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November 14, 2003

Mr. Dale Hardy Roberts
Secretary/Chief Regulatory Law Judge
Missouri Public Service Commission
P.O. Box 360
Jefferson City, Missouri 65102

FILED[2]
NOV 14 2003
Missouri Public Service Commission

RE: Missouri Gas Energy
Case No. GR-2001-382

Dear Mr. Roberts:

Enclosed for filing on behalf of Missouri Gas Energy are the original and eight (8) copies of *Supplemental Rebuttal Testimony of Michael T. Langston.* The Schedule for the filing has been designated as "Highly Confidential" and is being filed under seal with the testimony. One copy of the public version of the testimony and schedule is also enclosed.

A copy of this filing is being provided to the General Counsel and Office of the Public Counsel.

Please see that this filing is brought to the attention of the appropriate Commission personnel. I thank you in advance for your assistance in this matter.

Sincerely,

BRYDON, SWEARENGEN & ENGLAND P.C.

By:

Dean L. Cooper

DLC/jar
Enclosures
cc: Doug Micheel Jeff Keevil Mac Ketchum
Tim Schwarz Rob Hack
Jim Deutsch Michael Langston

Exhibit No.:	
Issues:	Purchasing Practices: Storage
Witness:	Michael T. Langston
Sponsoring Party:	Missouri Gas Energy
Type of Exhibit:	Supplemental Rebuttal
Case No.:	GR-2001-382 et al.
Date Prepared:	November 14, 2003

MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NO. GR-2001-382

SUPPLEMENTAL REBUTTAL TESTIMONY OF

MICHAEL T. LANGSTON

Jefferson City, Missouri

November 14, 2003

NP

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Purchased Gas Adjustment Tariff Revisions to be Reviewed in its 2000-2001 Actual Cost Adjustment	)))	Case No. GR-2001-382
In the Matter of Missouri Gas Energy's Purchased Gas Cost Adjustment Factors to be Reviewed In its 1999-2000 Actual Cost Adjustment	)))	Case No. GR-2000-425
In the Matter of Missouri Gas Energy's Purchased Gas Cost Adjustment Factors to be Reviewed In its 1998-1999 Actual Cost Adjustment	)))	Case No. GR-99-304
In the Matter of Missouri Gas Energy's Purchased Gas Cost Adjustment Tariff Revisions to be Reviewed In its 1997-1998 Actual Cost Adjustment	)))	Case No. GR-98-167

AFFIDAVIT OF MICHAEL T. LANGSTON

STATE OF Texas)
) ss.
COUNTY OF Harris)

Michael T. Langston, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Supplemental Rebuttal Testimony in question and answer form, to be presented in the above case; that the answers in the foregoing Supplemental Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

MICHAEL T. LANGSTON

Subscribed and sworn to before me this 11th day of November 2003.

SUSAN M LOHMANN
NOTARY PUBLIC STATE OF TEXAS
EXPIRES
SEPTEMBER 24, 2004

Notary Public

My Commission Expires: September 24, 2004

SUMMARY

In her supplemental direct testimony, Staff Witness Jenkins has gone well beyond the scope of the supplemental portion of this proceeding and has revised the approach that she uses to evaluate MGE's storage utilization for the winter of 2000/2001. The reasons that Ms. Jenkins has advanced in support of her revisions, namely that a claimed "error" in her spreadsheet needed to be corrected and that "warmest month" demand estimates were needed for January, February and March 2000, are entirely without merit. Ms. Jenkins has made these revisions with absolutely no basis or support for doing so. As such, except for the portion of her supplemental direct testimony that actually addresses the defined scope of the supplemental phase of this proceeding, the Commission should disregard her supplemental direct testimony altogether.

If, however, the Commission does consider Ms. Jenkins' supplemental direct testimony and her significantly "revised" supplemental storage utilization approach, the Commission should ascribe no value to the analysis since it suffers from two fatal flaws. First, Ms. Jenkins' "revised" storage utilization plan is based upon MGE only utilizing 79% of its contracted storage capacity in a normal winter. Second, Ms. Jenkins' "revised" plan is based upon "warmest month" demand estimates that she developed that are simplistic, arbitrary and inaccurate.

Therefore, while Ms. Jenkins has continually tried to adjust her storage utilization proposal, neither her original storage utilization plan as presented in her direct testimony, her "revised" original plan in which she claims to correct the "error" in her spreadsheet, nor her "revised" supplemental storage plan is an appropriate or reasonable way of evaluating MGE's utilization of storage for the winter of 2000/2001. In contrast, MGE's witnesses have demonstrated in their direct, rebuttal, and surrebuttal testimony in this proceeding that its storage utilization practices were well within the range of reasonable and prudent conduct.

SUPPLEMENTAL REBUTTAL TESTIMONY OF

MICHAEL T. LANGSTON

Table of Contents

SUPPLEMENTAL REBUTTAL TESTIMONY OF

MICHAEL T. LANGSTON

CASE NO. GR-2001-382

NOVEMBER 14, 2003

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Michael T. Langston. My business address is Panhandle Energy, 5444 Westheimer Road, Houston, Texas 77056-5306.

Q. ARE YOU THE SAME MICHAEL T. LANGSTON THAT PREVIOUSLY SUBMITTED DIRECT, REBUTTAL, SURREBUTTAL AND SUPPLEMENTAL DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

INTRODUCTION

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL REBUTTAL TESTIMONY?

A. In her supplemental direct testimony, Staff Witness Jenkins has gone well beyond the scope of the supplemental portion of this proceeding and revised the approach that she uses to evaluate MGE's storage utilization for the winter of 2000/2001. The purpose of my supplemental rebuttal testimony is to address the numerous changes that Ms. Jenkins' has proposed in her "revised supplemental" storage utilization plan that she has relied

upon to develop her currently proposed storage disallowance in this proceeding.[1] In addition, I will comment on Ms. Jenkins' revised disallowance concerning the hedging issue as well.

Q. ARE YOU SPONSORING ANY SCHEDULES TO YOUR TESTIMONY?

A. Yes. I am sponsoring six different schedules. The first three schedules (i.e., Schedules MTL-37, MTL-38 and MTL-39) are copies of the workpapers Ms. Jenkins' utilized in preparation of her supplemental direct testimony that were provided to MGE. Schedule MTL-40 illustrates that the framework upon which Ms. Jenkins' bases her "revised supplemental" disallowance is erroneous since it assumes that MGE should only plan on utilizing 14 Bcf of its 17.8 Bcf of purchased storage capacity. Schedule MTL-41 shows the inaccuracy of the new "warmest month" demand regression that Ms. Jenkins relies on in her supplemental direct testimony. Finally, Schedule MTL-42 is an update of Schedule MTL-15 that was part of my direct testimony. Schedule MTL-15 has been updated on Schedule MTL-42 to show how the revised flowing supply amount that Ms. Jenkins has most recently proposed for November in her supplemental direct testimony would still result in MGE significantly over-scheduling first-of-month flowing supplies for November, which could have harmful operational and/or financial consequences.

