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Witness:	John J. Reed
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MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NOS. GR-2002-348/GR-2003-0330

REBUTTAL TESTIMONY

OF

JOHN J. REED

ON BEHALF OF MISSOURI GAS ENERGY

Jefferson City, Missouri

February 1, 2006

** Denotes Highly Confidential Material **

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CASE NOS. GR-2002-348 and GR-2003-0330 (Consolidated)

February 1, 2006

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John J. Reed. My business address is 313 Boston Post Road West, Suite 210, Marlborough, Massachusetts 01752.

Q. ARE YOU THE SAME JOHN J. REED THAT PRESENTED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my testimony is to respond to the direct testimony of Commission Staff ("Staff") Witness Lesa A. Jenkins in this proceeding. Essentially, Ms. Jenkins has alleged that Missouri Gas Energy's ("MGE's" or "Company's") demand forecast is inadequate, and alleges that this resulted in imprudent capacity decisions made by the Company.[1]

[1] Specifically, Ms. Jenkins has discussed two MGE capacity decisions: (i) contracting in 1996 for an additional ** ** MMBtu/day on KN Interstate Gas Transmission ("Pony Express") to come in-service for MGE in October 2001; and (ii) renewing the Williams Gas Pipeline – Central (now known as Southern Star Central ("Southern Star")) contract in June 2001.

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Q. WHAT IS STAFF'S CONCLUSION REGARDING MGE RELIABILITY?

A. The Staff direct testimony concludes that the MGE Kansas City region has an excess reserve margin (i.e., excess contracted pipeline capacity) of ** ** MMBtu/day and the St. Joseph region has an excess reserve margin of ** ** MMBtu/day.[2] As a result of Staff's alleged excess reserve margin of ** ** MMBtu/day (i.e., ** ** MMBtu/day plus ** ** MMBtu/day), Staff has proposed an annual disallowance of approximately ** **.[3]

Q. WHAT IS THE BASIS OF STAFF'S CONCLUSIONS?

A. Staff identified two primary issues, which are inter-related, in support of its conclusions. First, Ms. Jenkins stated that MGE did not properly estimate demand for a peak day. Second, since she alleged that MGE did not forecast its peak day correctly, Staff alleged that MGE has not provided justification for the alleged excess reserve margin.[4]

II. EXECUTIVE SUMMARY

Q. WHAT ARE THE PRIMARY FINDINGS OF YOUR REBUTTAL TESTIMONY?

A. The primary conclusion of my rebuttal testimony is that Ms. Jenkins has not presented reasonable and supportable evidence regarding MGE's capacity decisions that would lead one to doubt the prudence of those decisions. In summary:

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2 Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 29.

3 Ibid, p. 38.

4 Ibid, p. 30. ("It is Staff's position that MGE has not adequately calculated peak day requirements and has not provided justification for its excess reserve margin.")

1. Ms. Jenkins has identified two MGE capacity decisions that she believes to be imprudent; however, Ms. Jenkins has failed to demonstrate that such decisions were in fact imprudent based on generally-accepted prudence standards. Specifically:

   - Ms. Jenkins did not rely upon information and circumstances that existed at the time the decisions were made to support her analysis;
   - Ms. Jenkins did not consider that reasonable and appropriate decisions may vary over a wide range; and
   - Ms. Jenkins failed to identify that Staff indicated that MGE's capacity planning standard were adequate at the time that MGE's capacity decisions were made.

   Ms. Jenkins' conclusions are the result of hindsight and ignore generally-accepted prudence standards with which Staff has previously indicated that it agrees.

2. The design day capacity analysis upon which Ms. Jenkins' capacity disallowance recommendation is based is flawed, nor does it consider numerous other important factors associated with capacity planning, including the substantial costs associated with not having sufficient capacity to meet a design day.

3. Therefore, Ms. Jenkins' proposed disallowance is unfounded and should be disregarded by the Commission.

III. STAFF'S ANALYSIS FAILS TO MEET GENERALLY-ACCEPTED PRUDENCE REVIEW STANDARDS

Q. WHAT IS YOUR UNDERSTANDING OF THE DECISIONS THAT MS. JENKINS ALLEGES TO BE IMPRUDENT IN HER DIRECT TESTIMONY IN THIS CASE?

A. Ms. Jenkins has alleged that (i) MGE has not evaluated or documented that the Southern Star contract volumes could not have been reduced;[5] (ii) MGE did not evaluate customer

[5] Ibid, p. 29.

demand;[6] and (iii) MGE failed to adequately evaluate and document the decision to maintain the Southern Star volumes.[7]

Q. BEFORE DISCUSSING MS. JENKINS' ALLEGATIONS, COULD YOU PLEASE BRIEFLY REVIEW THE PRUDENCE STANDARDS.

A. In my direct testimony, I provided a detailed description of generally-accepted prudence standards, as well as the prudence standards previously relied upon by the Commission. For purposes of this rebuttal, I will focus specifically on three aspects of those generally-accepted prudence standards that should be considered in any prudence evaluation:

- Any evaluation of a utility's actions must be based on the information available and the circumstances that existed at the time the decision was made;[8]
- Reasonable and appropriate management actions and decisions vary over a wide range, thus it is important to define a reasonable range of behavior, and a minimally acceptable level of conduct;[9] and
- The minimally acceptable level of behavior not only needs to be defined, but also communicated with sufficient time in order for the utility to reasonably meet the standards.[10]

Q. WHAT ARE THE SPECIFIC CAPACITY DECISIONS BY MGE THAT MS. JENKINS BELIEVES TO BE IMPRUDENT?

A. Ms. Jenkins identified two specific capacity decisions by MGE in her direct testimony that she believes to be imprudent. The first capacity decision was MGE's purchase of **

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6 Ibid, p. 30.

7 Ibid, p. 30.

8 Direct Testimony of John J. Reed, Case Nos. GR-2002-348 and GR-2003-0330, p. 14.

9 Ibid, p. 21.

10 Ibid, p. 21.

** MMBtu/day on Pony Express.[11] The second capacity decision was MGE's renewal and consolidation of its Southern Star capacity.[12]

Q. WHEN WAS THE ** ** MMBTU/DAY CONTRACT ON PONY EXPRESS SIGNED?

A. The Pony Express contract was signed in 1996.[13] The total quantity for the Pony Express contract was ** ** MMBtu/day; however, the volume had a two-staged phase-in. The first stage consisted of ** ** MMBtu/day and was effective in 1997, while the second stage consisted of ** ** MMBtu/day and was effective October 2001.[14]

In other words, even though ** ** MMBtu/day was effective October 2001 through the second stage of the phase-in, the decision to purchase that capacity was made in 1996.

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[11] Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 8. ("The Company contracted for an additional ** ** beginning with the 2001/2002 ACA for a term of ** **.)

