

## MEMORANDUM

**TO:** Missouri Public Service Commission Official Case File  
Case No. GR-2018-0122, The Empire District Gas Company

**FROM:** Catherine F. Lucia, Regulatory Auditor IV – Procurement Analysis  
Kwang Y. Choe, PhD, Regulatory Economist – Procurement Analysis  
Jacob R. Robinett, Utility Engineering Specialist III – Procurement Analysis

/s/ David M. Sommerer 12/17/18      /s/ Jeffrey A. Keevil 12/17/18  
Project Coordinator / Date                      Staff Counsel’s Office / Date

/s/ Keenan B. Patterson, PE 12/17/18  
Utility Regulatory Engineer II/ Date

**SUBJECT:** Staff Recommendation in Case No. GR-2018-0122,  
The Empire District Gas Company 2016-2017 Actual Cost Adjustment Filing

**DATE:** December 17, 2018

### EXECUTIVE SUMMARY

On November 3, 2017, The Empire District Gas Company (“Empire” or “Company”) filed its Actual Cost Adjustment (ACA) for the 2016-2017 annual period for rates to become effective November 16, 2017. This filing revised the ACA rates based upon the Company’s calculations of the ACA balance for the 2016-2017 period. The Commission authorized a merger transaction of The Empire District Electric Company in Case No. EM-2016-0213 on September 7, 2016.

The Procurement Analysis Department (“Staff”) of the Missouri Public Service Commission has reviewed the Company’s ACA filing. A comparison of billed revenue recovery with actual gas costs will yield either an over-recovery or under-recovery of the ACA balance. An over-recovery, represented by a negative ACA balance, must be returned to the Company’s customers; an under-recovery, represented by a positive ACA balance, must be recovered from customers.

Staff conducted the following analyses:

- a review of billed revenue compared with actual gas costs
- a reliability analysis including a review of estimated peak day requirements and the capacity levels needed to meet these requirements
- a review of the Company’s gas purchasing practices to evaluate the prudence of the Company’s purchasing decisions for this ACA period

- a hedging review to evaluate the reasonableness of the Company's hedging practices for this ACA period

Based on its review, Staff recommends the following adjustments to the Company's filed ACA balances:

Description + Under-recovery (-) Over-recovery	8-31-17 Ending Balances Per Filing	Commission Approved Adjustments 2014-2015 ACA (A)	Staff Adjustments For 2015-2016 ACA (A-1)	Staff Adjustments For 2016-2017 ACA	8-31-17 Staff Recommended Ending Balances
<b>South System: Firm ACA</b>	<b>\$1,026,714</b>	<b>B \$4,118 C \$11,308 D \$ (3,425)</b>	<b>\$0</b>	<b>\$1,594</b>	<b>\$1,040,309</b>
<b>Interruptible ACA</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Take-or-Pay (TOP)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Transition Cost (TC)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Refund</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>North System: Firm ACA</b>	<b>\$726,843</b>	<b>A \$ (13,595) C \$ (1,140) D \$1,653</b>	<b>E \$ (11,112)</b>	<b>\$ (513)</b>	<b>\$702,136</b>
<b>Interruptible ACA</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
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<b>Refund</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Northwest System: Firm ACA</b>	<b>\$ (275,529)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$ (275,529)</b>
<b>Interruptible ACA</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
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(A) Commission Order issued February 16, 2017 in Case No. GR-2016-0099 approving adjusted amounts from 2014-2015 ACA. Empire has not included these adjustments in its 2015-2016 ACA nor in its 2016-2017 ACA filing.

- A End user Adjustment
- B "Spot" Market Price Adjustment
- C Cheyenne Plains Pipeline Reservation Charges Re-Allocation
- D Demand Charge Allocation

(A-1) Commission Order issued February 15, 2018 in Case No. GR-2017-0134 approving adjusted amounts from 2015-2016 ACA. Due to the timing of Commission's order, Empire has not included these adjustments in its 2016-2017 ACA.

- E Restates North System 8-31-15 Firm ACA balance to \$323,977 under-recovery as approved in Case No. GR-2016-0099. The Company had filed \$335,089 under-recovery requiring the \$11,112 Staff adjustment.

