MEMORANDUM

TO: Missouri Public Service Commission Official Case File, Case No. GR-2007-0256, Missouri Gas Energy, a Division of Southern Union Company

FROM: David M. Sommerer, Manager - Procurement Analysis Department
Anne Allee, Regulatory Auditor - Procurement Analysis Department
Lesa A. Jenkins, PE, Regulatory Engineer - Procurement Analysis Department
Kwang Choe, PhD, Regulatory Economist - Procurement Analysis Department

/s/ David M. Sommerer 12/12/08	/s/ Steven C. Reed 12/12/08
Project Coordinator / Date	General Counsel's Office / Date

SUBJECT: Staff's Recommendation in Missouri Gas Energy's 2006-2007 Actual Cost Adjustment Filing

DATE: December 12, 2008

I. BACKGROUND

The Procurement Analysis Department (Staff) has reviewed the Missouri Gas Energy's (MGE or Company) October 16, 2007 Actual Cost Adjustment (ACA) filing for the 2006-2007 period. The filing, in case GR-2007-0256, contains the Company's ACA account balance calculation.

MGE served an average of 514,800 customers in the Kansas City, Joplin and St. Joseph areas during the 2006-2007 ACA (Data Request No. 63). MGE transports its gas supply over Panhandle Eastern Pipe Line (PEPL), Southern Star Central Gas Pipeline (SSC), Kinder Morgan Interstate Gas Transmission (KM) and Enbridge Pipeline commonly known as Kansas Pipeline Company (KPC).

Staff reviewed and evaluated MGE's billed revenues and actual gas costs for the period of July 1, 2006, to June 30, 2007. The Staff also reviewed MGE's gas purchasing practices to determine the prudence of the Company's purchasing and operating decisions. Staff conducted a reliability analysis of estimated peak day requirements and the capacity levels needed to meet those requirements, peak day reserve margin and the reasons for this reserve margin, and a review of normal, warm and cold weather requirements. Staff also reviewed MGE's hedging for the period to determine the reasonableness of the Company's hedging plans.

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III. OFF-SYSTEM SALES TRANSACTIONS

MGE's tariff contains a gas cost incentive mechanism which allows it to share in capacity release and off-system sales revenues depending upon the level of revenues achieved within an ACA period. Off-system sales are defined as sales MGE makes outside of its service area. A capacity release occurs when MGE releases or assigns its firm pipeline transportation rights to another party. MGE receives a reservation cost credit on its interstate pipeline company invoice for capacity released.

The Staff has concerns with MGE's policies and procedures supporting its off-system sales activities during the ACA period under review. MGE did not have documented policies and procedures to ensure its on system customers were not negatively impacted by its off-system sales activities. MGE documented its off-system sales policy after the ACA period was concluded. This policy included a methodology for allocation of supply between on and off-system customers on days when MGE's supply was "cut," meaning suppliers were unable to deliver the amount of gas MGE had ordered. MGE developed its analysis regarding the impacts of cuts after the ACA period.

The Staff recommends MGE document the impacts of cuts at the time the events occur. MGE has indicated it is in the process of training an individual to track and document these impacts. In order to get an accurate level of revenues and expenses related to off-system sales, the Staff also recommends MGE reconcile the imbalances caused by any cuts within the same ACA period the imbalance occurs. If a cut were to occur at the end of an ACA period, the

Company should reconcile as soon as possible. The Staff will continue to monitor the functioning of MGE's off-system sales supply allocation process.

IV. RELIABILITY ANALYSIS AND GAS SUPPLY PLANNING IMPROVEMENT RECOMMENDATIONS

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 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.

The primary service areas to which MGE distributes natural gas are Kansas City, St. Joseph and Joplin. MGE has approximately 395,600 firm customers in the Kansas City area, 29,200 in St. Joseph, and 78,500 in Joplin, for a total of 503,300 firm customers (MGE Demand/Capacity Analysis, January 2006). For the 2006/2007 ACA MGE reports an average of 446,167 residential customers, 67,336 commercial customers, 304 industrial customers, and 1,022 transport customers, for an average total of 514,828 customers. To assure that each area has sufficient transportation capacity, MGE must consider the capacity available for each area. In its Demand/Capacity Analysis dated January 2006, MGE plans its capacity by service area.

Staff's review of MGE's reliability and gas supply plans for the 2006/2007 ACA period produced the following comments and concerns.