[12] Ibid, p. 30. ("Specifically MGE failed to adequately evaluate and document its decision to maintain the ** ** total transportation volumes at the same level.")

[13] Rebuttal Testimony of David N. Kirkland, Case Nos. GR-2002-348 and GR-2003-0330, p. 10.

[14] Ibid, p. 10.

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Q. PLEASE DISCUSS THE SECOND CAPACITY DECISION IDENTIFIED BY MS. JENKINS AS BEING IMPRUDENT, i.e., MGE'S RENEWAL AND CONSOLIDATION OF ITS SOUTHERN STAR CONTRACT.

A. The Southern Star contract was signed on June 1, 2001, effective June 15, 2001. This contract was a renewal and consolidation of several Southern Star contracts, although it did not increase MGE's capacity.[15]

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF THE CONTRACT EXECUTION DATES FOR THE PONY EXPRESS AND SOUTHERN STAR CONTRACTS.

A. The contract execution date for interstate pipeline capacity is the culmination of the capacity decision process. It must be understood that the execution date of a capacity contract is not an indication of when the analysis or evaluation for that decision was conducted. Rather, given the lead time for pipeline capacity acquisition, the analysis and evaluation would have had to happen before the contract was signed. Therefore, by necessity, the information utilized or relied upon by MGE would be information available well before the actual contract execution date. Specifically, MGE would have utilized information that was available prior to December 1996 regarding its decision to purchase Pony Express capacity, and information that was available prior to June 2001 regarding its decision to renew and consolidate its Southern Star contract. As discussed in more detail below and in the rebuttal testimony of MGE Witness Kirkland, the MGE feedback from Staff during this time period indicated that the MGE planning process utilized for capacity acquisition was adequate.

[15] Ibid, p. 11.

Q. DOES STAFF'S CRITICISM OF MGE'S CAPACITY PLANNING MEET THE FIRST PRUDENCE POINT YOU RAISED ABOVE, i.e., AN EVALUATION OF A UTILITY'S ACTIONS MUST BE BASED ON THE INFORMATION AVAILABLE AND THE CIRCUMSTANCES THAT EXISTED AT THE TIME THE DECISION WAS MADE?

A. Absolutely not. It is clear that Ms. Jenkins has not considered the sequence of events, the information available at the time the decisions were made, nor the appropriate time for addressing prudence. The capacity decisions identified by Ms. Jenkins in her direct testimony as being imprudent were made prior to the 2001/2002 and 2002/2003 Actual Cost Adjustment ("ACA") periods in question in this proceeding. Specifically, in Data Request No. 167(g), MGE requested that Ms. Jenkins specify which capacity decisions were made during the 2001/2002 or 2002/2003 ACA periods, and in Data Request No. 167(h), to identify what new contracts were executed in the 2001/2002 or 2002/2003 ACA periods. Ms. Jenkins responded to these requests by referring MGE to pages 8, 29, and 30 of her direct testimony (i.e., the ** ** MMBtu/day Pony Express and Southern Star renewal/consolidation decisions). However, as noted above, the decisions for both of these contracts were made well before the ACA periods in question in this proceeding. As such, there were no decisions made by MGE to add or change its capacity contracts to which Ms. Jenkins can point in either of these two ACA periods in this proceeding (i.e., July 2001 through June 2003).

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Ms. Jenkins' use of (i) new forecasting techniques when the methods used by MGE at the time of the decision had already been found to be adequate by Staff; (ii) new data that was not available until after the 1996 Pony Express decision was made, i.e., the 1997 through 2001 weather and consumption data utilized by Staff in this proceeding; and (iii) forecasting techniques for evaluating MGE's capacity planning that were never previously communicated to the Company, clearly constitutes hindsight review which is prohibited under generally-accepted prudence standards.

Q. DOES STAFF AGREE THAT AN EVALUATION OF A UTILITY'S ACTIONS MUST BE BASED ON THE INFORMATION AVAILABLE AND THE CIRCUMSTANCES THAT EXISTED AT THE TIME THE DECISION WAS MADE?

A. Yes. In Data Request No. 168, Staff was requested to define "imprudent" as used in Ms. Jenkins' direct testimony. In that response, Staff stated the following:

> On advice of counsel, the Commission has stated its definition of prudence: 'Prudence is measured by the standard of reasonable care requiring due diligence *based on circumstances that existed at the time* the challenged item occurred, including what the utility's management knew or should have known.' 9 MoPSC 3rd 254
>
> The Commission has also stated that 'the company's conduct should be judged by asking whether the conduct *was reasonable at the time*, under all the circumstances, considering that the company had to solve its problem prospectively rather than in reliance on hindsight. In effect, our responsibility is to determine how reasonable people would have performed the tasks that confronted the company. 27 Mo. P.S.C. (N.S.) 183, 194 (Mo. PSC 1985) (citation omitted) (emphasis added) (Staff Response to Data Request No. 168, Case Nos. GR-2002-348 and GR-2003-0330).

Therefore, although Staff appears to agree with the concept that any assessment of utility decisions needs to be done based on the information that was available at the time, Staff has failed to consider this issue in its own analysis in this proceeding.

Q. IN TERMS OF THE SECOND PRUDENCE CONCEPT YOU DISCUSSED, i.e., A WIDE RANGE OF REASONABLE ACTIONS/BEHAVIOR, DOES STAFF AGREE WITH THIS CONCEPT?

A. Yes. Staff has acknowledged that reasonable and appropriate management actions and decisions may vary over a wide range. For example, in 1997 with respect to LDC extreme weather condition analyses, Staff noted:

> Obviously, LDCs look at historical weather to forecast future demand. How they do this depends on the individual LDC's philosophy. Some LDCs are quite lean (i.e., very low reserve margin) in that they only design for the worst weather they have observed in the last 5 to 10 years. Other LDCs are quite conservative in that they design for the worst historical weather observed in the last 100 years. ("Staff's Recommendations in Case No. GO-96-243, Missouri Gas Energy's Reliability Report." Memorandum to Missouri Public Service Commission, May 30, 1997, p. 2).

Staff has stated, at least with respect to extreme weather conditions, that an LDC's approach will vary (i.e., quite lean to quite conservative); however, regardless of the approach, it is dependent on the individual LDC philosophy.

Q. HAS MS. JENKINS ACKNOWLEDGED A "RANGE OF REASONABLENESS" WITH REGARD TO LDC ACTIONS?

A. Yes. In response to Data Request No. 162 in this proceeding, Ms. Jenkins was asked to provide a definition of "reasonable methods" as used in her testimony.[16] The first sentence of the response stated, "[t]here is no one 'reasonable method' used by all Missouri LDCs."

Q. EVEN THOUGH STAFF HAS ACKNOWLEDGED A "RANGE OF REASONABLENESS" WITH REGARD TO LDC ACTIONS, DOES MS. JENKINS' TESTIMONY IN THIS PROCEEDING CONSIDER THIS ISSUE?