Q. COULD YOU PLEASE SUMMARIZE YOUR SUPPLEMENTAL REBUTTAL TESTIMONY?

[1] In her supplemental direct testimony, Ms. Jenkins discusses three different storage utilization disallowance figures, although she is only supporting one of those proposals at the current time. Therefore, for ease of reference, Ms. Jenkins' analysis that was included as Schedule 13 of her direct testimony will be referred to as her "original" analysis, the analysis that produced the disallowance of approximately $2.5 million will be

A. In her supplemental direct testimony, Staff Witness Jenkins has gone well beyond the scope of the supplemental portion of this proceeding and has revised the approach that she uses to evaluate MGE's storage utilization for the winter of 2000/2001. The reasons that Ms. Jenkins has advanced in support of her revisions, namely that a claimed "error" in her spreadsheet needed to be corrected and that "warmest month" demand estimates were needed for January, February and March 2000, are entirely without merit. Ms. Jenkins has made these revisions with absolutely no basis or support for doing so. As such, except for the portion of her supplemental direct testimony that actually addresses the defined scope of the supplemental phase of this proceeding, the Commission should disregard her supplemental direct testimony altogether.

If, however, the Commission does consider Ms. Jenkins' supplemental direct testimony and her significantly "revised" supplemental storage utilization approach, the Commission should ascribe no value to the analysis since it suffers from two fatal flaws. First, Ms. Jenkins' "revised" storage utilization plan is based upon MGE only utilizing 79% of its contracted storage capacity in a normal winter. Second, Ms. Jenkins' "revised" plan is based upon "warmest month" demand estimates that she developed that are simplistic, arbitrary and inaccurate.

Therefore, while Ms. Jenkins has continually tried to adjust her storage utilization and hedging proposals, neither her original storage utilization plan as presented in her direct testimony, her "revised" original plan in which she claims to correct the "error" in her

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referred to as the "revised original" analysis, and the analysis that produced the disallowance that she is now supporting of approximately $2.9 million will be referred to as the "revised supplemental" analysis.

spreadsheet, nor her "revised" supplemental storage plan is an appropriate or reasonable way of evaluating MGE's utilization of storage or hedging for the winter of 2000/2001. In contrast, MGE's witnesses have demonstrated in their direct, rebuttal, and surrebuttal testimony in this proceeding that its storage utilization practices were well within the range of reasonable and prudent conduct.

NO BASIS FOR JENKINS' REVISED STORAGE UTILIZATION APPROACH

Q. WHAT WAS THE SCOPE AND PURPOSE OF THE SUPPLEMENTAL DIRECT AND REBUTTAL TESTIMONY, AS WELL AS THE ADDITIONAL HEARINGS IN THIS PROCEEDING?

A. Specifically, the parties agreed after the original hearings in this proceeding that the issues to be addressed in the supplemental direct and rebuttal testimony and discovery would be limited to three primary issues surrounding the proposed storage utilization disallowance:

1) MGE's 1999/2000 heating season delivered natural gas volumes;

2) the use of those volumes in the spreadsheet developed by Ms. Jenkins; and

3) MGE's low case scenario used by Ms. Jenkins.

In addition, the parties agreed that the supplemental testimony would also address the request for information made by Commissioner Gaw at the hearing regarding the percentage of monthly hedging (see Tr. pages 536-537).

Q. PURSUANT TO THE SCOPE ESTABLISHED FOR THE SUPPLEMENTAL TESTIMONY, DID MS. JENKINS REPLACE THE "WARMEST MONTH"

DEMAND ESTIMATE FOR NOVEMBER AND DECEMBER 2000 WITH THE WARM MONTH ACTUAL DEMAND OF NOVEMBER 1999 AND DECEMBER 1999?

A. Yes. Schedule MTL-37 is a copy of the workpapers to her supplemental direct testimony in which she has replaced her estimated "warmest month" demand for November and December 2000 with the actual demand for November 1999 and December 1999 pursuant to the scope established for the supplemental portion of this proceeding. With the exception of the replacement of these two numbers, Schedule MTL-37 is the same storage utilization analysis that Ms. Jenkins originally filed as Schedule 13 of her direct testimony and which resulted in a proposed $8,051,049 disallowance (referred hereafter as Ms. Jenkins' "original" storage utilization analysis).

Specifically, on Schedule MTL-37, Ms. Jenkins replaced the "warmest month" demand estimate for November and December 2000 that she previously relied upon with the actual demand for November and December 1999, i.e., the warmest and fourth warmest of each of those months, respectively, in the past 40 years. The two demand figures that have been replaced are shown on Schedule MTL-37, page 7, on line 86, in columns (c) and (e) and have been shaded for easy reference. After replacing the estimated demand amounts, Ms. Jenkins acknowledged in her supplemental direct testimony (see p. 7, line 21 to p. 8, line 1) that her proposed disallowance for storage utilization resulted in the same figure that MGE calculated using Ms. Jenkins' spreadsheets at the May 2003 hearings, or a disallowance of $182,159.

Q. IS THIS THE DISALLOWANCE FOR STORAGE UTILIZATION THAT MS. JENKINS IS NOW PROPOSING IN THIS PROCEEDING?

A. No, which is the very reason that my supplemental rebuttal testimony is necessary. Ms. Jenkins is not supporting a storage utilization disallowance of $182,159 because she has claimed in her supplemental direct testimony that there was an "error" embedded within Schedule 13 of her direct testimony that was ultimately utilized to calculate her proposed disallowance that was reflected on Schedule 8 of her direct testimony. Therefore, while Ms. Jenkins replaced the "warmest month" demand for November and December, she indicated that she also needed to correct this "error". Her "corrected" analysis produced a storage utilization disallowance of approximately $2.5 million. Her workpapers that reflect this $2.5 million disallowance are presented as Schedule MTL-38 and will hereafter be referred to as Ms. Jenkins' "revised original" analysis.

Q. IS MS. JENKINS NOW SUPPORTING A DISALLOWANCE FOR STORAGE UTILIZATION OF $2.5 MILLION?

A. No. In addition to fixing the "error" that she found in her spreadsheet, Ms. Jenkins also claimed that it was necessary to make numerous other revisions to her approach and the calculation of her proposed disallowance. These significant changes to her approach were well outside of the scope of the supplemental portion of this proceeding. In fact, Ms. Jenkins revised her proposal to make four additional changes to her approach and calculations – beyond the "error" correction noted above – which produced a storage utilization disallowance of approximately $2.9 million. These changes are discussed on pages 10 through 12 of her supplemental direct testimony. I have attached Ms. Jenkins'

workpapers that reflect this $2.9 million disallowance as Schedule MTL-39 and will hereafter refer to the analysis contained therein as Ms. Jenkins' "revised supplemental" analysis. It is the $2.9 million disallowance that results from her "revised supplemental" storage utilization analysis that she is now supporting.

Q. WAS THE "ERROR" THAT MS. JENKINS CORRECTED IN HER "ORIGINAL" STORAGE UTILIZATION ANALYSIS A MATHEMATICAL ERROR?

A. No. It is important for the Commission to understand that Ms. Jenkins' "error" was not a calculation error within her "original" storage utilization spreadsheet or that she had an incorrect link in the spreadsheet. Rather, Ms. Jenkins' "error" is the result of a **claimed** misapplication of the logic within her spreadsheet to have it conform to her perception of how storage should have been utilized. Ms. Jenkins was not correcting mathematical errors in her spreadsheet.