A. CAPACITY PLANNING

1. General

Staff continues to have concerns with MGE's methodology for estimating peak day requirements.[1] A review of actual usage on recent cold days, compared to the usage estimated by MGE's model, reveals that MGE's model overestimates requirements by 8% to 13.5% for the Kansas City area and by 14.6% to 21.1% for the St. Joseph area. For Joplin, the model overestimates requirements by 12.1% to 22.8% for four of the days and underestimates by 4% for one day, and the underestimate is for the warmest day.

The recent cold days are within this range of temperatures considered by MGE in its analysis of peak day, and thus the model should reasonably estimate usage for those

[1] Staff documented concerns with the Company's peak day planning/reliability analysis in the 2004/2005 ACA, GR-2005-0169, the 2003/2004 ACA, GR-2005-0104, the 2002/2003 ACA, GR-2003-0330, 2001/2002 ACA, GR-2002-348, the 2000/2001 ACA, GR-2001-382, and the 1999/2000 ACA, GR-2000-425. MGE continues to rely on its methodology and estimates for peak day supply planning.

days. However, for all but the one warmest day for Joplin, even when variability is considered (using the standard error of MGE's model), the usage is overestimated. MGE's evaluation of peak day for Kansas City and St. Joseph considered temperatures that ranged from a low of 44.5 HDD (20.5 degrees Fahrenheit) to a high of 65 HDD (0 degrees Fahrenheit), and the recent actual days of 53 to 61 HDD were within this range. MGE's evaluation of the Joplin area peak day considered temperatures that ranged from a low of 40.5 (24.5 degrees Fahrenheit) to a high of 59 HDD (6 degrees Fahrenheit), and the recent actual days of 47 to 52 HDD were within this range.

MGE should continue to evaluate whether its peak day methodology is reasonable and revise as necessary to adequately plan for peak day requirements.

Actual Usage on Recent Cold Days, Compared to the Usage Estimated by MGE's Model

	HDD	**Actuals** Total Use	**Estimates** BL + HL + Growth	Difference within Std Error?	Difference as % of Actual
Kansas City					
Thursday, February 15, 2007	61	478,938	547,237	No	12.50%
Tuesday, January 16, 2007	56	436,956	505,034	No	13.50%
Wednesday, February 14, 2007	55	438,625	496,594	No	11.70%
Tuesday, January 30, 2007	53	441,426	479,712	No	8.00%
Saturday, February 03, 2007	53	438,822	479,712	No	8.50%
St. Joseph					
Thursday, February 15, 2007	61	38,774	47,961	No	19.20%
Tuesday, January 16, 2007	56	34,895	44,231	No	21.10%
Wednesday, February 14, 2007	55	35,680	43,486	No	18.00%
Tuesday, January 30, 2007	53	35,219	41,994	No	16.10%
Saturday, February 03, 2007	53	35,873	41,994	No	14.60%
Joplin					
Tuesday, January 16, 2007	52	69,101	87,862	No	21.40%
Wednesday, January 31, 2007	49	73,026	83,092	No	12.10%
Sunday, December 03, 2006	49	67,159	83,092	No	19.20%
Sunday, February 04, 2007	49	64,175	83,092	No	22.80%
Thursday, February 15, 2007	47	83,007	79,912	Yes	-4.00%

2. Capacity Deliverable to Kansas City Area

The capacity considered in MGE's Demand/Capacity Analyses (dated January 2006) has major differences from the market area capacity deliverable to the Kansas City service area as documented in MGE's response to Data Request (DR) No. 49.

MGE's Demand/Capacity Analyses consider the entire contracted market area capacity as available to meet peak day requirements, but its DR No. 49 response indicates that this is not possible. Because of the manner that MGE structures its

upstream pipeline contracts and market area pipeline contracts to meet the Southern Star Central Gas Pipeline (SSC) Transportation-Storage-Service (TSS) requirements and its plans to transfer supplies from one pipeline to another pipeline, MGE's contracted firm market area capacity is not all deliverable to the service areas for a peak cold day. Otherwise, MGE would be counting the capacity twice – once to transfer it to another pipeline and again to deliver to the service areas. For the Kansas City area, the difference was about 34,000 MMBtu/day for the 2005/2006 ACA and 24,000 MMBtu/day for the 2006/2007 ACA. (MGE made changes to its upstream contracts that impact the 2006/2007 ACA). Additionally, the Kinder Morgan market area capacity for Kansas City relies on supply transported on upstream capacity that MGE does not have under firm contract.

If one accepts MGE's peak day estimates for the Kansas City area (Demand/Capacity Analysis dated January 2006) and compares it to the market area capacity that is actually available for ultimate delivery to the Kansas City area, MGE will be short market area capacity for Kansas City beginning with the 2009/2010 winter. MGE's Demand/Capacity Analysis dated January 2006 failed to address this issue.