A. No. In fact, Ms. Jenkins' proposed design day demand analysis has basically identified an *exact* amount of pipeline capacity that MGE will require under extreme cold weather conditions in a future year. In addition, Ms. Jenkins has implied that her demand estimate is the only factor that is required when making a capacity decision since she does not consider any other factors in her direct testimony that would be important for a LDC to consider when purchasing capacity.

Q. PLEASE DISCUSS THE THIRD ASPECT OF PRUDENCE YOU IDENTIFIED ABOVE.

A. The third important point regarding a determination of prudence is the need to define and communicate the minimal level of acceptable behavior to the utility with sufficient time

[16] Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 2. ("...reasonable methods to determine the maximum amount of gas...")

for the utility to reasonably meet the defined standard. This aspect is of particular importance. As discussed in the rebuttal testimony of MGE Witness Kirkland, Staff provided guidance to MGE in 1996, 1997, and 1998 that MGE was planning for and acquiring capacity in an "adequate" manner.[17] In 2000, Staff provided feedback to MGE that there were "no concerns" at that time.[18] Thus, Staff stated four times over a course of five years that MGE performed its reliability analysis in an adequate manner and that Staff had no concerns. This point is particularly germane to the decisions MGE made regarding capacity additions.

The decision to acquire pipeline capacity is one of the most fundamental LDC responsibilities that has emerged since the unbundling of the pipeline merchant function through FERC Order Nos. 380, 436 and 636. The process to analyze, negotiate, construct, and put into service pipeline facilities is complex and has a long lead time. This is why MGE analyzes capacity decisions over a period of years and cannot focus on one or two immediate years alone. Prior to making the decisions that Staff is now, in hindsight, saying were imprudent, MGE received no specific criticism of its planning process regarding the design day forecast and the level of capacity. Therefore, as noted in the rebuttal testimony of MGE Witness Kirkland, MGE not only had commercial confidence in its Southern Star and Pony Express decisions, but also regulatory affirmation from Staff with respect to the MGE planning process at the time of the Southern Star decision.

[17] Staff's Recommendations in Case No. GO-96-243, Missouri Gas Energy's Reliability Report dated June 28, 1996, May 30, 1997, and May 28, 1998.

[18] Staff Recommendation in Missouri Gas Energy's 1998-1999 Actual Cost Adjustment Filing, August 1, 2000.

Ms. Jenkins' approach of focusing purely on forecasting demand for a discrete point in time (i.e., 2005/2006) not only ignores all the other influences on capacity decisions, but also minimizes the overarching reliability responsibility of the LDC in the post-FERC Order No. 636 environment.

Q. IN YOUR OPINION, BASED SIMPLY ON THE THREE CRITERIA OF PRUDENCE DESCRIBED ABOVE, HAS STAFF PROVIDED EVIDENCE OF IMPRUDENCE IN THIS PROCEEDING?

A. No. In my opinion, Staff has not met any of the three criteria for a finding of imprudence discussed above. First, Staff has not relied upon the information and circumstances that were available at the time of the decisions that Staff has indicated were imprudent. Second, Staff has not demonstrated that MGE's actions and decisions were not within a reasonable or generally-acceptable range of behavior. Lastly, Staff did not define and communicate to MGE that there was an issue with its capacity planning process, and in fact, reviewed and approved the process relied upon by MGE for a number of years prior to the ACA periods in question in this proceeding.

IV. PROBLEMS WITH MS. JENKINS' PROPOSED DESIGN DAY DEMAND ANALYSIS

Q. PLEASE STATE THE OBJECTIVE OF A DESIGN DAY DEMAND FORECAST.

A. As noted in my direct testimony, the objective of a design day demand forecast is to project or estimate the level of demand that MGE will experience under extreme weather conditions over a specified forecast horizon. As discussed in the direct and rebuttal

testimony of MGE Witness Kirkland, the design day demand forecast is but one of the factors considered in the capacity acquisition process.

Q. IN YOUR DIRECT TESTIMONY, YOU HIGHLIGHTED VARIOUS PROBLEMS WITH STAFF'S PROPOSED DESIGN DAY DEMAND ANALYSIS. ARE THERE ADDITIONAL ISSUES WITH STAFF'S ANALYSIS THAT SHOULD BE NOTED?

A. Yes. As discussed in my direct testimony, there are five primary components of a design day forecast.[19] In addition to the issues that I have already raised in my direct testimony, there are additional issues with Staff's analysis that need to be addressed regarding three of these components: (i) the calculation of design day weather; (ii) the calculation of baseload demand, i.e., the non-temperature sensitive demand; and (iii) the calculation of heatload demand, i.e., temperature sensitive demand.

Design Day Weather

Q. WHAT IS THE PROBLEM WITH STAFF'S CALCULATION OF DESIGN DAY WEATHER NOTED IN YOUR DIRECT TESTIMONY?

A. As noted in my direct testimony, Staff's approach to calculating design day weather produces an inconsistency in the level of reliability across MGE's service territories. Specifically, under Staff's proposed approach for determining design day weather, Staff would have MGE plan its capacity portfolio to provide Kansas City and St. Joseph

[19] Direct Testimony of John J. Reed, Case Nos. GR-2002-348 and GR-2003-0330, p. 23.

customers with sufficient protection to meet a 1-in-87 year cold event, while customers in Joplin would only be covered for a 1-in-25 year event.

Q. IS THERE ANYTHING IN MS. JENKINS' DIRECT TESTIMONY THAT WOULD MAKE YOU CHANGE YOUR CONCLUSION?

A. No.

Q. DOES STAFF INDICATE THAT ITS PROPOSED DISALLOWANCE IS RELATED TO THE SELECTION OF HDD LEVEL UTILIZED BY MGE FOR FORECASTING DESIGN DAY DEMAND?

A. Yes, Staff has stated that the selection of the HDD level is material in Staff's disallowance.[20] Specifically, Staff has suggested that if MGE utilized 81.5 HDD instead of the 85 HDD in the 2001/2002 Reliability Report, the Staff disallowance would be lower.

Q. PLEASE SUMMARIZE STAFF'S WEATHER ANALYSIS AND COMPARISON.

A. In Ms. Jenkins' direct testimony at pages 12-19, she reviews the weather utilized by MGE in the 2001/2002 and 2002/2003 Reliability Reports and compares that to the weather utilized in the March 2004 Demand Supply Study. Her stated conclusion from this analysis is that "...the difference of ** ** dekatherms caused simply by

[20] Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 17.

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selecting a different peak HDD accounts for 64% of Staff's recommended excess capacity disallowance for Kansas City and St. Joseph."[21]

Q. IS THE COMPARISON THAT MS. JENKINS IS TRYING TO MAKE BETWEEN MGE'S AND STAFF'S DESIGN DAY WEATHER SPECIFICATION RELEVANT IN THIS PROCEEDING?