Q. PLEASE EXPLAIN THE "ERROR" THAT MS. JENKINS CLAIMED NEEDED TO BE CORRECTED IN HER SUPPLEMENTAL TESTIMONY.

A. The "error" that Ms. Jenkins has claimed was in her "original" analysis on Schedule 13 can be seen from the differences between Schedule MTL-37, which are her workpapers that resulted in a storage utilization disallowance of $182,159, and Schedule MTL-38, which are her workpapers that resulted in a storage disallowance of $2.5 million after the supposed "error" was corrected and no other adjustments had been made. Specifically, on Schedule MTL-37, page 7, line 83, Ms. Jenkins' "original" analysis revised the daily

flowing supply figure for November downward from 162,749 MMBtu/day (shown in column (c)) to 142,151 MMBtu/day (shown in column (d)). Ms. Jenkins' approach adjusted the November flowing supply amount to 142,151 MMBtu/day because this represented the "warmest month" demand for November (as it actually occurred in November 1999). However, in Schedule MTL-38, page 7, line 83, Ms. Jenkins does not make the same adjustment to the flowing supply figure from column (c) to column (d). Ms. Jenkins does not adjust the flowing supply amount downward for November to reflect the "warmest month" demand, but instead holds the flowing supply figure at 162,749 MMBtu/day, which is significantly higher than the "warmest month" demand for November.

Q. WHAT BASIS OR SUPPORT HAS MS. JENKINS PROVIDED FOR CLAIMING THAT HER "ORIGINAL" STORAGE UTILIZATION ANALYSIS CONTAINED AN "ERROR"?

A. In her supplemental direct testimony, Ms. Jenkins provided the following explanation of why her "original" storage utilization analysis was incorrect:

> Staff found that the calculations built into the spreadsheet did not properly revise the Company's first of month (FOM) nominations. This correction was necessary because Staff's assumption was that the Company's first of month (FOM) nominations should cover warmest month requirements – adjusted for deviations from planned storage inventory levels. **Staff did not state that FOM nominations must exactly equal the warmest month requirements. Staff stated that FOM nominations must at least cover warmest month requirements** – adjusted for deviations from planned storage inventory levels. (emphasis added) (Supplemental Direct Testimony of Lesa A. Jenkins, Case No. GR-2001-382, et. al., p. 7, ll. 6-13).

In other words, Ms. Jenkins is now trying to make the distinction that she never stated that her recommended first-of-month flowing supply figures should **equal** the "warmest month" demand, but rather must **at least cover** the "warmest month" demand. Therefore, in her analysis shown on Schedule MTL-38, Ms. Jenkins now claims that her proposed November daily flowing supply amount should not have been adjusted from 162,749 MMBtu/day to 142,151 MMBtu/day (the "warmest month" demand for November) because the proposed flowing supply amount of 162,749 MMBtu/day *at least covers* the "warmest month" demand of 142,151 MMBtu/day. In other words, Ms. Jenkins is now attempting to claim that her "original" analysis should not have based the flowing supply amount for November on the "warmest month" demand, but rather on a calculation involving normal heating degree days since this amount (i.e., 162,749 MMBtu/day) at least covered the "warmest month" demand.

Q. DID MS. JENKINS ACTUALLY MAKE THIS DISTINCTION IN HER DIRECT TESTIMONY THAT FLOWING SUPPLIES SHOULD "AT LEAST COVER" RATHER THAN "EQUAL" THE WARMEST MONTH DEMAND?

A. Absolutely not, and in fact, quite the contrary. Ms. Jenkins' direct testimony does not describe her proposed storage utilization approach for determining November flowing supplies as "at least covering" the "warmest month" demand. In fact, the reasoning that Ms. Jenkins' has utilized in her supplemental direct testimony for claiming that there was an "error" actually contradicts her direct testimony. In her direct testimony, Ms. Jenkins stated:

> Staff believes that it is reasonable to expect the Company to have sufficient "assigned term supplies" – planned first-of-month (FOM)

> flowing supplies – scheduled to cover warm weather requirements for November through January, and that these would be adjusted beginning in December if the Company had withdrawn more or less natural gas from storage than planned. This means that when the month experiences heating degree days that are the warmest for that month, flowing supplies would cover the requirements. **However, storage would be used when the weather is colder than the warmest heating degree days.** (emphasis added) (Direct Testimony of Lesa A. Jenkins, Case No. GR-2001-382, et. al., p. 19, line 19 to p. 20, line 3).

As can be seen, Ms. Jenkins uses the term "would cover" in relation to flowing supplies, but she does not say *at least* cover or *exactly* cover. However, her direct testimony clearly states that flowing supplies would be used to meet warmest month demand and that "storage would be used when the weather is colder than the warmest heating degree days". It is clear that Ms. Jenkins was proposing in her direct testimony that storage withdrawals would be utilized to meet demand greater than the "warmest month" demand. In other words, regardless of what Ms. Jenkins now is attempting to claim, her own direct testimony states that flowing supplies for November should **equal** warm weather requirements because she stated in her direct testimony that storage should meet demand above warm weather requirements.

Q. DID MS. JENKINS' ORAL TESTIMONY AT THE MAY 2003 HEARINGS CONFIRM THAT HER STORAGE UTILIZATION APPROACH SETS FIRST-OF-MONTH FLOWING SUPPLIES EQUAL TO "WARMEST MONTH" DEMAND?

A. Yes. On cross-examination at the May 2003 hearings, Ms. Jenkins confirmed that her storage utilization proposal was to set the amount of first-of-month flowing supplies

equal to "warmest month" demand. Specifically, on cross-examination, Ms. Jenkins stated the following:

> Q. So if we took your [storage utilization] approach of using more flowing supply – first of the month flowing supplies and during that month the prices actually came down or the weather became warmer driving prices downward, would that have not possibly and perhaps even likely resulted in having to sell excess gas into a market that was moving downward?
>
> A. No. I'm not convinced of that, because **I used warmest month in my Surrebuttal**. I also stated that if the company could provide that, I can see possibly having lower first of the month, but then as the weather turned colder, they would have to bring on swing supplies to make up that difference. They couldn't then swing on storage.
>
> Q. But you're assuming that it's warmer than normal first of the month and colder than normal within the month; is that right?
>
> A. No. **I'm saying they nominate *at* warmest month** because they know they're going to flow that amount regardless of what the weather ends up being. Even if the weather is as warm as it's ever been, they can count on for the month that amount of gas.
>
> (clarification and emphasis added) (Cross-Examination of Lesa Jenkins, Case No. GR-2001-382, May 14, 2003, transcript p. 505, ll. 3-22.)

Q. IN FACT, HAS MS. JENKINS ADMITTED IN HER OCTOBER 30, 2003 DEPOSITION ("OCTOBER 30TH DEPOSITION") THAT HER ORAL TESTIMONY AT THE MAY 2003 HEARINGS IS CONTRADICTORY TO HOW SHE HAS ACTUALLY CALCULATED HER "REVISED SUPPLEMENTAL" STORAGE UTILIZATION DISALLOWANCE?

