MEMORANDUM

TO: Missouri Public Service Commission Official Case File
File No. GR-2011-0108, The Empire District Gas Company

FROM: David M. Sommerer, Manager – Procurement Analysis
Phil Lock, Regulatory Auditor – Procurement Analysis
Kwang Choe, Ph.D., Regulatory Economist – Procurement Analysis
Derick Miles, P.E., Regulatory Engineer – Procurement Analysis
Lesa Jenkins, P.E., Regulatory Engineer – Procurement Analysis

/s/ David M. Sommerer 12/30/11 — Project Coordinator / Date

/s/ Bob Berlin 12/30/11 — Staff Counsel's Office / Date

SUBJECT: Staff Recommendation in File No. GR-2011-0108, The Empire District Gas Company, 2009-2010 Actual Cost Adjustment Filing

DATE: December 30, 2011

EXECUTIVE SUMMARY

On November 2, 2010, The Empire District Gas Company (Empire or Company) filed its Actual Cost Adjustment (ACA) for the 2009-2010 period. This filing revises the ACA rates based upon the Company's calculations of the ACA balance.

The Procurement Analysis Unit (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.

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

** **Denotes Highly Confidential Information** **

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

Description	South	North	NW	Total
** ____ **-Aug 2010	($1,207)	$811	$396	$0
** ____ **-Mar 2010	$6,157	($7,472)	$1,315	$0
** ______ **	$6,200	$6,200	$6,200	$18,600
Total	$11,150	($461)	$7,911	$18,600

Staff has no adjustments related to reliability analysis and gas supply planning, however Staff's concerns regarding this area are discussed within the Reliability Analysis and Gas Supply Planning section of the memorandum. Staff recommends the Commission order the Company to respond to these concerns within 30 days.

Staff has no adjustments related to hedging in the HEDGING section of the memorandum; however Staff's concerns/comments are addressed. Staff recommends the Commission order the Company to respond to Staff's concerns/recommendations within 30 days.

STAFF'S TECHNICAL DISCUSSION AND ANALYSIS

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

I. Overview
II. Billed Revenue and Actual Gas Costs
III. Reliability Analysis and Gas Supply Planning
IV. Hedging
V. Recommendations

Each section explains Staff's concerns and recommendations.

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I. OVERVIEW

Empire separates its gas operations into a Southern System, a Northern System, and a Northwest System (NW) (formerly L&P). The larger communities served on the Southern System include Sedalia, Marshall, Higginsville, Lexington and Richmond in west-central Missouri and Platte City near Kansas City. On the Northern System, the larger communities include Chillicothe, Marceline and Trenton in north-central Missouri. The Northwest System includes Maryville, which is located in the northwestern part of the state. Southern Star Central Gas Pipeline (SSCGP) serves customers on the Southern System. Panhandle Eastern Pipeline Company (PEPL) serves customers on the Northern System while ANR Pipeline (ANR) serves customers on the Northwest System. In addition, Cheyenne Plains Gas Pipeline Company (CPGP) delivers gas, from Cheyenne Hub just south of Cheyenne, Wyoming to Greensburg, Kansas, to all of the interstate pipelines systems (SSCGP, PEPL and ANR) that serve Empire's customers. During August 2010, there were approximately 28,000 firm sales customers on the Southern System, 9,000 on the Northern System, and 5,300 on the Northwest System.

II. BILLED REVENUE AND ACTUAL GAS COSTS

**** _____ ****

During August 2010, 313,098 dth of gas was purchased from ** _____ ** at a cost of $1,202,296 (313,098 x $3.84) of which, 2,170 dth was sold back to ** _____ **at a cost of $6,325 (2,170 x $2.915). The balance due ** _____ **, after the credit was applied to the original invoice (for the gas sold back to ** _____ **), was allocated to the South, North and NW systems. The North and NW systems were allocated gas after the sale, at a rate of $3.84 and the Southern system at $3.86. The allocations were priced incorrectly. The correct allocation should reflect a uniform price of $3.85 ($1,195,971/310,928) for the North, South and NW systems. The Southern system cost of gas should be decreased by $1,207 ($476,961-$478,168), Northern system increased by $811 ($483,076-$482,265) and NW system increased by $396 ($235,934-$235,538). In its response to Data Request No. 106, the Company agrees with Staff's proposed allocation adjustment.