A. No. Ms. Jenkins has tried to imply that MGE's use of a higher design day weather specification (i.e., 85 HDDs) in its analysis during the 2001/2002 and 2002/2003 ACA periods has resulted in a larger disallowance proposed by Staff. However, the fact that MGE utilized a different design day weather specification than proposed by Staff in this proceeding is irrelevant.

As discussed in my direct testimony, I conducted an independent analysis to forecast design day demand. In that analysis, I utilized a design day weather specification of 81.9 HDDs for the Kansas City and St. Joseph regions, which represented a 1-in-100 probability standard.[22] In other words, the design day weather specification utilized in my analysis for Kansas City/St. Joseph was only 0.4 HDDs (i.e., 81.9 HDDs minus 81.5 HDDs) different than Staff's proposed design day weather specification. However, the results of my independent analysis for all three regions, as shown on Schedule JJR-8 attached to my direct testimony, produced a forecasted demand for 2005/2006 of ** ** MMBtu, or a design day demand estimate that was not materially different

[21] Ibid, p. 19.

[22] For the Joplin region, I utilized the same 1-in-100 probability standard, which resulted in a design day weather specification of 76.3 HDDs as compared to Staff's proposed design day weather specification of 72.1 HDDs.

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than the design day demand forecast conducted by MGE during the 2001/2002 and 2002/2003 ACA periods. Therefore, the fact that MGE utilized a different design day weather specification in its analysis is ultimately irrelevant, since I have conducted an independent design day demand analysis that utilized a design day weather specification almost the same as Staff, yet have forecasted demand that is not materially different than the demand originally forecast by MGE.

Baseload Demand

Q. IS THERE A PROBLEM WITH THE BASELOAD DEMAND ESTIMATE THAT STAFF PROPOSED IN ITS DESIGN DAY DEMAND FORECAST?

A. Yes. As described in my direct testimony, Staff's approach to calculating baseload demand produced nonsensical results. For example, Staff projected that MGE's baseload demand for the Kansas City service territory[23] is ** ** MMBtu.[24] However, as shown on Schedule JJR-6 attached to my direct testimony, the baseload demand for MGE's Kansas City service territory (i.e., the daily average of demand for July and August) was approximately ** ** MMBtu using a three-year average, and ** ** MMBtu using a four-year average. In other words, Ms. Jenkins is suggesting that MGE's winter baseload demand (i.e., demand that is not temperature sensitive and will not fluctuate with changes in temperature) is one-half of MGE's actually-experienced summer baseload demand. This result is illogical and casts serious doubt on Ms. Jenkins' statistical approach and the reasonableness and the validity of her results.

[23] The Kansas City region represents approximately 80% of MGE's total customers and approximately 80% of forecasted peak day load.

[24] See also Staff Response to MGE Data Request No. 178(c).

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Q. HAS MS. JENKINS PROVIDED ANY SUPPORT FOR THE ILLOGICAL BASELOAD DEMAND CALCULATION IN HER DIRECT TESTIMONY?

A. No. Although Ms. Jenkins defines baseload demand as "...usage that would not change with weather"[25], she also suggests that due to "customer habits" baseload demand could be different for the summer and winter.[26] However, Ms. Jenkins provides absolutely no support for her contention, and simply suggests that the differences are due to "customer habits". Ms. Jenkins then faults MGE for not considering whether baseload is different in the winter versus the summer, even though she has not offered any evidence that this is a consideration worth analyzing.[27]

Q. HOW HAS MGE HISTORICALLY CALCULATED BASELOAD DEMAND FOR PURPOSES OF FORECASTING DESIGN DAY DEMAND?

A. Since MGE first filed a Reliability Report in 1996, MGE has utilized the simple average of the July and August daily demand data to calculate baseload demand.[28] In addition, MGE continues to calculate baseload demand on this basis. Since the months of July and August are generally the months with no HDDs, the observed actual demand will be representative of demand that does not change with temperature, i.e., non-temperature sensitive demand.

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[25] Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 19.

[26] Ibid, p. 19.

[27] Ibid, p. 19-20.

[28] Direct Testimony of David N. Kirkland, Case Nos. GR-2002-348 and GR-2003-0330, Schedule DNK-2, p. 000004.

As I pointed out in my direct testimony, this method for calculating baseload demand is consistent with the definitions of baseload demand relied upon by others in the industry. For example, the American Gas Association,[29] the New York Public Service Commission,[30] and Laclede Gas[31] all have consistent definitions of baseload demand. In addition, the response to Staff Data Request No. 167 provides a list of several other LDCs that use a consistent definition.

Q. HAS STAFF PREVIOUSLY REVIEWED AND ACCEPTED MGE'S APPROACH TO CALCULATING BASELOAD?

A. Yes. Specifically, Staff reviewed the Reliability Reports filed by MGE in 1996, 1997, and 1998, and then provided feedback to MGE that its approach to projecting design day demand was adequate.[32] In other words, MGE calculated baseload demand throughout this period of time based on the average daily load during the months of July and August (which is consistent with the calculation of baseload demand in my design day demand calculation), and Staff never indicated that such calculation was an issue. Moreover, as noted earlier, Staff indicated that there were no concerns regarding MGE's peak day estimates in 2000, either.[33]

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[29] See, e.g., AGA at www.aga.org: Natural Gas Glossary ("a given consumption of gas remaining fairly constant over a period of time, usually not temperature sensitive").

[30] See, e.g., New York State Public Service Commission: Gas Glossary at www.dps.state.ny.us/glossary.html#A ("A given sendout of gas which remains fairly constant over a period of time. Base load demands are not used in calculating space heating requirements since they do not vary with changes in temperature.")

[31] The Laclede Gas website definition of baseload demand had the same definition as the NYPSC.

[32] As noted in my direct testimony, design day demand and peak day demand were utilized interchangeably in these previously filed reliability reports.

[33] Direct Testimony of David N. Kirkland, Case Nos. GR-2002-348 and GR-2003-0330, Schedule DNK-5, p. 000003.

Therefore, not only does Staff's proposed baseload demand estimate produce nonsensical results, it is disingenuous of Staff to suggest that MGE's approach to calculating baseload demand, which it has previously reviewed and approved, may somehow not be appropriate now, particularly when Staff has provided no evidence to support such an assertion.

Heatload Demand

Q. PLEASE DESCRIBE THE FLAW WITH STAFF'S APPROACH TO ESTIMATING HEATLOAD DEMAND THAT YOU IDENTIFIED IN YOUR DIRECT TESTIMONY.

A. As noted in my direct testimony, Staff's proposed approach to calculating heatload demand suffers from a fundamental flaw in that its regression equation was premised on input data that was not representative of the data that was to be forecasted with the regression equation, i.e., demand on a design winter day. Rather, Staff relied upon demand data for all 151 winter days of each year in its data set, and as such, included both warm and cold winter days in its regression analysis as opposed to just winter days most reflective of design day conditions.