A. Yes. When asked about this in her October 30th deposition, Ms. Jenkins admitted that there was an inconsistency between her oral testimony at the May 2003 hearings and her proposed disallowance as calculated in her supplemental direct testimony:

Q. Do you still have that transcript available in front of you from the hearing?

A. I have some of them. What page are you looking at?

Q. Let's look at pages 505 and 506. I'm looking at line 18 on page 505, and that's you testifying there in an answer. And it says, "no, I'm saying they nominate **at** warmest month because they know they're going to flow that amount, regardless of what the weather ends up being." When you say MGE nominates at warmest month, aren't you saying that the nomination should be equal to the warmest month requirement there?

A. The term "at", I agree that's what it means, but if you go to my direct testimony on page 19, it says that it's reasonable to expect the company to have sufficient assigned term supplies –

THE REPORTER: I'm sorry. I can't hear you.

THE WITNESS [i.e., Ms. Jenkins]:

A. Staff believes that it is reasonable to expect the company to have sufficient assigned term supplies, planned first of month flowing supplies scheduled to cover warmest weather requirements for November through January and that these would be adjusted beginning in December if the company had withdrawn more or less natural gas from storage than planned.

BY MR. DUFFY [i.e., MGE's Attorney]:

Q. And the point of your answer there? I'm sorry. I missed it. Can you tell me what the point is?

A. The point is that the work sheets that are included in my direct and also included in my supplemental direct don't set it at warmest. They check to make sure it at least covers warmest, and also adjust it so if November pulls more storage than planned, you adjust what you're going to do in December. Same thing for subsequent months.

Q. **Doesn't at least cover mean that it would be -- that it would equal warmest month?**

A. **That's not -- you're right. That's what that means, but that is not what I did.**

(clarification and emphasis added) (Deposition of Lesa Jenkins, Case No. GR-2001-382, October 30, 2003, p. 30, line 14 to p. 31, line 25.)

Therefore, Ms. Jenkins has admitted that she previously stated that the flowing supply number should "equal warmest month" but that is not what she did in developing her proposed "revised supplemental" disallowance.

Q. HOW WOULD YOU CHARACTERIZE MS. JENKINS' SUPPLEMENTAL DIRECT TESTIMONY THEN WITH REGARD TO HER FIXING THE "ERROR"?

A. It is very important for the Commission to understand that there was never really an "error" in Ms. Jenkins' analysis as she has now claimed in her supplemental direct testimony. The storage utilization analysis she developed on Schedule 13 and Schedule 8 of her direct testimony reflected the approach that she described and supported in her direct testimony. While Ms. Jenkins is attempting in her supplemental direct testimony to make a distinction that her proposed flowing supplies for November should have "*at least covered*" rather than "*equaled*" the warmest month demand requirements, her own direct testimony disproves this claim. In simple terms, Ms. Jenkins is attempting through her supplemental direct testimony to make wholesale revisions to her approach under the guise that her "original" analysis contained an alleged "error" that needed to be corrected. These revisions are well beyond the scope of the supplemental portion of this proceeding and should not be permitted. In other words, Ms. Jenkins has not just corrected an "error" in her spreadsheet and updated her analysis, but rather has fundamentally changed her proposed storage utilization approach.

Q. HAS MS. JENKINS OFFERED ANY OTHER EXPLANATION AS TO WHY SHE BELIEVES IT IS NECESSARY TO MAKE ADDITIONAL CHANGES TO HER STORAGE UTILIZATION ANALYSIS AT THIS TIME?

A. Yes. In her supplemental direct testimony, Ms. Jenkins stated that she was not supporting her "revised original" analysis (which included replacing the "warmest month" demand for November and December) and needed to make additional changes to her approach because there were questions about the validity of MGE's "warmest month" estimates for January, February and March from the Reliability Report. Specifically, Ms. Jenkins stated in her supplemental direct testimony:

> Q. Does Staff recommend that this adjustment of $2,502,453 be accepted?
>
> A. No. The Company is asking Staff to change only the low-case, warmest month estimate for November 2000 and December 2000, by using the actual usage from November 1999 and December 1999. A review of HDD data shows that November 1999 is the warmest November in the last 30 years, but December 1999 is not. Warmer Decembers were encountered in 1991 and 1994. Since there are questions about the validity of the November and December 2000 low case estimates from the 2000/2001 Reliability Report, it would follow that the Company should also have concerns about the low case estimates for January through March 2001 and the normal estimates for all of these months, November 2000 through March 2001. **The Company does not state what estimates of usage should be used for a warmest January, February or March.**
>
> (emphasis added) (Supplemental Direct Testimony of Lesa A. Jenkins, Case No. GR-2001-382, et. al., p. 8, ll. 3-13).

Therefore, Ms. Jenkins is arguing that further changes to her analysis are now required to address the estimates of "warmest month" demand for January, February and March.

Q. IS THERE ANY BASIS FOR MS. JENKINS' CLAIM THAT "WARMEST MONTH" DEMAND ESTIMATES ARE REQUIRED FOR HER PROPOSED STORAGE UTILIZATION APPROACH?

A. No – absolutely not. The fallacy with Ms. Jenkins' argument is that there was no reason for MGE to, as she claims, "state what estimates of usage should be used for a warmest January, February or March" **since Ms. Jenkins' storage utilization approach as set forth in her direct testimony on Schedule 13 did not rely upon "warmest month" demand for January, February or March**.

Q. WHAT STORAGE UTILIZATION APPROACH DID MS. JENKINS SUPPORT IN HER DIRECT TESTIMONY?

A. Ms. Jenkins' "original" storage utilization approach, i.e., the approach she supported in her direct, rebuttal and surrebuttal testimonies, can be summarized as follows:

> *For November and December only*, Ms. Jenkins first calculated the level of first-of-month flowing supplies based on her "warmest month requirements" approach, with the storage withdrawals for those months then falling out as the difference between total normal monthly demand and the level of first-of-month flowing supplies. In contrast, *for January through March*, Ms. Jenkins instead first calculated the level of storage withdrawals (rather than flowing supplies) based on her "distribution of normal heating degree days" approach, with the level of flowing supplies for those months then falling out as the difference between total normal monthly demand and the projected monthly storage withdrawals. In other words, Ms. Jenkins *calculated* a *flowing supply* amount for the first part of the winter, but *calculated* a *storage withdrawal* amount for the second part of the winter.

Therefore, for January through March, Ms. Jenkins did not rely upon any "warmest month" demand estimate for her calculation of flowing supplies or storage withdrawals. At the end of the May 2003 hearings, MGE only highlighted for the Commission that Ms. Jenkins was utilizing inaccurate "warmest month" demand for November and December

because her approach **did not rely on "warmest month" demand for January, February or March**. It is completely disingenuous of Ms. Jenkins to now claim that additional "warmest month" estimates are required so that she can change her analysis, when her "original" analysis did not even rely upon "warmest month" estimates for those three months.

Q. ARE YOU RECOMMENDING THAT THE COMMISSION DISREGARD ALTOGETHER MS. JENKINS' "REVISED ORIGINAL" ANALYSIS THAT RESULTED IN A $2.5 MILLION DISALLOWANCE, AS WELL AS HER "REVISED SUPPLEMENTAL" ANALYSIS THAT RESULTED IN A $2.9 MILLION DISALLOWANCE?