The individual adjustments recommended by Staff are discussed in greater detail in the sections below. Additionally, Staff makes recommendations which are discussed in the Reliability Analysis and Gas Supply Planning section, and the Hedging section of the memorandum.

### **STAFF’S TECHNICAL DISCUSSION AND ANALYSIS**

Staff’s discussion of its findings is organized into the following five sections:

<b>Section No.</b>	<b>Topic</b>	<b>Page</b>
I	Overview	3
II	Billed Revenue and Actual Gas Costs	4
III	Reliability Analysis and Gas Supply Planning	4
IV	Hedging	5
V	Recommendations	7

Each section explains Staff’s concerns and recommendations.

#### **I. OVERVIEW**

Empire separates its gas operations into a South System, a North System, and a Northwest (NW) System.

The larger communities served on the South System include Sedalia, Marshall, Nevada, Clinton, Higginsville, Lexington, and Richmond in southwest and central Missouri and Platte City near Kansas City.

On the North System, the larger communities include Chillicothe, Brookfield, Marceline and Trenton in north-central Missouri.

The largest community on the NW System is Maryville, in northwestern Missouri.

Southern Star Central Gas Pipeline (SSCGP) serves customers on the South System. Panhandle Eastern Pipe Line Company (“PEPL”) serves customers on the North System while ANR Pipeline Company (ANR) serves customers on the NW System.

During this ACA period there was an average of 28,290 firm sales customers on the South System, 9,238 on the North System, and 5,547 on the NW System. There were no interruptible sales customers during this ACA period.

## **II. BILLED REVENUE AND ACTUAL GAS COSTS**

### **Gas Procurement Practices**

Staff reviewed Summit's purchasing practices during this period and recommends no adjustments based upon that review.

However, one series of adjustments is necessary due to the Commission's February 16, 2017 Order approving ACA balances in Case No. GR-2016-0099 (2014-2015 ACA). In the 2016-2017 filing, the Company posted a \$1,594 decrease to gas cost related to its South System to incorporate Commission-approved adjustments in Case No. GR-2016-0099. The actual ordered adjustments for the South System related to Case No. GR-2016-0099 were an increase to gas costs of \$12,001. Also, for the Company's North System, the Company posted an increase to gas cost of \$513 related to Commission-approved adjustments from Case No. GR-2016-0099. The actual ordered adjustments for the North System were a decrease to gas costs of \$13,082. In addition, since the Company's ACA filing in this case (GR-2018-0122) was made in November 2017, the Company did not incorporate an approved adjustment from the 2015-2016 ACA (Case No. GR-2017-0134) case into the filing made in November 2017. The Commission-approved adjustment for Case No. GR-2017-0134 was a decrease to the North System's gas cost of \$11,112 and has been incorporated into the table below.

## **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 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 reviews the LDCs 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:

### **Storage Planning**

The Company's storage plans do not allow for the flexibility of warmer weather in the fall. For example, the storage plans provided in Data Request No. 0085 for the North, Northwest,

and South service areas (served by PEPL, ANR, and SSCGP respectively) estimate storage to be at 95% at the end of October. Staff is concerned that if warmer weather is experienced in November that the Company may not have the flexibility it needs to put any excess gas into storage due to warmer weather. Staff recommends the Company review its ending October planned balances to accommodate a possible warmer fall or winter.

### **Reserve Margins**

The reserve margin for the Empire North service area is 31%, and for the South service area is 35%. These reserve margins were of concern to Staff, however, it was determined after consulting with the Company that the contracts are set to expire on November 1, 2018 for the North and South service area. The Company is planning to reduce the transportation volumes of the service areas. The Empire Northwest service area has a reserve margin of 80%, however the contract for this service area is a commodity only contract and therefore not impacted by a higher reserve margin. 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 hedging planned target was at 70% - 90% of normal winter requirements while actual overall coverage was 72% based on the 2016/2017 normal winter volumes.

For the South System, Empire hedged about 59% of the normal winter requirements through a combination of storage (38%), and financial instruments (21%). Empire purchased the financial instruments between September 2015 and October 2016.<sup>1</sup>

For the North and NW Systems, Empire depended on storage for its hedging strategies. For the North System, Empire hedged all of the normal winter requirements by using storage, while about 83% of the NW System's normal winter requirements came from storage.