Q. AFTER REVIEWING MS. JENKINS' DIRECT TESTIMONY, DO YOU CONTINUE TO BELIEVE THAT STAFF'S PROPOSED DESIGN DAY DEMAND ANALYSIS IS FATALLY FLAWED?

A. Yes. There are two points from Ms. Jenkins' direct testimony that further highlight the problems with Staff's proposed estimate of heatload demand, and thus in turn, its design day demand analysis. Specifically: (i) the rationale utilized by Ms. Jenkins' to select the regression equation Staff utilized to estimate demand is not supportable or based on sound analysis; and (ii) when compared to actual demand experienced on MGE's system, Ms. Jenkins' proposed demand equation significantly under-predicts demand, and such days are not even representative of design day demand conditions.

Q. FIRST, IN PREPARING HER ANALYSIS, DID MS. JENKINS DEVELOP AND CONSIDER DIFFERENT REGRESSION EQUATIONS?

A. Yes, in the preparation of her design day demand forecast, Ms. Jenkins developed four different regression equations to estimate demand, one of which was ultimately relied upon in the calculation of Staff's proposed disallowance. For purposes of my testimony herein, I have referred to these as Staff Regression Equations "A" through "D"[34]:

Staff Regression Equation "A": Based on four years of winter demand and HDD data and is the recommended Staff approach;

Staff Regression Equation "B": Based on four years of year-round demand and HDD data;

Staff Regression Equation "C": Based on two years of winter demand and HDD data; and

Staff Regression Equation "D": Based on demand and HDD data associated with all days in the past four years with 30 HDD or higher.

[34] Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 21.

In her direct testimony, Ms. Jenkins discussed the results of the four different regression equations and then explained why she utilized Regression Equation "A", i.e., the equation based on four years of winter demand and HDD data, for purposes of determining her proposed disallowance.

Q. WHAT SUPPORT DID MS. JENKINS OFFER IN HER DIRECT TESTIMONY FOR THE SELECTION OF REGRESSION EQUATION "A" AS THE APPROPRIATE EQUATION UPON WHICH TO ESTIMATE DEMAND?

A. To support Regression Equation "A" over Regression Equation "B", Ms. Jenkins' stated that utilizing four years of winter-only demand data (i.e., Regression Equation "A") instead of four years of annual demand data (i.e., Regression Equation "B") produced a more conservative estimate. Specifically, Ms. Jenkins stated:

> It [i.e., the winter-only demand data] results in a higher estimate of the capacity requirements than the review of the daily data for all months (includes data for summer months). This is expected because the heat load factor and base load factor may be different when the seasons change because of differences in customer usage patterns for warm weather versus cold weather…The higher estimate of capacity based on analysis of daily winter data [i.e., Staff's Regression Equation "A"] is a more cautious number to use in determining the capacity required for a peak day than that which would be estimated using a year round daily usage [i.e., Staff's Regression Equation "B"]. (clarification added) (Ibid., p. 21)

Staff's Regression Equation "B" produced a design day demand estimate for Kansas City of ** ** MMBtu, while Staff's Regression Equation "A" that included four years of winter-only demand and HDD data produced a design day estimate of ** ** MMBtu.

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Q. WHAT EVIDENCE DID MS. JENKINS PROVIDE TO SUPPORT THE DISMISSAL OF REGRESSION EQUATIONS "C" AND "D"?

A. To support the dismissal of Staff Regression Equation "C", Ms. Jenkins stated that four years of winter-only demand data was utilized instead of two years of winter-only demand data since "[t]here is a concern that the winter of 2000/2001, an extremely cold winter, may have caused some customers to temporarily cut back on usage, and this could be part of the reason for the lower estimate of natural gas requirements."[35] Specifically, the winter-only data for two years (i.e., Staff Regression Equation "C") produced a Kansas City design day estimate of ** ** MMBtu, which as noted earlier, is slightly lower than the ** ** MMBtu produced by the regression equation ultimately relied upon by Staff.

To support the dismissal of Staff Regression Equation "D", Ms. Jenkins indicated that the R-squared statistic for the regression analysis utilizing only demand and HDD data from days with 30 HDDs or more (i.e., Staff Regression Equation D) was lower than the R-squared statistic for Staff Regression Equation "A". Unlike Staff Regression Equations "B" and "C" that produced design day demand estimates lower than Regression Equation "A" that was relied upon by Staff, Regression Equation "D" produced a design day estimate for Kansas City of ** ** MMBtu, or an estimate higher than Regression Equation "A".

[35] Ibid, p. 22.

Q. IS THE RATIONALE THAT MS. JENKINS HAS RELIED UPON TO SELECT A REGRESSION EQUATION APPROPRIATE?

A. No. Ms. Jenkins' "analysis" of evaluating different regression equations to select the most appropriate equation for projecting design day demand is flawed. As stated numerous times in my direct testimony, the objective of a design day demand forecast is to project firm demand under extreme cold weather conditions. The fact that one regression analysis based on a particular data set (i.e., winter-only demand and HDD data) produced a higher result than a regression analysis based on other data (i.e., annual demand and HDD data) is not a rationale for selecting one equation over another, but rather simply a comparison of results.

Simply stated, Ms. Jenkins developed alternative regression equations using the available data, compared the results, and then selected what she considered to be the "best" equation, without considering that the universe of regression equations she was considering was incorrect. In other words, Ms. Jenkins completely ignored the fundamental problem with all of her proposed regression equations, i.e., there are data limitations regarding regression analysis, and none of the four regression equations that she evaluated sufficiently considered those limitations.

Q. PLEASE DESCRIBE THE FUNDAMENTAL PROBLEM WITH STAFF'S APPROACH.

A. The most important step in regression analysis is to properly define the objective so an appropriate dataset can be developed for the analysis. Again, the objective of a design

day demand forecast is to estimate the firm demand that the LDC will experience under extreme cold weather conditions. However, Staff does not properly define the objective, and thus, the results of Staff's analysis do not adequately reflect the objective of trying to forecast design day demand. Staff's response to Data Request No. 185(b) highlights the problem. Specifically, in that response, Staff stated:

> The winter daily data analysis is used to quantify a reasonable method for estimating **winter usage**. In conjunction with the peak cold day selection, this analysis is used to estimate capacity required for a peak cold day." (Emphasis added) (Staff Response to MGE Data Request No. 185(b), Case Nos. GR-2002-348 and GR-2003-0330)

As can be seen in the data response, Staff's improperly defined the objective as estimating *winter usage* that could then be applied to the design day weather specification, as opposed to estimating the *design day usage* that would then be applied to the design day weather specification. As described above, reliance on winter usage, or more properly defined as average winter day usage, clearly does not comport with the objective of a design day demand forecast. In other words, through her reliance on demand and HDD data for all 151 winter days for four winters, Ms. Jenkins assumed that the heatload demand per HDD on an **average** winter day, as opposed to a **design** winter day, when applied to the number of HDDs associated with design day weather, will produce a reasonable estimate for design day demand. Thus, Ms. Jenkins' analysis incorrectly assumed that MGE's heatload demand per HDD (also known as the heatload demand factor) would be the same regardless of whether it was an average winter day or a design winter day.