A. Yes. With exception of the portion of her supplemental direct testimony that actually addresses the defined scope of the supplemental phase of this proceeding, the Commission should disregard her supplemental direct testimony altogether. The entire reason for the supplemental portion of this proceeding was that MGE discovered that Ms. Jenkins had utilized "warmest month" demand amounts in her approach for November and December that were clearly wrong because they were substantially higher than actual demand that was experienced in November and December of 1999. While I have testified at length that MGE does not support Ms. Jenkins' "original" storage utilization approach, there is absolutely no basis for Ms. Jenkins to make changes to her "original" analysis. There was no "error" in the spreadsheet that needed to be corrected, nor is there any basis for the numerous other changes that she has proposed in her supplemental direct testimony. The Commission should disregard the various other analyses that Ms.

Jenkins has subsequently developed in her supplemental direct testimony because it is now exceedingly clear based on the numerous errors, modifications and adjustments contained in her approach that there has never been a firm basis for her alternative analyses in the first place.

JENKINS' "REVISED SUPPLEMENTAL" ANALYSIS

Q. IF THE COMMISSION WERE TO CONSIDER MS. JENKINS' "SUPPLEMENTAL REVISED" ANALYSIS, SHOULD THE COMMISSION GIVE ANY WEIGHT TO HER ANALYSIS?

A. No. Even if the Commission is to consider Ms. Jenkins' "supplemental revised" analysis, her analysis remains fraught with error, even after all of the adjustments and purported "corrections" she is proposing to make.

Q. WHAT ARE THE CHANGES THAT MS. JENKINS MADE TO DEVELOP HER "REVISED SUPPLEMENTAL" STORAGE UTILIZATION ANALYSIS?

A. In addition to correcting the "error" discussed earlier, she claimed in her supplemental testimony that there were four additional changes to her approach and calculations for her "revised supplemental" storage utilization approach:

1) Revised the overall approach for January, February and March so that flowing supplies are based on "warmest month" demand and not based on the amount of demand that is left after first determining storage withdrawals using the distribution of normal heating degree days;

2) Developed entirely new estimates of normal and "warmest month" demand for all five winter months using a regression analysis based on two years of heating degree day and volume data;

3) Forced the flowing supply plan for November to be no more than "warmest month" demand; and

4) Changed the date on which MGE made decisions for December 2000 to November 27, 2000 rather than November 22, 2000 based on information provided by MGE.[2]

All of the changes to Ms. Jenkins' storage utilization analysis noted above, including the correction of the "error" in her spreadsheet, were then utilized to calculate her proposed "revised supplemental" disallowance as presented on Schedule 5 of her supplemental testimony.

Q. IN TERMS OF THE FIRST CHANGE NOTED ABOVE INCLUDED IN HER "REVISED SUPPLEMENTAL" ANALYSIS, COULD YOU PLEASE EXPLAIN HOW MS. JENKINS HAS CHANGED THE APPROACH THAT SHE IS RELYING UPON TO EVALUATE MGE'S STORAGE UTILIZATION?

A. As I discussed earlier, Ms. Jenkins' "original" storage utilization approach, i.e., the approach she supported in her direct, rebuttal and surrebuttal testimonies, can be summarized as follows:

> *For November and December only*, Ms. Jenkins first calculated the level of first-of-month flowing supplies based on her "warmest month requirements" approach, with the storage withdrawals for those months then falling out as the difference between total normal monthly demand and the level of first-of-month flowing supplies. In contrast, *for January through March*, Ms. Jenkins instead first calculated the level of storage withdrawals (rather than flowing supplies) based on her "distribution of normal heating degree days" approach, with the level of flowing supplies for those months then falling out as the difference between total normal monthly demand and the projected monthly storage withdrawals. In other words, Ms. Jenkins *calculated* a *flowing supply* amount for the first part of the winter, but *calculated* a *storage withdrawal* amount for the second part of the winter.

[2] While Ms. Jenkins was aware of this change in date after the filing of my direct testimony, she has only now proposed such a change, even though she could have done so in her rebuttal or surrebuttal testimony.

However, in her supplemental direct testimony, Ms. Jenkins has changed the approach by which she evaluates MGE's storage utilization for the winter of 2000/2001. In her supplemental direct testimony, her approach can be summarized as follows:

> *For all five winter months*, Ms. Jenkins has first calculated the level of first-of-month flowing supplies based on her "warmest month requirements" approach, with the storage withdrawals for those months then falling out as the difference between total normal monthly demand and the level of first-of-month flowing supplies. Ms. Jenkins no longer relies upon her "distribution of normal heating degree days" approach to calculate the level of storage withdrawals for any month.

In addition to the change in approach noted above, another significant change to her "revised supplemental" storage utilization plan is that Ms. Jenkins has also created her own estimates of normal and "warmest month" demand requirements that she utilizes in her proposed storage utilization disallowance calculations.

Q. IS MS. JENKINS' SUPPLEMENTAL DIRECT TESTIMONY CONSISTENT WITH HER "REVISED SUPPLEMENTAL" PROPOSAL?

A. No. In her supplemental direct testimony, Ms. Jenkins claims that her storage utilization approach is still based on the distribution of normal heating degree days when this is simply not the case. Specifically, Ms. Jenkins' supplemental direct testimony states:

> Q. Has Staff previously explained why it believes the Company storage withdrawal plan is imprudent?
>
> A. Yes. This is addressed in my earlier direct, rebuttal, and surrebuttal testimony. ...A general explanation of Staff's calculation is that planned storage withdrawals follow the same distribution as the distribution of normal heating degree days. Thus, greater withdrawal of natural gas from storage is planned for the coldest heating season months.
>
> (Supplemental Direct Testimony of Lesa A. Jenkins, Case No. GR-2001-382, et. al., p. 13, ll. 4-7 and ll. 20-22).

While Ms. Jenkins continues to claim in her supplemental direct testimony that her storage utilization plan is based upon the distribution of normal heating degree days, the workpapers to her supplemental direct testimony clearly indicate otherwise. On Schedule MTL-39, which are the workpapers that support the $2.9 million disallowance that Ms. Jenkins is now proposing, it shows that Ms. Jenkins has completely abandoned the distribution of normal heating degree days approach. On Schedule MTL-39, page 7, line 85 (which is in Table 3-2 of her spreadsheet), the columns (D), (F), (H), (J) and (L) reflect Ms. Jenkins' revised daily flowing supply amounts for each winter month. The daily flowing supplies reflected in on line 85 in those columns are based solely on "warmest month" demand, as adjusted for the previous month's storage underage/overage usage. As shown in those same columns but on line 83, Ms. Jenkins' proposed daily storage withdrawals bear no relation to how storage would be distributed each month based on the distribution of normal heating degree days in those months.

Q. ALTHOUGH MS. JENKINS CLAIMED SHE MADE FOUR ADDITIONAL CHANGES TO HER APPROACH, WERE THERE IN FACT OTHER CHANGES THAT SHE MADE THAT EITHER IMPACTED HER PREVIOUS TESTIMONY OR HER "REVISED SUPPLEMENTAL" DISALLOWANCE CALCULATIONS?