MGE's capacity planning for peak day requirement must consider the capacity that can be relied on for a peak cold day to be delivered to each service area. Beginning with the 2007/2008 ACA, MGE should update its Demand/Capacity analysis to consider the firm capacity that is deliverable to each of its service areas for a peak day, similar to the capacity deliverability documented in MGE's response to DR No. 49 in this case. MGE's rationale for reliance on any capacity that is not under firm contract should be explained. MGE's plan to release any capacity under non-recallable terms for the winter months should be explained and should be considered in the reserve margin calculations.

3. Kansas City Service Area - Panhandle Eastern Pipe Line Company (Panhandle) Capacity

MGE conducted a separate analysis of capacity required on Panhandle. MGE does not evaluate the base load and heat load from a regression analysis, but simply averages 12 data points in the summer for the base load and 15 data points in the winter for the heat load. Staff has concerns with MGE's methodology, similar to concerns expressed in prior cases for MGE's peak day methodology.

If one accepts MGE's peak day methodology, MGE is short Panhandle pipeline capacity beginning in 2008/2009 (short 1,051 MMBtu/day, or negative 2.4% reserve margin). MGE is short 3,436 MMBtu/day, or negative 7.4% reserve margin for 2009/2010. Staff will continue to monitor MGE's short and long-term capacity planning in the ACA reviews.

B. SUPPLY PLANNING

1. Supply for Peak Day

MGE has firm supply in place to cover 85%, 86% and 84% of peak day requirements for December 2006, January 2007, and February 2007. MGE would need to purchase approximately 300,000 MMBtu in the daily market for peak day coverage for December and January. In general, MGE states to the extent the winter weather forecasts begin showing significantly colder weather than previously expected and if storage inventories are inadequate, incremental flowing gas must be purchased.

MGE's plans rely on "Virtual Calls", recall of capacity release volumes, for its peak day requirements (DR No. 55). MGE's plans show supply to cover 95% of peak day requirements for January 2007. However, there are no contractual assurances that the gas flowing on these capacity release deals would include firm supply that would be flowing every day. Thus, the supply behind these deals could be interruptible or the shipper may not nominate the full volume each day. MGE later provided DR No. 55.1 that eliminated the "Virtual Calls" from its peak day plan, except for **_____ **, which MGE includes in its "Calls". There are no assurances that ** _____ ** would have flowing supplies during the winter months that would provide firm supply up to the maximum capacity of the release and thus, Staff does not include ** _____ ** volumes in the peak day coverage. MGE's reliance on recall of capacity release volumes to acquire flowing supply is of concern for reliability of supply on a cold day. MGE modified its methodology somewhat in DR No. 55.1. Staff will continue to review in the next ACA review, the 2007/2008 ACA.

2. Monthly Supply Planning

For MGE's monthly supply planning (DR56), it refers to its Demand/Capacity Analysis dated January 2006 (January 2006 Analysis), the Monthly Supply/Demand Summaries (DR 55 and DR55.1) and the MGE Dealsheets (DR36). MGE's monthly planning contains various estimates of requirements for warm and cold weather requirements and estimated requirements for normal weather.

The Monthly Supply/Demand Summary estimates of normal requirements (DR Nos. 55 and 55.1) for the winter months match those in the January 2006 Analysis for 2005/2006. Thus, the 2006/2007 winter month estimates of normal are the same as those for 2005/2006. MGE's monthly estimates in the January 2006 Analysis consider factors that vary by month and service area. Each estimate includes a base load and heating degree day (HDD) factor. Some months in some service areas also include an additional "Constant" factor, a "Weekday/Weekend" factor, a "Trend" factor, and a "Day of Month" factor. MGE does not add a growth factor to the estimates of normal month requirements as it did for its peak day estimates.

MGE's methodology for calculating its various warm and cold scenarios in DR Nos. 55 and 45 do not match the monthly supply planning methodology used in its January 2006 Analysis.

Base load for monthly planning is the same as that for peak day planning, and the concerns are documented in prior cases. Staff's concern with MGE's heat load estimates for monthly planning is that MGE is including data over too long of a time frame, 1997/1998 to 2004/2005. Growth and changes in customer habits and appliances could vary over this time frame, skewing the analysis.