Q. DOES MGE HAVE ANY ACTUAL DESIGN DAY DEMAND DATA AVAILABLE THAT CAN BE UTILIZED TO FORECAST FUTURE DESIGN DAY DEMAND?

A. No. As described in my direct testimony, actual demand data associated with extreme cold weather conditions (i.e., design day weather) is simply not available, as MGE has not experienced a design day HDD during the period for which daily demand data (i.e., 1997 to 2001) has been collected. In fact, the three coldest days experienced in MGE's Kansas City service territory over the 1997/1998 to 2000/2001 time period were 17 to 22 HDDs below Staff's proposed design day weather standard of 81.5 HDD. Specifically, in the Kansas City service territory, MGE experienced a 65 HDD occurrence on January 4, 1999, and a 60 HDD occurrence on January 3, 1999 and January 1, 2001.

Q. EVEN THOUGH MGE HAS NOT EXPERIENCED A DESIGN DAY EVENT IN MANY YEARS, IS IT APPROPRIATE FOR STAFF TO UTILIZE ALL 151 DAYS OF THE WINTER SEASON FOR ITS REGRESSION EQUATION?

A. Absolutely not. Regardless of whether a design day has been experienced on MGE's system, Staff's regression equation improperly relied on a data set that included both warm and cold days to project design day demand. Specifically, for Kansas City, Staff relied upon demand and HDD data associated with approximately 600 winter days (i.e., four years of daily winter data) to develop its estimate of design day demand. However, this data set included demand data associated with temperatures at or above 65 degrees Fahrenheit. As a result, while the maximum HDD level in Staff's data set was 65 HDDs, the average (or mean) level of HDDs associated with Staff's data set was 28 HDD.

Q. DOES THAT PRESENT A PROBLEM FROM A MATHEMATICAL OR STATISTICAL PERSPECTIVE?

A. Yes. In general, a regression equation will perform best within the bounds of the data utilized to develop that equation.[36] This issue has two implications for Staff's regression results and associated design day demand forecast. First, for data points that are within Staff's data set (e.g., demand associated with a 60 HDD) but far away from the mean associated with Staff's regression equation (i.e., 28 HDDs), the more variability there will be in the regression results. In other words, on days when the actual HDDs are much higher or lower than 28 HDDs (i.e., the mean of Staff's proposed regression equation data set), it is more likely that Staff's regression equation will produce results that differ from the actual demand observed. Second, and more importantly, since the design day weather of 81.5 HDD that Staff has proposed is not even in the data set that it has relied upon for its regression equation, and is so far from the mean of 28 HDDs for that data set, the variability between the predicted value and the actual value will likely be greater than the variability within the actual data set.[37,38] To better illustrate this point, I have superimposed the mean of Staff's data set and the mean of the data set used in my design day demand analysis onto Schedule JJR-7 which was attached to my direct testimony. This is shown as Schedule JJR-9 attached hereto. As shown in Schedule JJR-9, the Staff

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[36] Douglas C. Montgomery, Elizabeth A. Peck and G. Geoffrey Vining, Introduction to Linear Regression Analysis, p. 5. ("Generally, regression equations are valid only over the region of the regression variables contained in the observed data.").

[37] Ibid, p. 36. ("...the further the x-value is from the center of the data the more variable our estimate...Furthermore, the farther we move away from the original region of x-space, the more likely it is that equation or model error will play a role in the process.").

[38] Damodar Gujarati, Essentials of Econometrics, 2nd ed., p. 186. ("One should exercise great caution in extrapolating the historical regression line to predict the mean value of Y associated with any X that is far removed from the sample mean of X.").

mean is not only well below the design day HDD of 81.5, but is also well below the mean of the data set I utilized in my design day demand analysis.

Q. WHAT IS THE IMPACT ASSOCIATED WITH THESE IMPLICATIONS ON MS. JENKINS' PROPOSED REGRESSION EQUATION?

A. As shown on Schedule JJR-10, column (e), which was prepared under my supervision, Ms. Jenkins' proposed regression equation for Kansas City would have under-predicted the actual demand on all twelve of the days that I have utilized in developing my design day demand equation, i.e., each of the three highest demand days that were also in the top ten coldest days over the winters of 1997/1998 through 2000/2001. As shown on Schedule JJR-10, column (e), the actual demand on all twelve of those days was greater than Staff's predicted demand based on the level of HDDs experienced on each of those days. Of particular importance is the magnitude of the under-prediction. Even after accounting for Staff's proposed reserve margin, Ms. Jenkins' regression equation would have under-predicted demand on five of the twelve observations (denoted by shading on Schedule JJR-10). Specifically, for these observations, Ms. Jenkins' proposed design day demand regression equation would have under-predicted the actual demand by at least ** ** MMBtu, with the under-prediction ranging all the way up to over ** ** MMBtu.

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Q. PLEASE COMMENT ON THE SIGNIFICANCE OF THESE FIVE OBSERVATIONS IN WHICH THERE IS A CONSIDERABLE UNDER-PREDICTION.

A. As illustrated in Ms. Jenkins' direct testimony, Staff proposed a reserve margin of ** ** MMBtu for the Kansas City region.[39] Even if that reserve margin is applied to the five observations where Staff's regression equation would have considerably under-predicted demand, there would still exist an under-prediction of demand. In other words, even after the application of what Staff considers to be an appropriate reserve margin, Staff's proposed regression equation would not have adequately predicted demand. Moreover, as shown on Schedule JJR-10, the demand and HDD levels at which Staff's regression equation would have under-predicted demand were not even close to design day demand conditions. For example, the days in which Staff's proposed regression equation would have under-predicted demand ranged from 46 HDDs to 60 HDDs, or levels significantly below the 81.5 HDDs that Staff has proposed as a design day weather standard.

Q. CAN NATURAL GAS DEMAND BE DIFFERENT ON DAYS WITH THE SAME NUMBER OF HDDs?

A. Yes. Natural gas demand on a given day is influenced by many variables, and as such, there can be a range of demand experienced by a LDC even on days with the same number of HDDs. As shown in Schedule JJR-10, there are two observations with 60 HDDs, but the actual demand on those days is ** ** MMBtu and ** **

[39] Direct Testimony of Lesa A. Jenkins, Case Nos. GR-2002-348 and GR-2003-0330, p. 28.