A. Yes. As noted above, Ms. Jenkins stated that she corrected an "error" in the spreadsheet that she originally utilized to calculate the storage disallowance. However, there were at least two other apparent errors in Ms. Jenkins' spreadsheet that she corrected in the workpapers supporting her supplemental direct testimony, yet she failed to address in her supplemental direct testimony. For example, Ms. Jenkins made the following

adjustments to her "revised supplemental" analysis that were not addressed in her supplemental direct testimony:

- On Schedule 13-1, lines 11 through 14 of Ms. Jenkins' direct testimony, she presented what purportedly were the actual heating degree days through the date MGE had to make a decision for the following month, as well as the number of heating degree days forecasted through the end of the month. For every winter month, these figures were incorrect in her direct testimony and Ms. Jenkins made representations in her direct testimony relying upon these incorrect figures (see, e.g., p. 22, ll. 13-16). While Ms. Jenkins corrected these figures in her supplemental direct testimony, she never disclosed that these figures were incorrect in her direct testimony or attempted to clarify and revise her direct testimony for this error.

- On Schedule 13-1, line 16, columns (d) and (e) of Ms. Jenkins' direct testimony, she made an adjustment to MGE's end-of-month TSS storage balance for November 2000. As presented on Schedule 13-1, Ms. Jenkins increased the end-of-month storage balance shown in column (d) by 500,000 MMBtu to account for MGE's interruptible storage contract (the adjusted balance is shown in column (e)). However, in the workpapers supporting Ms. Jenkins' supplemental direct testimony, she changed her approach and made no such adjustment in the calculation of her "revised" storage utilization disallowance. Again, Ms. Jenkins did not explain this change in her supplemental direct testimony or advise that her Schedule 13-1 of her direct testimony was adjusted, and that it had an impact on her "revised" storage disallowance.

Q. DID MGE ASK MS. JENKINS ABOUT THESE ADDITIONAL ADJUSTMENTS TO THE WORKPAPERS OF HER SUPPLEMENTAL TESTIMONY?

A. Yes. When asked in her October 30th deposition about these additional adjustments, Ms. Jenkins acknowledged making them in her supplemental direct testimony, but admitted that she did not address these adjustments in her supplemental direct testimony because she assumed that MGE would find them, and that the Commission would not want this level of detail. Specifically, in reference to the adjustment to the end-of-month storage balance discussed above, Ms. Jenkins stated the following at the October 30th deposition:

Q. So you figured that somebody would find it, even though you didn't indicate that you had made the change?

A. I figured you'd [i.e., MGE] find it because I highlighted it, and I labeled the column differently.

.....

Q. But you made a judgment determination, as I understand your previous answer, to not discuss this in your [supplemental direct] testimony, even though it makes a change in the result, because you didn't consider it to be important?

A. I didn't include any of these tables, the former Schedule 13, in my [supplemental direct] testimony. In my judgment, it wasn't adding to anybody's understanding, other than the company, as to what was going on. I did provide this information to the company. I didn't feel that it was adding any value to what the Commissioners had. So I chose not to include it in there.

(clarification added) (Deposition of Lesa Jenkins, Case No. GR-2001-382, October 30, 2003, p. 44, ll. 13-17 and p. 45, line 16 to p. 46, line 1.)

Q. WITH ALL OF THE ADJUSTMENTS SHE HAS MADE IN HER SUPPLEMENTAL DIRECT TESTIMONY, IS MS. JENKINS' "REVISED SUPPLEMENTAL" STORAGE UTILIZATION PROPOSAL NOW AN APPROPRIATE WAY OF EVALUATING MGE'S STORAGE UTILIZATION FOR THE WINTER OF 2000/2001?

A. Absolutely not. Even if one were to assume that MGE agreed with Ms. Jenkins' approach for evaluating storage (which MGE adamantly does not), Ms. Jenkins' analysis remains fraught with error, even after all of the adjustments that Ms. Jenkins has made to her "revised supplemental" analysis. Specifically, Ms. Jenkins' "revised supplemental" storage utilization proposal suffers from two critical fatal flaws, and as such, the Commission should ascribe no value to her analysis and proposed disallowance.

"REVISED SUPPLEMENTAL" ANALYSIS - FATAL FLAW NO. 1

Q. WHAT IS THE FIRST FATAL FLAW WITH MS. JENKINS' "REVISED" STORAGE UTILIZATION APPROACH?

A. The first fatal flaw with Ms. Jenkins' "revised supplemental" storage utilization proposal is that her proposal assumes MGE should only plan to utilize 79% of its contracted storage capacity in a normal winter. Even though MGE has purchased 17.8 Bcf of storage capacity for the benefit of its customers, Ms. Jenkins' "revised supplemental" storage utilization is based on the assumption that MGE should only plan on utilizing 14.0 Bcf of that capacity in a normal winter. This means that her proposed storage plan presumes that MGE should plan to leave nearly 3.4 Bcf of storage, or over 21% of its purchased storage capacity, completely unutilized in a normal winter. Fundamentally, the basis of Ms. Jenkins' "revised supplemental" storage utilization approach simply does not make sense. There is absolutely no reason that MGE would contract for 17.8 Bcf of storage capacity to provide operational, reliability and financial benefits to its customers, yet intentionally plan to underutilize over 21% of the capacity that it had purchased. While all of MGE's storage inventory may ultimately not be cycled in any particular year due to factors such as weather conditions, natural gas prices, and pipeline and distribution system issues, MGE certainly does not purchase storage capacity that it never intends to utilize under normal winter conditions.

Q. HAVE YOU SUMMARIZED MS. JENKINS' "REVISED SUPPLEMENTAL" STORAGE UTILIZATION PROPOSAL AND HIGHLIGHTED THE PROBLEM WITH HER EVALUATION FRAMEWORK?

A. Yes. Schedule MTL-40 attached to my testimony provides a summary of Ms. Jenkins' "revised supplemental" storage utilization proposal. This summary is based on the workpapers that she used to develop her supplemental direct testimony, and which are presented in their entirety on Schedule MTL-39.[3] As can be seen on Schedule MTL-40, Ms. Jenkins has proposed that, in a normal winter, MGE should schedule 37,399,382 MMBtu of flowing supplies and withdraw 13,984,207 MMBtu of storage inventory. As discussed earlier, Ms. Jenkins has calculated these figures based upon her proposal that MGE should plan for flowing supplies in each winter month to *at least cover* "warmest month" demand, with the difference between total normal demand and the "warmest month" demand met by storage withdrawals. The fatal flaw with Ms. Jenkins' evaluation framework, however, is that she proposes storage withdrawals of 13,984,207 MMBtu in a normal winter when she is fully aware that MGE has purchased 17,767,629 Dth of storage capacity. Therefore, Ms. Jenkins' framework suggests that, in a normal winter, MGE should plan to leave over 21% of its purchased storage capacity unutilized. In other words, Ms. Jenkins has proposed a framework for evaluating the prudence of MGE's storage utilization for the winter of 2000/2001 that is based on a completely illogical premise. As a result, the Commission should ascribe no value to Ms. Jenkins' storage utilization analysis and her proposed disallowance.

Q. MS. JENKINS' WORKPAPER THAT YOU HAVE ATTACHED AS SCHEDULE MTL-39 SEEMS TO SHOW THAT HER "REVISED EXPECTED STORAGE

[3] The details of Ms. Jenkins' flawed storage utilization proposal are not specifically set forth in her supplemental direct testimony or its accompanying schedules, but rather are set forth in the workpapers provided with her supplemental testimony. The (i) normal monthly demand; (ii) first-of-month flowing supplies based on "warmest month" demand; and (iii) the resulting storage withdrawals, for each winter month as shown (cont.)

