service Area served an average of 9,337 sales customers during this ACA period.

The Northwest Service Area serves communities in Andrew, Atchison, Holt, and Nodaway counties, including the city of Maryville. ANR Pipeline Company (ANR) serves customers in the Northwest Service Area. The Northwest Service Area served an average of 5,637 sales customers during this ACA period.

The total sales customer count for all service areas is an average of 43,249. There were no interruptible sales customers during this ACA period.

II. BILLED REVENUE AND ACTUAL GAS COSTS

ACA Balances

ACA balances are cumulative such that the ending balance of one period becomes the beginning balance of the next period. The beginning ACA balance reported for each service area did not include adjustments ordered in GR-2022-0127 (2020-2021 ACA period). The beginning ACA balance was adjusted to reflect the ACA balance ordered in Case No. GR-2022-0127 as noted below.

Reconciliation of Staff Adjustments 2020-2021 ACA Period			
System	Reported	Corrected	Adjustment
South	$ 23,845,513.86	$ 24,026,153.59	$ 180,639.73
North	$ 3,550,661.81	$ 3,357,547.78	$ (193,114.03)
Northwest	$ 2,184,527.01	$ 2,184,520.30	$ (6.71)

Billed Revenues

For each service area, Staff reviewed a sample of customer bills to ensure the PGA/ACA rates charged for natural gas reflected Commission approved PGA/ACA rates. All rates charged to natural gas consumers agreed with approved rates, without exception. In addition, Staff recalculated monthly billed revenue, applying approved rates to volumes of natural gas consumed with any differences noted attributable to adjustments made to correct for meter issues. Further, Staff tested the reasonableness of total revenues reported by comparing the total natural gas volumes billed to the sum of natural gas volumes purchased plus/minus changes in inventory and lost and unaccounted natural gas summaries. Based on testing, no differences were discovered.

Natural Gas Costs

Empire submitted invoices for all natural gas purchases made during the review period. Staff reconciled each invoice to Empire's ACA filing, referred to as Schedule/Enclosure 4-5, Tracker worksheets. Staff reconciled and recalculated storage balances, injections/withdrawals, and weighted average cost of goods (WACOG) to supporting documentation on a test basis. Staff also verified natural gas pricing to gas supply contracts or other referenced rate sources (First of Month (FOM), pipeline tariff, etc.) on a test basis. Based on testing, no difference were discovered.

Imbalances/Cash-outs

On a test basis, Staff recalculated and reconciled transportation customer imbalances to the cash-out totals included in the ACA filing. Testing concluded that one customers account was incorrectly included in the South Service Area and should have been included in the North Service Area requiring reclassification between the two service areas (see table below). Staff noted that this was a carry forward from GR-2022-0127. Staff also noted the company corrected the reclassification in March of 2022.

Transportation Revenues			
System	Reported	Corrected	Adjustment
South	$ 20,089,659.27	$ 20,166,765.21	$ (77,105.94)
North	$ 5,433,550.58	$ 5,356,444.64	$ 77,105.94

Carrying (Interest) Costs

On September 16, 2021, Empire submitted revised tariff sheets designed to narrowly amend the Company's PGA rider to allow under recoveries, with Commission approval, for an extended period not to exceed five years (Commission Case No. GT-2022-0080, Tracking No. JG-2022-0059) effective October 22, 2021. Further, the revised tariff allows Empire to propose a carrying cost, subject to review, appropriate for the length of the extended period. Empire has proposed a carrying cost of 8.0%, which is equal to the Company's Weighted Average Cost of Capital (WACC).

Pursuant to Empire's PGA Clause, traditionally, interest is computed based upon the average of the accumulated beginning and ending monthly over/under recoveries at an interest rate of prime less 2%. Staff does not agree that WACC is an appropriate rate to be applied to Winter Storm Uri under recoveries and has recalculated carrying cost for the total net under recovered balance using the traditional standard rate of prime rate less 2%. The impact to carrying costs included in the ending ACA balance are summarized in the table below.