MMBtu (see column (c) and lines 10 and 6, respectively). In addition, as shown on Schedule JJR-10, there is an observation with 65 HDDs, yet the demand on that particular day was ** ** MMBtu (see column (c), line 4), which is lower than the demand experienced on one of the 60 HDD observations.

Q. IF STAFF'S UNDER-PREDICTION ON THE TWO 60 HDD DAYS JUST DISCUSSED WAS EXPRESSED AS A HEATLOAD FACTOR AND THEN APPLIED TO THE DESIGN DAY WEATHER, WHAT WOULD BE STAFF'S UNDER-PREDICTION?

A. Schedule JJR-11 provides an estimate of what Staff's under-prediction for the Kansas City region would be for a design day based on the performance of Staff's proposed regression equation for the two days which experienced 60 HDDs, i.e., January 3, 1999 and January 1, 2001. As can be seen on Schedule JJR-11, using January 3, 1999 as the example, the actual demand on that day was ** ** MMBtu. If Staff's proposed baseload demand estimate of ** ** MMBtu is subtracted from this total demand, this results in an estimated heatload demand for that day of ** ** MMBtu. As shown on line 5, this would result in a heatload factor of ** ** MMBtu. Conversely, Staff has proposed a heatload factor of ** ** MMBtu in its design day demand analysis. Thus, Staff's proposed regression equation would under-estimate the heatload factor by ** ** MMBtu/HDD. Applying Staff's under-estimation of the heatload factor, i.e., ** ** MMBtu/HDD to the design day weather of 81.5 HDDs, would result in a demand under-prediction for a design day of ** ** MMBtu for the Kansas City region. Even after taking into account Staff's proposed reserve margin

of ** ** MMBtu, this would still result in Staff under-estimating design day demand by ** ** MMBtu. Expressed another way, if MGE had relied on Staff's proposed design day demand regression equation, an estimated capacity shortfall of ** ** MMBtu may have occurred on January 3, 1999.

Q. ARE THE ESTIMATED CAPACITY SHORTFALL FIGURES THAT ARE PRESENTED IN SCHEDULE JJR-11 INTENDED TO REPRESENT WHAT ACTUALLY WOULD HAVE OCCURRED ON THOSE PARTICULAR DAYS IF MGE HAD RELIED UPON STAFF'S PROPOSED DESIGN DAY DEMAND ANALYSIS?

A. No. The results of Schedule JJR-11 are not intended to represent what may have actually occurred if Staff's proposed regression equation were relied upon to forecast design day demand capacity requirements. However, Schedule JJR-11 is meant to demonstrate that, even on days experiencing the same exact level of HDDs, there is a wide variation in demand that can be experienced. In fact, as shown on Schedule JJR-11, using Staff's design day demand forecast would produce an estimated under-prediction of ** ** MMBtu for January 3, 1999, yet produce an estimated under-prediction of ** ** MMBtu for January 1, 2001. Thus, the point of this analysis is to highlight that predicting demand on a design day is not a simple and straightforward process as Ms. Jenkins seems to imply in her direct testimony.

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V. ASYMMETRICAL RISKS ASSOCIATED WITH CAPACITY DECISIONS

Q. DOES MGE BENEFIT FROM HAVING TOO MUCH CAPACITY?

A. No. The cost of upstream pipeline capacity is not in MGE's rate base, so it is not earning a return on capacity in its portfolio. Pipeline capacity is considered a gas cost expense rather than a rate base item. Therefore, MGE has no monetary incentive to contract for capacity in excess of its design day requirements. In fact, MGE has every incentive to minimize all costs that are passed through to customers to keep its service competitive with other sources of heating.

Q. WHAT ARE THE SAVINGS TO MGE'S CUSTOMERS IF MS. JENKINS' APPROACH TO DEMAND FORECASTING IS UTILIZED?

A. On page 37 of her direct testimony, Ms. Jenkins suggests that if MGE had performed its design day demand forecast using the techniques that she employed, each customer would save ** ** per year. Even if one were to agree that Ms. Jenkins' design day demand analysis were correct, ** ** per year is a very small insurance premium to pay to reduce the probability of not having enough capacity for firm customers.

Q. ARE THERE CONSEQUENCES IF AN LDC DOES NOT HAVE SUFFICIENT CAPACITY TO SERVE PEAK DAY DEMAND?

A. Yes. In Ms. Jenkins' direct testimony, the consequences of not having sufficient capacity are stated as follows: "If a company does not purchase enough capacity to provide for its customers needs on a peak day, there could be large penalties, operations problems, or

insufficient capacity to transport natural gas for firm customer (primarily residential and small commercial) requirements."[40]

Q. HAS STAFF DEVELOPED ANY ANALYSIS OR QUANTIFIED THE COST TO MGE'S CUSTOMERS IF THERE WAS INSUFFICIENT CAPACITY ON THE DESIGN DAY?

A. No. As I have indicated, other than demand forecasting, Staff has not considered any other issue with respect to capacity planning in this case.

Q. CAN THERE BE SERIOUS CONSEQUENCES ASSOCIATED WITH NOT HAVING SUFFICIENT PIPELINE CAPACITY TO MEET CUSTOMERS' DESIGN DAY DEMAND REQUIREMENTS?

A. Yes. As described in the direct testimony of MGE Witness Kirkland, there can be serious consequences associated with not having sufficient capacity to meet customers' design day demand requirements.

Q. PLEASE BRIEFLY DESCRIBE SOME OF THE POTENTIAL COSTS OF HAVING INSUFFICIENT CAPACITY.

A. Some of the potential costs of not having sufficient capacity available during a design day demand situation include:

1. Direct Costs: The actual costs incurred by the utility to shut down, re-light, and house the impacted residents; and

[40] Ibid, p. 2.

2. Indirect Costs: All customer-related costs associated with not having sufficient natural gas, including: the costs incurred due to residential house damages (e.g., water pipes freezing and bursting); commercial and industrial damage (e.g., water pipes freezing and bursting); loss of business and profits associated with shutdown; litigation costs; increased insurance costs; catastrophic costs (i.e., loss of life); and the long-term impact to future profitability of the LDC due to a perception of natural gas as an unreliable fuel.

Q. HAVE YOU PREPARED AN ANALYSIS OF THE COST OF A POTENTIAL OUTAGE DUE TO INSUFFICIENT CAPACITY ON A DESIGN DAY?

A. Yes. As just discussed, there are two broad categories of potential costs that an LDC could incur as a result of having insufficient capacity on the design day. My analysis considers both of these cost categories, but within the indirect cost category, my analysis focuses only on the residential and commercial damages and does not attempt to quantify the costs associated with other indirect costs. As such, my analysis would tend to be conservative and understate the potential indirect costs that would be incurred should MGE not have sufficient capacity to meet its customers' design day demand requirements. In addition, the analysis that I have conducted is for Kansas City, and does not include St. Joseph or Joplin. It should also be noted that my outage analysis is not intended to be an exact estimate of damages that would occur, but rather provides context with respect to the potential implications of not having sufficient capacity to meet firm customer demand in an extreme cold weather event. The details and associated assumptions for this outage analysis are provided on Schedule JJR-12.