WITHDRAWALS" TOTAL 16.4 BCF. WHAT IS THE DIFFERENCE BETWEEN THIS AND THE 14.0 BCF THAT YOU HAVE REFLECTED ON SCHEDULE MTL-40?

A. On Schedule MTL-39, page 1, line 19, column (F), Ms. Jenkins has calculated Staff's "REVISED Expected Storage Withdrawals" to be 16,408,184 MMBtu for the winter of 2000/2001. However, it is important to understand that Ms. Jenkins' storage utilization framework, which is presented on pages 6, 7 and 8 of Schedule MTL-39 and has been summarized on Schedule MTL-40, has been developed for a **normal** winter. In other words, Ms. Jenkins has developed an approach to how MGE should have scheduled storage and flowing supplies under normal winter conditions. For her evaluation of the winter of 2000/2001, Ms. Jenkins then applies her storage and flowing supply framework to MGE's actual 2000/2001 winter experience in order to calculate what her expected storage withdrawals for that winter would have been. Thus, the important distinction is that Ms. Jenkins has proposed storage withdrawals of 14.0 Bcf under normal winter conditions (as reflected on Schedule MTL-40) and has proposed storage withdrawals of 16.4 Bcf for the winter conditions of 2000/2001 (as reflected on Schedule MTL-39, p. 1).

Q. DID MGE ACTUALLY WITHDRAW MORE GAS FROM STORAGE IN THE WINTER OF 2000/2001 THAN MS. JENKINS IS GIVING MGE CREDIT FOR IN HER ANALYSIS?

A. Yes. In the winter of 2000/2001, MGE actually withdrew 16,856,032 MMBtu of natural gas from storage for the benefit of its customers. However, Ms. Jenkins' "revised

on Schedule MTL-40 are presented in Ms. Jenkins' workpaper (i.e., spreadsheet) that has been provided as Schedule MTL-39, specifically on pages 4 and 7.

supplemental" storage utilization analysis only gives MGE credit for 16,408,184 MMBtu, *or 447,848 MMBtu less than MGE actually withdrew from storage.* Ms. Jenkins is basically calculating a proposed disallowance on an expected level of storage withdrawals that is far less than the level of storage that MGE actually withdrew during the winter of 2000/2001 for the benefit of its customers. It is simply not reasonable, nor does it make sense, for Ms. Jenkins to develop a storage utilization approach that does not even give MGE the full credit for the level of its actual storage withdrawals for the winter of 2000/2001.

"REVISED SUPPLEMENTAL" ANALYSIS - FATAL FLAW NO. 2

Q. WHAT IS THE SECOND FATAL FLAW WITH MS. JENKINS' "REVISED SUPPLEMENTAL" STORAGE UTILIZATION APPROACH?

A. The second fatal flaw with Ms. Jenkins' "revised supplemental" storage utilization approach is that she has relied upon inaccurate "warmest month" demand estimates that she herself has created. As noted earlier, one of the changes that Ms. Jenkins has made to the storage utilization analysis in her supplemental direct testimony is that she has developed new "warmest month" demand estimates. Specifically, Ms. Jenkins has estimated "warmest month" demand based upon a regression of (i) actual monthly heating degree day data and (ii) MGE's actual monthly demand, for the period July 1998 through June 2000.[4] The problem is that these "warmest month" demand estimates are inaccurate.[5]

[4] From her regression of these two years of data, Ms. Jenkins calculates a baseload and heatload factor. She calculates baseload demand by multiplying the baseload factor by the number of days in each month, and calculates heatload demand by multiplying the heatload factor by the "warmest month" heating degree days, i.e., the lowest number of heating degree days for each month in the past forty years. She then sums the

Q. HAVE YOU DETERMINED THE EXTENT TO WHICH MS. JENKINS' ESTIMATIONS OF DEMAND ARE INACCURATE?

A. Yes. Schedule MTL-41 highlights the inaccuracy of Ms. Jenkins' demand estimates that she utilizes to calculate her "revised" storage disallowance. Schedule MTL-41 presents a comparison of MGE's *actual demand* for each winter month over the past five years versus the *estimated demand* that would be produced by Ms. Jenkins' regression (i.e., the baseload and heatload factors) applied to the actual heating degree days that occurred in each of those months. Page 1 of Schedule MTL-41 summarizes the variations between MGE's actual demand in each of the twenty-five months (i.e., five years of five winter months) and the demand that would result from Ms. Jenkins' regression equation. Page 2 of Schedule MTL-41 provides the supporting information on how the demand for each of the months was developed using Ms. Jenkins' baseload and heatload factors from her regression equation. It should be noted that the demand estimates were developed using Ms. Jenkins' exact estimation model as reflected in her supplemental direct workpaper titled "MGE Regression using MTL-14 and DR146", which I have attached as Schedule MTL-42.

Q. PLEASE EXPLAIN THE RESULTS OF SCHEDULE MTL-41.

---

baseload and the heatload demand for each month to estimate the "warmest month" demand, which is utilized in her storage utilization disallowance proposal.

[5] It is important to note that MGE is not stating that the use of regression analysis is an inappropriate means of estimating baseload and heatload demand. Rather, Ms. Jenkins' demand estimates are inaccurate due to her misapplication of the regression analysis. For example, Ms. Jenkins only utilized a short data series (i.e., two years of data), and her approach was simplistic in that it calculated a single baseload and heatload factor for all twelve months even though it would have been more accurate to calculate a separate heatload factor for each month or at least each season since each month (or season) has a different level of heatload demand.

A. As shown on Schedule MTL-41, page 1, there are five months that have been shaded (i.e., January 1998, February 1998, November 1998, November 1999 and November 2001). These months have been shaded to highlight the fact that, in these months, Ms. Jenkins' regression equation would have estimated a level of demand that varied from MGE's actual demand *by 10% or more*. This demonstrates that, not only is there a problem with the magnitude of the inaccuracy of her demand estimates (i.e., the actual demand versus estimated demand varies by more than 10%), but the frequency of her inaccurate estimates is also significant (i.e., five of the twenty-five months, or 20% of the time, her regression would have produced significantly inaccurate results). In other words, the regression that Ms. Jenkins has developed and utilized in her "revised" disallowance proposal simply is not accurate and does not do a reasonable job of estimating demand. In fact, three of the five months in which her estimate of demand varies from actual demand by more than 10% are for the month of November. This highlights the point I have stressed in my previous testimony that November is the most variable winter month in terms of demand and is very difficult to estimate or predict, and therefore, requires the high degree of operating flexibility that MGE's November storage utilization plan provides.

Furthermore, as shown in the shaded boxes on page 1 of Schedule MTL-41, specifically in column (g), *Ms. Jenkins' estimation of demand is the most inaccurate when the weather was the most extreme*, i.e., when the actual monthly heating degree days varied significantly from the normal monthly heating degree days. Considering that Ms. Jenkins has attempted to estimate "warmest month" demand for her storage utilization proposal,

she has attempted to estimate the demand in those months in which the weather is the most extreme. However, as shown on Schedule MTL-41, Ms. Jenkins' demand estimation process is the most inaccurate when the weather is the most extreme, therefore, this only exacerbates the problems with Ms. Jenkins' "warmest month" demand estimates.