On a moving forward basis, MGE's monthly planning in its Demand/Capacity Analysis should consider factors that MGE can reasonably be expected to use in its monthly supply planning, the Monthly Supply/Demand Summaries. The estimates for monthly supply planning are being used by MGE using various HDD scenarios to obtain estimates for normal, warm, and cold month requirements. This is different than the extreme peak day that must be considered by MGE for its capacity planning. Thus, MGE could determine that more factors are appropriate in the peak day estimate but decide that base load, heat load, and growth factors (including negative growth) are sufficient for the monthly supply planning. Stated another way, it would be more productive to develop factors for the monthly estimates in the Demand/Capacity Analysis and use those factors rather than later manipulating the factors to obtain yet another factor for its monthly supply planning. Additionally, MGE's Demand/Capacity Analysis should include estimates for more than one year. Staff recommends estimates for a 5-year period.

3. MGE Supply for Warm Weather Requirements

MGE's Supply Plan (DR No. 55 and modified in DR No. 55.1) includes plans for Normal, Average Ultimate Warm, and Average Ultimate Cold.

MGE's supply plan has flexibility so that it does not exceed the storage injection ratchets for the "Average Ultimate Warm". This means when the "Average Ultimate Warm" occurs, MGE's supply plans exceed the flowing requirements, but it has flexibility with its storage so that the excess supply can be injected into storage. However, "Average Ultimate Warm" is not the warmest HDD. For example, for November there were 49 days warmer than the average warmest day. DR No. 45 also includes a "Warmest Volume" estimate for each month based on the warmest HDD experienced over the past 30-years.

Using the same methodology as in MGE's Response to DR No. 55.1 for "Average Ultimate Warm", Staff evaluated MGE's supply plans for "Warmest Volume". MGE's supply plan would exceed the flowing requirements for warmest day and would exceed the storage injection limits for each month of November through February. For a historical warm day in November, MGE over-purchased

82,341 MMBtu of which 40,019 MMBtu could be injected into TSS storage and there would still be an excess of 42,322 MMBtu for those days. For a historical warm day in December, MGE over-purchased 169,861 MMBtu of which 60,029 MMBtu could be injected into TSS storage and there would still be an excess of 109,832 MMBtu for those days. MGE also exceeds the storage injection limits by 31,141 MMBtu for January and 16,170 MMBtu for February.

Staff also considered that the "Warmest Volume" is an extreme case. It only occurs on the warmest day each month from a review of 30-years of HDD data. Therefore, Staff considered a third warm scenario using HDD selected based on average monthly HDD minus 2-standard deviations. For this warm scenario, MGE's supply plan would exceed the flowing requirements and would exceed the storage injection limits for November and December. For a warm day in November, MGE's Plan would over-purchase by 72,900 MMBtu of which 40,019 MMBtu could be injected into TSS storage and there would still be an excess of 32,881 MMBtu for those days. For a warm day in December, MGE's Plan would over-purchase by 78,917 MMBtu of which 60,029 MMBtu could be injected into TSS storage and there would still be an excess of 18,888 MMBtu for those days.

The early winter months are of great concern because if the weather is warm and storage is full or nearly full, selling natural gas into the market would have a higher risk of a loss on the price paid for the gas.

Staff recommends that MGE review its supply plans for November and December to consider the volumes of base load and call supplies and the possible cost to customers for excess natural gas for warmer days in those months.

C. STORAGE PLANNING

MGE's supply plans for normal weather (Supply/Demand Summaries, DR Nos. 55 and 55.1) do not have the same storage plans as those in its Storage Plans in DR No. 64. The storage plans in DR No. 64 are consistent with those from 2000/2001 through 2005/2006 in which MGE plans to have the largest planned withdrawal in November. Staff expressed concerns with MGE's large withdrawal plans for November in the past six ACA cases. However, MGE's Supply/Demand Summaries for the 2006/2007 winter show that MGE does not intend to withdraw from storage in November at the planned large level as stated in its Storage Plans (DR No. 64).

Staff continues to have concerns regarding the Company's planned normal storage withdrawals and the inconsistencies in MGE's storage plans for November.

V. HEDGING

In its review of MGE's purchasing practices, the Staff reviewed the Company's hedging transactions. The Staff also reviewed the Company's natural gas hedging policy, natural gas trading procedures, and 2006 - 2007 hedging strategy. While the Staff has concern with a certain type of instrument used by MGE to hedge its price risk, the Staff's conclusion is that, overall, MGE's hedging for this ACA period was reasonable and adequate.

Weather was mild overall during the heating season and thus actual delivered volumes to the customers were less than delivered volumes for normal weather. MGE withdrew less from storage than it would have with normal winter weather. MGE combined storage, financial instruments, and fixed forward prices in order to hedge portions of the volumes needed for the winter heating season November 2006 through March 2007. MGE utilized swaps for its financial instruments and the Company started placing the financial hedges in February 2006 and continued purchasing them through the middle part of September 2006. MGE hedged 65% of normal winter requirements with storage, financial instruments, and fixed forward prices.