Q. PLEASE DISCUSS THE ASSUMPTIONS YOU UTILIZED IN YOUR OUTAGE ANALYSIS.

A. There are three major assumptions that are necessary in the development of my outage analysis, each of which are detailed in Schedule JJR-12:

- The volume shortfall/number of customers impacted;
- The direct costs to safely relight the impacted customers; and
- The indirect costs related to the damages to residential and commercial customers' properties and/or businesses.

Q. PLEASE DISCUSS THE FIRST ASSUMPTION.

A. The first assumption in the outage analysis is to estimate the volume shortfall as a result of insufficient capacity, and then convert that estimated shortfall into a number of affected customers. As a proxy for the estimated volume shortfall, I have utilized the volume shortfall for January 3, 1999 as reflected on Schedule JJR-11, which was ** ** MMBtu. After estimating the volume shortfall, I next converted that estimated shortfall into a number of affected customers. Specifically, for the Kansas City region, residential customers represent approximately 70% of the total annual sales volume. Therefore, I assumed that 70% of the ** ** MMBtu shortfall would be allocated to residential customers and 30% to commercial customers. Assuming that on peak day an average residential customer consumes approximately 1.27 MMBtu, then the number of residential customers impacted by the shortfall would be ** **.[41] Using

[41] Shortfall volume equals ** ** MMBtu, of which 70% or ** ** MMBtu, is allocated to residential customers. Based on the assumed peak day consumption of 1.27 MMBtu, the number of residential customers impacted is calculated as ** ** MMBtu divided by 1.27 MMBtu, or ** ** customers, as shown on Schedule JJR-12, column (c) and line 8.

similar logic for the commercial customers would result in ** ** impacted commercial customers.[42]

Q. PLEASE DESCRIBE HOW YOU HAVE PROJECTED THE DIRECT COSTS ASSOCIATED WITH INSUFFICIENT CAPACITY.

A. The costs of returning customers to service encompasses the following three high-level steps. First, all of the customers that suffered an outage must be visited by a qualified and trained person to turn off the service(s) in a safe and proper manner so the system can be purged. Second, once the system has been purged, all of the impacted customers, on an individual basis, must be returned to service through a re-lighting process in which a qualified and trained person must go through the house or business and re-light pilot lights, at the same time making sure there are no leaks or open valves. Finally, once service is restored, the Company must monitor the area for any issues (e.g., leaks). The cost of the re-light process is assumed to be approximately ** ** per customer regardless of whether the customer is residential or commercial. Given the timeframe involved to re-light all the customers, I also assumed that a certain percentage of the residential customers would need to be housed and fed for up to two nights. All the cost estimates for the direct cost portion of this analysis were provided by MGE[43], but based on my experience, the numbers utilized are reasonable.

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[42] Shortfall volume equals ** ** MMBtu, of which 30% or ** ** MMBtu, is allocated to commercial customers. Based on the assumed peak day consumption of 3.83 MMBtu, the number of commercial customers impacted is calculated as ** ** MMBtu divided by 3.83 MMBtu or ** ** customers, as shown on Schedule JJR-12, column (d) and line 8.

[43] MGE Response to Data Request No. 0170 in Case No. GR-2003-0330.

Q. PLEASE DISCUSS THE THIRD ASSUMPTION IN YOUR OUTAGE ANALYSIS, i.e., THE QUANTIFICATION OF INDIRECT COSTS.

A. As one would expect, the damage associated with the inability to serve firm customers is the most costly issue to the LDC and the most difficult to quantify. Examples of this would include damages caused by water leakage due to the bursting of frozen water pipes and consequential damages such as lost revenue for affected commercial customers. The following assumptions were utilized to develop the indirect cost estimate for residential and commercial damages:

- An estimated percentage of residential/commercial customers that experienced damages;
- An estimated cost to replace and/or rebuild the damaged residential property;
- An estimate of lost revenue for the commercial establishments assumed to be have experienced an outage.

As shown in Schedule JJR-12, I have provided a range of scenarios with respect to the percentage of customers that experience damages and will receive some payment for their loss. I developed four different scenarios for the percent of interrupted customers that receive damage payments (i.e., 25%, 50%, 75%, and 100%). The damage payments for residential customers would consist of the cost to replace/rebuild/remodel the homes that sustained damage as a result of the outage (e.g., water damage). For commercial customers the damage payments would consist of lost revenue due to business closings.[44]

[44] Although commercial customers would also incur certain costs associated with replace/rebuild/remodel as a result of water damage, for purposes of this analysis, I have conservatively only included an estimate for lost revenue.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR OUTAGE ANALYSIS.

A. As shown in Schedule JJR-12, page 3 of 3 column (e) lines 14 and 17, the damage estimates for not having ** ** MMBtu of capacity for the Kansas City region range from approximately ** ** million to over ** ** million, depending on the percentage of customers assumed that sustain damages. On a per customer basis (using the total number of Kansas City region customers as of 2004), this is a range from approximately ** ** per customer to ** ** per customer, as shown on Schedule JJR-12, page 3 of 3 column (e) lines 19 and 22.

Q. DO YOU BELIEVE THIS ANALYSIS COVERS ALL THE COSTS THAT MGE WOULD POTENTIALLY INCUR AS A RESULT OF ON OUTAGE?

A. As discussed, there were three broad categories of costs that MGE could incur as a result of having insufficient capacity on design day, and my analysis only reviewed certain aspects within those cost categories. In addition, given the limited data regarding natural gas customer curtailments, I have been conservative with my assumptions. However, the results of the analysis provide context and quantification with respect to the cost of insufficient capacity.

Q. WHAT CONCLUSIONS CAN BE DRAWN FROM THE OUTAGE ANALYSIS YOU HAVE PROVIDED IN SCHEDULE JJR-12?

A. The primary conclusion from Schedule JJR-12 is that Ms. Jenkins' analysis fails to consider the significant risks that may be borne by MGE's customers if MGE does not contract for sufficient pipeline capacity to meet a design day. Specifically, the risks

associated with LDC capacity portfolios are not symmetrical, or in other words, the consequences of a LDC not having sufficient capacity to meet firm customers demand under extreme cold weather conditions are generally much more severe than the consequences associated with having too much capacity. Even if one assumed that Ms. Jenkins' design day demand analysis was valid, the benefits of MGE's overall capacity portfolio far outweigh the alleged excess costs. Thus, when those benefits are properly taken into consideration, she has failed to demonstrate there is harm to the ratepayers from MGE's capacity levels.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.