Carrying Costs			
System	Reported	Corrected	Adjustment
South	$ 1,669,808.21	$ 418,719.51	$ (1,251,088.70)
North	$ 217,722.08	$ 53,971.57	$ (163,750.51)
Northwest	$ 129,533.04	$ 36,704.71	$ (92,828.33)

III. RELIABILITY ANALYSIS AND GAS SUPPLY PLANNING

As a gas corporation providing natural gas service to Missouri customers, the Company is responsible for conducting reasonable long-range supply planning and implementing the decisions resulting from that planning. One purpose of the ACA process is to examine the reliability of the Local Distribution Company's (LDC) gas supply, transportation, and storage capabilities. For this analysis, Staff reviewed the LDC's plans and decisions regarding estimated peak day requirements and the capacity levels to meet those requirements, peak day reserve margin and the rationale for this reserve margin, and natural gas supply plans for various weather conditions.

Staff's review for Empire's service areas produced the following comments and concerns:

Reserve Margins

When reviewing the reserve margins for Empire, staff compared the contracted capacity to the Upper 95% Confidence Interval peak day for each service area. Reserve margin is calculated by subtracting the supply demand from the contracted supply capacity, and then dividing that value by the supply demand. The reserve margin for the North service area is at ** [redacted] **, and the reserve margin is at ** [redacted] ** for the South service area when considering the Upper 95% Confidence Interval. The reserve margin is at ** [redacted] ** for Northwest service area when considering the Upper 95% Confidence Interval, however this high reserve margin is not concerning to Staff. The contract for the Northwest service is a commodity only contract, so Empire is not paying reservation fees on excess capacity.

Contracts with reservation fees associated with the contract capacity can have a significant financial impact, therefore, large reserve margins can be concerning. However the contract supplying the Northwest service area is a commodity only contract, so Empire is paying for the amount of natural gas used. Since there are no reservation fees being paid by Empire for the amount of capacity being reserved, the higher reserve margin for the Northwest service area is not of a concern. Staff encourages the Company to continue to monitor its pipeline contracts and maintain an appropriate reserve margin for each service area.

IV. HEDGING

Empire has individual gas supply portfolios for each of its three service areas. Staff's comments are provided for each.

Empire's overall hedging planned target was ** [redacted] ** of normal winter requirements, while actual overall coverage was ** [redacted] ** based on the 2021-2022 normal winter volumes.

For the South Service Area, Empire hedged about ** [redacted] ** of the normal winter requirements through a combination of ** [redacted] **[1] Staff notes that storage not only provides a price hedge but is also a critical tool to meet winter demand.

For the North and Northwest Service Areas, Empire ** [redacted]. ** For the North Service Area, Empire hedged ** [redacted] ** of the normal winter requirements by using storage, while about ** [redacted] ** of the Northwest Service Area's normal winter requirements came from storage.

Staff reviews the prudence of a company's decision-making based on what the company knew, or reasonably could have known, at the time it made its hedging decisions. The company's hedging planning should be flexible enough to incorporate changing market circumstances. Empire should continue to evaluate its hedging strategy in response to changing market dynamics as to how much the existing hedging strategy actually benefits its customers, while balancing market price risk. For example, Empire should evaluate more cost-effective financial instruments when the market prices become relatively less volatile. Please see the example of out-of-the-money call options discussed below.

Recently, Empire started incorporating call options in its hedging program to supplement the use of swap instruments. Financial swaps are a type of financial instrument that allow the conversion of a floating or variable gas price arrangement into a fixed price arrangement. Since many of Empire's supply contracts are tied to a floating or variable index price, a swap allows Empire to set a known price for a particular quantity of gas. Call options put a ceiling on prices while allowing participation in downward price movements, albeit at a cost premium for the option. For example, out-of-the-money calls may have a strike price that still affords significant protection near current market prices but at a reduced premium cost. Empire should continue to evaluate the appropriate volumes associated with various hedging instruments going forward.