During March 2010, a corrected ** _____ ** invoice in the amount of $64,248 was allocated to the North, South and NW systems. The correction was for natural gas supplies delivered on Cheyenne Plains pipeline (Cheyenne Plains). The Northern system did not receive deliveries from Cheyenne Plains, but only deliveries from PEPL. The Northern system was allocated in error by the Company. The correct allocation should be $52,940 South and $11,308 NW.

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The cost of gas should be increased by $6,157 ($52,940 - $46,783) on the Southern system, decreased by $7,472 ($0 - $7,472) on the Northern system and increased by $1,315 ($11,308 - $9,993) on the NW system.

**** _______ ****

Empire executed a physical call option (option for additional supply upon demand) with ** _______ ** for gas supply during the months of December 2009 to March 2010. The cost of these physical call options totaled $72,600. This amount was paid and the Company properly recorded these costs in their ACA filing. However, in error, the Company made an additional credit entry of $18,600 in April 2010 of the Company's filing. This credit was not necessary as the cost of these options had already been recovered in the Company's filing. Staff recommends that these costs be increased by $6,200 on the Northern system, $6,200 on the Southern system and $6,200 on the NW system.

III. RELIABILITY ANALYSIS AND GAS SUPPLY PLANNING

As a gas corporation providing natural gas service to Missouri customers, Empire is responsible for conducting reasonable long-range supply planning to meet its customer needs. Empire must make prudent decisions based on 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 LDC's plans and decisions regarding estimated peak day requirements, the LDC's pipeline 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 has the following comments and concerns regarding the reliability analysis:

1. Regression Models - Northern System Regression

The Company states their peak day for the Northern system as 14,722 Mcf. When considering the 95% confidence interval, the estimated peak day becomes 15,690 Mcf. Staff has noted that the model accuracy for the 2009/2010 ACA was reduced from the 2008/2009 ACA from an R-square value of 0.92 to 0.83. The baseload factor more than tripled from 292.4 to 1,040.8. The standard error increased from 706.6 to 997.4. Staff has requested the Company validate its dataset for the regression for the Northern system. Staff's review of heating degree days (HDD), ranging between 44 and 47, shows there may be an outlier in the dataset.

Date	North Total	MCI HDD
28-Dec-07	6,699	44
3-Jan-08	8,666	44
25-Jan-08	9,063	44
7-Mar-08	7,806	44
8-Mar-08	6,545	44
28-Feb-09	7,497	44
15-Dec-07	7,725	45
10-Dec-08	8,805	45
2-Mar-09	8,113	45
14-Jan-09	12,925	45.5
9-Dec-07	7,692	46
1-Jan-08	9,371	46
23-Jan-08	8,636	46
4-Feb-09	9,752	46
4-Jan-09	7,747	46.5
28-Jan-09	9,472	46.5

As can be seen in the table, the January 14th data point clearly appears to be an anomaly when comparing it to usage for similar heating degree days. Staff is currently in discussions with the Company regarding this issue.

2. <u>Interruptible Customers</u>

Staff is concerned that the Company is including interruptible loads (non-firm loads) for the regression analyses. This concern was previously stated in Staff's recommendation for the 2008/2009 ACA (GR-2009-0397). Staff restates these concerns based on its findings with the Company's regression for the Northern system. Staff will continue discussions with the Company regarding this issue.

3. <u>Southern System Reserve Margin</u>

The reserve margin on the Southern system for 2009/2010 ACA period is high. However, when the capacity decisions were made, Empire estimated a higher peak day for this system. The contracts for capacity on the Southern system do not expire until November 1, 2018. Staff encourages the Company to continue to pursue capacity releases, as appropriate, on SSCGP to reduce the costs associated with the high reserve margin.

IV. <u>HEDGING</u>

The Company has individual gas supply portfolios for each of its three systems. Staff's comments are provided for each service area.

Empire's hedging planned target was at 70% - 90% while actual coverage was 79% based on the 2009/2010 normal winter volumes. For the Southern system, Empire hedged about 75% of the normal winter requirements through a combination of storage, fixed price, and financial instruments. Empire purchased the fixed price and financial hedges between summer 2008 and summer 2009. For the Northern and Northwest systems, Empire depended on storage for its hedging strategies. For the Northern system, Empire hedged about 89% of the normal requirements by using storage, while about 84% of the Northwest system's normal requirements came from storage.

While Staff is concerned with the negative financial impacts from some of Empire's hedging had in this ACA period, Staff reviews the prudence of a Company's decision-making based on what the Company knew at the time it made its hedging decisions. Nevertheless, the Company's hedging planning should be flexible enough to incorporate changing market circumstances to balance the cost of hedging against the goal of price stabilization, though Staff is not suggesting that the Company should or could design its hedging strategy in order to beat the market.