The 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

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<sup>1</sup> Empire's financial instruments include financial swaps and call options.

circumstances. The Company 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, the Company should evaluate more cost-effective financial instruments under the current market where the market prices have become relatively less volatile.

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. The Company should continue to evaluate the appropriate volumes associated with various hedging instruments going forward.

Finally, the Staff recommends the Company continue to assess and document the effectiveness of its hedges for the 2017-2018 ACA period and beyond. The analysis should include identifying the benefits/costs based on the outcomes from the hedging strategy; and evaluating any potential improvements on the future hedging plan and its implementation. For example, the Company should provide a summary of how the Company's financial hedges have performed against market pricing. This would be useful for understanding the impact of purchases without the hedges. This hedge performance or mark-to-market summary conducted over an extensive historical period is helpful in seeing the long term financial impact of the hedge program. Because of the need to better understand the impact of the hedging program, the Staff recommends that Empire develop this summary in future ACA periods.

## V. RECOMMENDATIONS

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

1. Adjust the balances in its 2016-2017 ACA filing to reflect the ending (over)/under recovery balances for the ACA, TOP, TC, and Refund accounts per the following table:

Description + Under-recovery (-) Over-recovery	8-31-17 Ending Balances Per Filing	Commission Approved Adjustments prior to 2015-2016 ACA (A)	Staff Adjustments For 2015-2016 ACA (A-1)	Staff Adjustments For 2016-2017 ACA	8-31-17 Staff Recommended Ending Balances
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- E Restates North System 8-31-15 Firm ACA balance to \$323,977 under-recovery as approved in Case No. GR-2016-0099. The Company had filed \$335,089 under-recovery requiring the \$11,112 Staff adjustment.

2. Respond to Staff's recommendations in the Billed Revenue and Actual Gas Costs section.
3. Respond to Staff's recommendations in the Hedging section.
4. Respond to Staff's recommendations in the Reliability Analysis and Gas Supply Planning section.
5. Respond to recommendations included herein within 45 days.



**BEFORE THE PUBLIC SERVICE COMMISSION**  
**OF THE STATE OF MISSOURI**

In the Matter of The Empire District Gas    )  
Company's Purchased Gas Adjustment    )     Case No. GR-2018-0122  
Tariff Filing.                                )

**AFFIDAVIT OF CATHERINE F. LUCIA**

STATE OF MISSOURI    )  
                                  )     ss.  
COUNTY OF COLE     )

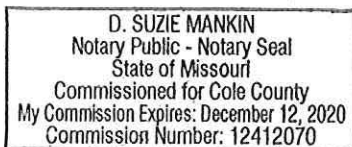
COMES NOW CATHERINE F. LUCIA and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

  
\_\_\_\_\_  
CATHERINE F. LUCIA

**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 13<sup>th</sup> day of December, 2018.



  
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Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of The Empire District Gas )  
Company's Purchased Gas Adjustment ) Case No. GR-2018-0122  
Tariff Filing. )

**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.

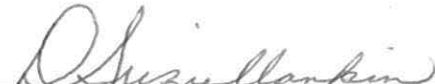


\_\_\_\_\_  
KWANG Y. CHOE, PhD

**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 13<sup>th</sup> day of December, 2018.

D. SUZIE MANKIN  
Notary Public - Notary Seal  
State of Missouri  
Commissioned for Cole County  
My Commission Expires: December 12, 2020  
Commission Number: 12412070

  
\_\_\_\_\_  
Notary Public

**BEFORE THE PUBLIC SERVICE COMMISSION**

**OF THE STATE OF MISSOURI**

In the Matter of The Empire District Gas )  
Company's Purchased Gas Adjustment ) Case No. GR-2018-0122  
Tariff Filing. )

**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

**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 13<sup>th</sup> day of December, 2018.

D. SUZIE MANKIN  
Notary Public - Notary Seal  
State of Missouri  
Commissioned for Cole County  
My Commission Expires: December 12, 2020  
Commission Number: 12412070

  
\_\_\_\_\_  
Notary Public