V. RECOMMENDATIONS

Staff recommends that the Commission issue an order requiring Empire to:

1. Adjust the balances in its 2021-2022 ACA filing to reflect the ending (over)/under recovery balances for the ACA, Take-or-Pay, and Transition Cost per the following table:

---

[1] ** [redacted] **

Description + Under-recovery (-) Over-recovery	8-31-22 Ending Balances Per Filing	Staff Adjustments For 2021-2022 ACA	8-31-22 Staff Recommended Ending Balances
South System: Firm ACA	$21,820,622.99	$(1,147,554.91)	$20,673,068.08
Interruptible ACA	$0	$0	$0
Take-or-Pay (TOP)	$0	$0	$0
Transition Cost (TC)	$0	$0	$0
North System: Firm ACA	$3,060,973.76	$(279,758.60)	$2,781,215.16
Interruptible ACA	$0	$0	$0
Take-or-Pay (TOP)	$0	$0	$0
Transition Cost (TC)	$0	$0	$0
Northwest System: Firm ACA	$2,254,060.89	$(92,835.04)	$2,161,225.85
Interruptible ACA	$0	$0	$0
Take-or-Pay (TOP)	$0	$0	$0
Transition Cost (TC)	$0	$0	$0

A positive ACA balance indicates an under-collection that must be recovered from customers. A negative ACA balance indicates an over-recovery that must be returned to customers.

Adjustment Summary - South		
Adjustment Description		**Adjustment**
Prior Year Commission Ordered Adjustment	$	180,639.76
Reclassified Revenues	$	(77,105.94)
Carrying Cost	$	(1,251,088.70)
Increase (Decrease) to Firm Sales ACA Ending Balance	$	(1,147,554.88)

Adjustment Summary - North		
Adjustment Description		**Adjustment**
Prior Year Commission Ordered Adjustment	$	(193,114.03)
Reclassified Revenues	$	77,105.94
Carrying Cost	$	(163,750.51)
Increase (Decrease) to Firm Sales ACA Ending Balance	$	(279,758.60)

Adjustment Summary - Northwest		
Adjustment Description		**Adjustment**
Prior Year Commission Ordered Adjustment	$	(6.71)
Carrying Cost	$	(92,828.33)
Increase (Decrease) to Firm Sales ACA Ending Balance	$	(92,835.04)

Please see Section II. Billed Revenues and Actual Gas Costs for detailed discussion of the recommended adjustments.

2. Respond to all concerns, comments, and recommendations summarized below within 30 days:

   A. Staff encourages Empire to continue to monitor its pipeline contracts and maintain an appropriate reserve margin for each service area. (Section III. Reliability Analysis and Gas Supply Planning)

   B. Staff recommends Empire continue to evaluate its hedging strategy in response to changing market dynamics as to how much the existing hedging strategy actually benefits its customers, while balancing market price risk. (Section IV. Hedging)

   C. Staff recommends Empire evaluate more cost-effective financial instruments and the appropriate volumes associated with them when the market prices become relatively less volatile. (Section IV. Hedging)

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of The Empire District Gas Company d/b/a Liberty's Purchased Gas Adjustment Tariff Filing	)))	Case No. GR-2023-0129

AFFIDAVIT OF KWANG Y. CHOE, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW KWANG Y. CHOE, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation, in Memorandum form*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

Kwang Y. Choe

KWANG Y. CHOE, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 6th day of December 2023.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of The Empire District Gas Company d/b/a Liberty's Purchased Gas Adjustment Tariff Filing	)))	Case No. GR-2023-0129

AFFIDAVIT OF JACOB R. ROBINETT

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JACOB R. ROBINETT and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation, in Memorandum form*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

Jacob R. Robinett
JACOB R. ROBINETT

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 6th day of December 2023.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of The Empire District Gas Company d/b/a Liberty's Purchased Gas Adjustment Tariff Filing	)))	Case No. GR-2023-0129

AFFIDAVIT OF LISA SCHLUP

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW LISA SCHLUP and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Recommendation, in Memorandum form*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Lisa Schlup
LISA SCHLUP

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 7th day of December 2023.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public