In response to Staff's data requests pertaining to the hedging evaluation, Empire will be more likely toward the lower end of the hedging target range in the future winter period given the reduced upward price volatility in the current market. Staff recommends the Company be aware of any fundamental shifts in the market dynamics while being cautious on the market views.

Staff also recommends the Company continue to assess and document the effectiveness of its hedges for the 2010-2011 ACA and beyond. The analysis should include, but not be limited to, whether the hedging implementation was consistent with the hedging plan, identifying the benefits/costs based on the outcomes from the hedging strategy, and thus evaluating any potential improvements on the future hedging plan and its implementation.

The Staff further recommends the Company continue to document its hedging decisions and provide the documentation to the Staff during each ACA review. This documentation should include an overall hedging plan that addresses hedging goals, objectives, and strategies for each month of each ACA review and the circumstances under which certain hedging transactions occurred. The hedging plan should be updated, documented and completed well in advance of each approaching winter season. Empire should also consider longer term horizons in its hedging strategy. Consideration should be given to dollar cost averaging concepts when hedging.

In addition, Staff recommends the Company evaluate whether the hedging plan for each of the three systems has operational implications for warm and cold weather conditions.

V. RECOMMENDATIONS

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

1. Adjust the balances in its 2009/2010 ACA filing to reflect the ending (over)/under recovery balances for the ACA, TOP, TC, and Refund accounts per the following table:

TABLE 1

Description (+) Under-recovery (-) Over-recovery	8-31-10 Ending Balances Per Filing	Commission Approved Adjustments prior to 2009-2010 ACA (A)	Staff Adjustments For 2009-2010 ACA	Staff Recommended 8-31-10 Ending Balances
Southern System: Firm ACA	($1,147,145)	$0	$4,950 (A1) $6,200 (B)	($1,135,995)
Interruptible ACA	($33,867)	$0	$0	($33,867)
Take-or-Pay	$0	$0	$0	$0
Transition Cost	$0	$0	$0	$0
Refund	$0	$0	$0	$0
Northern System: Firm ACA	($190,272)	$0	($6,661) (A2) $6,200 (B)	($190,733)
Interruptible ACA	($28,217)	$0	$0	($28,217)
Take-or-Pay	$0	$0	$0	$0
Transition Cost	$0	$0	$0	$0
Refund	$0	$0	$0	$0
Northwest System: Firm ACA	$24,864	$0	$1,711 (A3) $6,200 (B)	$32,775
Interruptible ACA	$0	$0	$0	$0
Take-or-Pay	$0	$0	$0	$0
Transition Cost	$0	$0	$0	$0
Refund	$0	$0	$0	$0

A) All adjustments prior to GR-2011-0108 have been adopted by the Company.
A1) ** _____ ** ($1,207) + $6,157
A2) ** _____ ** $811 + ($7,472)
A3) ** _____ ** $396 + $1,315
B) ** _______ ** Physical call option

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2. Respond to Staff's recommendations in the Hedging section.

3. Respond to Staff's recommendations in the Reliability Analysis and Gas Supply Planning sections.

4. Respond to recommendations included herein within 30 days.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of The Empire District Gas Company's Purchased Gas Adjustment Tariff Filing.	)))	File No. GR-2011-0108

AFFIDAVIT OF DAVID M. SOMMERER

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

David M. Sommerer, being of lawful age, on his oath states: that as a Utility Regulatory Manager in the Procurement Analysis Unit of the Utility Services Department, he has participated in the preparation of the foregoing report, in memorandum form, consisting of 8 pages to be presented in the above case; that he has verified that the foregoing Staff Memorandum was prepared by himself and Staff of the Commission that have knowledge of the matters set forth as described below; that he has verified with each of the Staff members listed below that the matters set forth in the Staff Memorandum are true and correct to the best of his knowledge and belief,

Phil Lock, Utility Regulatory Auditor III:	Billed Revenues & Actual Gas Costs
Derick Miles, PE, Utility Regulatory Engineer I:	Reliability Analysis & Gas Supply Planning
Kwang Choe, PhD, Regulatory Economist II:	Hedging

that he has knowledge of the matters set forth in such report and that such matters are true to the best of his knowledge and belief.

David M. Sommerer

David M. Sommerer

Subscribed and sworn to before me this 30th day of December, 2011.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 08, 2012
Commission Number: 08412071

D Suzie Mankin

Notary Public