The Staff has concern for some of the hedging instruments that were intended for the winter months November 2006 through March 2007. MGE utilized daily spot market prices during the winter months for the fixed-price contracts. Although it may have been economically efficient for the Company to purchase the daily spot prices for the winter months November through December 2006, and also February through March 2007 when the market prices were relatively low, the Staff cautions MGE about counting winter daily spot purchases for hedging purposes because there is no guarantee that this same opportunity of low daily prices will occur each winter.

Although the Company used a diversified portfolio approach to hedge against market risks for the winter heating season November 2006 through March 2007, Staff recommends that the Company analyze its hedging risk for each winter month under normal conditions and cold and warm weather conditions, including cold weather that may occur late in the winter season. This analysis should include a review of the volumes hedged and the associated cost. In addition, MGE should analyze each month where price exposure exists, to evaluate the costs and risks of not covering, or minimally covering, the unhedged price volatility for that particular month. The Staff further recommends that the Company continue to update and 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. The hedging plan should be documented and completed well in advance of each approaching winter season. The Company should also evaluate longer-term time horizons for placing hedges. Historical Company practice has shown that hedging for the winter is generally not started until the spring prior to the upcoming winter. In essence, most of the hedging would be done from the time period between spring and fall just prior to the winter under consideration. However, the increased summer price volatility could easily subject the Company to market risk during the summer. Therefore, the Company should also place hedges on longer-time horizons.

Finally, the Company should examine whether the Company's hedging strategy has been reasonable to mitigate natural gas upward price volatility by, for example, stress testing to evaluate coverage under extreme price conditions.

VI. RECOMMENDATIONS

It is Staff's opinion that the Company should do the following:

1. Establish the following ACA and Refund account balances shown in the table below to reflect the (over)/under-recovery balances as of June 30, 2007. An over-recovery reflects the amount that is owed to the customer by the Company, while an under-recovery is an amount that is owed to the Company by the customers.

Account	6-30-07 Ending Balances per MGE Filing	Staff Adjustments	6-30-07 Staff Recommended Ending Balances
ACA Balance	$(8,991,999)	$ 0	$ (8,991,999)
Large Volume Refund	$ (527,438)	$ 0	$ (527,438)

2. The Staff recommends MGE document the impacts of cuts to nominations at the time the events occur and reconcile imbalances caused by any cuts within the same ACA period the imbalance occurs.

3. Review the concerns expressed by Staff in the Reliability Analysis and Gas Supply and Planning section and within 30-days respond to the Staff's recommendations therein related to capacity planning, supply planning, and storage planning.

4. Carefully consider the risk of placing too much reliance on winter hedges that are placed during the same winter periods that are intended to be protected, and are actually underway. The Company should analyze its hedging risk for each winter month under normal conditions and cold and warm weather conditions, including cold weather that may occur late in the winter season. This analysis should include a review of the volumes hedged and the associated cost. MGE should analyze each month where price exposure exists, to evaluate the costs and risks of not covering, or minimally covering, the unhedged price volatility for that particular month. The Staff further recommends that the Company continue to update and 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. The hedging plan should be documented and completed well in advance of each approaching winter season. The Company should also evaluate longer-term time horizons for placing hedges. Historical Company practice has shown

that hedging for the winter is generally not started until the spring prior to the winter that is hedged. In essence, most of the hedging would be done from the time period between spring and fall just prior to the winter under consideration. However, the increased summer price volatility and similar volatility for the subsequent winter could easily subject the Company to market risk during the summer when the bulk of historical hedges have been placed. Finally, the Company should examine whether the Company's hedging strategy has been reasonable to mitigate natural gas upward price volatility by, for example, stress testing to evaluate coverage under extreme price conditions.

4. Respond to recommendations included herein within 30 days.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy Purchased)
Gas Adjustment Rate Change.) Case No. GR-2007-0256

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 Department of the Utility Services Division, he has participated in the preparation of the foregoing report, consisting of 11 pages to be presented in the above case; that he has verified that the following 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,

Anne M. Allee: Billed Revenues and Actual Gas Costs
Kwang Y. Choe: Hedging
Lesa Jenkins: Reliability Analysis and Gas Supply Planning

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

Subscribed and sworn to before me this 12th day of December 2008.

Notary Public

CARLA K. SCHNIEDERS
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: August 25, 2012
Commission Number: 08533187