Q. ON SCHEDULE MTL-41, PAGE 1, THERE ARE SOME NOTATIONS IN COLUMN (H). COULD YOU PLEASE EXPLAIN WHAT IS MEANT BY THOSE NOTATIONS?

A. Yes. As noted above, Ms. Jenkins calculated her "warmest month" demand estimates in her workpaper that I have attached to my testimony as Schedule MTL-42. In that workpaper, Ms. Jenkins calculated the "warmest month" demand using monthly data from July 1998 through June 2000, and calculated the estimated demand assuming "no customer growth" and "with customer growth". For her demand estimates, she grossed up her estimated demand by one year of customer growth (i.e., 0.75% per year based on MGE's figures) even though her baseload and heatload factors were based on two years of data, which appears inconsistent. Therefore, rather than add to the confusion and the potential error of how she accounted for customer growth, I have reflected the estimated demand on Schedule MTL-41 that would have been produced by Ms. Jenkins' proposed approach on an unadjusted basis, meaning that the demand has not been adjusted upward in those months that precede the winter of 2000/2001 or downward in those months that are after the winter of 2000/2001. The demand is presented in this manner to reflect the exact demand that would be produced by Ms. Jenkins' demand estimation equation

without attempting to replicate the manner in which Ms. Jenkins accounted for customer growth. However, because I have shown the demand on an unadjusted basis, I have made a notation on Schedule MTL-41, page 1, in column (h) to reflect how the variation between actual demand and Ms. Jenkins' estimated demand would be affected if customer growth were accounted for in the analysis. Since MGE's load growth is relatively modest, the differences reflected in column (f) would not change significantly. However, as shown in the shaded boxes in column (h), three of the five months in which Ms. Jenkins' analysis was most inaccurate would actually get even worse if the analysis accounted for customer growth.

Q. DID MS. JENKINS PERFORM ANY OF HER OWN STUDIES OR ANALYSES TO TEST THE ACCURACY OF HER "WARMEST MONTH" ESTIMATION PROCESS?

A. No. In her supplemental direct testimony and in her October 30th deposition, Ms. Jenkins stated that her analysis was correct and reasonable since the adjusted R-squared of the two years of monthly heating degree day and demand data was over 0.90. However, Ms. Jenkins did absolutely no analysis or review to test whether her regression equation was good, average or poor at estimating MGE's demand that had *actually occurred* in the past. In fact, Ms. Jenkins admitted in her October 30th deposition that she had conducted no such studies to determine the reasonableness of her proposed estimates:

> Q. Did you do any checks to determine whether this line fit works in other months?
>
> A. What I looked at was just – I mean, I compared it to what the actuals were. I mean, this plot shows actuals and estimated for that period of time. No, that's the amounts that I looked at.

Q. Okay. So the answer to my question is, you didn't try to apply this approach to other months to determine whether the result that shows up in your Schedule 3-1 only works in these months or whether it's good for other months; is that right?

A. I didn't – I didn't see how that's appropriate, because the Company—

Q. *Well, I'm not asking whether it's appropriate or not. I'm asking if you did it.*

A. *No*.

Q. Okay. If I understand correctly, then, the disallowance that you're now supporting in this case rests upon, among other things, the number that appears in line 25, column (c), the 5,114,047 decatherms; is that right?

A. That's the number that I used for the check. I wouldn't say it solely relies on that number.

Q. Well, but that number goes into – that number or the disallowance that you are proposing rests, in part, on your use of that number, does it not?

A. Yes.

Q. And that is a number that you got from your regression analysis; is that true?

A. Yes.

Q. Now, you are – that is supposed to reflect an estimate of the warmest month requirement for November of 2000, is that correct?

A. Yes.

(emphasis added) (Deposition of Lesa Jenkins, Case No. GR-2001-382, October 30, 2003, p. 49, line 17 to p. 50, line 24.)

Q. SHOULD MS. JENKINS HAVE BEEN AWARE THAT THERE WAS SOMETHING WRONG WITH HER "WARMEST MONTH" DEMAND ESTIMATION PROCESS?

A. Yes. A point that highlights the arbitrary and inaccurate nature of Ms. Jenkins' analysis is that she has proposed a level of "warmest month" demand for November of 5,114,047 MMBtu. However, Ms. Jenkins is fully aware that the warmest November in the past 40

years actually occurred in November 1999, and that MGE experienced a total demand of 4,414,515 MMBtu in that month. Therefore, Ms. Jenkins' demand estimation produced a "warmest month" for November that was nearly 16% higher than the **actual** "warmest month" demand that had occurred only the year before the winter that is at issue in this proceeding. Moreover, Ms. Jenkins estimated a "warmest month" demand for March of 6,454,007 MMBtu, even though she is fully aware that MGE's **actual** demand for March 2000 was 6,042,011 MMBtu, or again, her "warmest month" estimate was *higher* than the **actual** demand. These facts alone should have indicated to Ms. Jenkins that her "warmest month" estimation process was faulty. If nothing else, Ms. Jenkins should not have estimated "warmest month" demand when she had actual "warmest month" demand available.

Q. DO YOU HAVE ANY ADDITIONAL COMMENTS REGARDING MS. JENKINS' "REVISED SUPPLEMENTAL" STORAGE UTILIZATION ANALYSIS?

A. Yes, I have one further issue that I would like to point out for the Commission. As discussed in my previous testimony in this proceeding, Ms. Jenkins' "original" analysis included a proposal that MGE schedule 181,265 MMBtu/day of first-of-month flowing supplies. As shown on Schedule MTL-15 of my direct testimony, I illustrated how the amount of first-of-month flowing supply that Ms. Jenkins had proposed for November would result in a significant number of days in which MGE did not need the amount of supply that it had scheduled, and which could have a negative financial and/or operational impact on MGE. In her "revised supplemental" testimony, although Ms. Jenkins has now changed her proposed first-of-month flowing supply amount for

November to 165,468 MMBtu/day, the same problem still exists. I have updated Schedule MTL-15 to reflect Ms. Jenkins' "revised supplemental" analysis, which is now presented as Schedule MTL-43.

As can be seen in the table at the bottom of Schedule MTL-43, Ms. Jenkins' "revised supplemental" storage utilization plan would have resulted in MGE having excess scheduled flowing supplies for 19 days in November 1999 (63% of the time) and 22 days in November 2001 (73% of the time). In other words, Ms. Jenkins' "revised supplemental" analysis does little to fix the problem that existed in her "original" analysis that MGE would likely have excess flowing supplies for a significant amount of November under her proposed plan.

Q. WOULD YOU PLEASE SUMMARIZE YOUR POSITION WITH REGARD TO MS. JENKINS' STORAGE UTILIZATION DISALLOWANCE PROPOSALS?

A. This review of Ms. Jenkins testimony shows clearly that her "revised supplemental" disallowance is not truly based on either "distribution of normal heating degree days" or the actual "warmest month" data, but is based on a fabricated analysis that is new and only now being put in the record in this proceeding. As established in the scope for the supplemental portion of this proceeding, the purpose of this portion of the proceeding was specifically to review "(i) MGE's 1999/2000 heating season delivered natural gas volumes; and (ii) the use of those volumes in the spreadsheet developed by Ms. Jenkins." Instead, Ms. Jenkins has made wholesale changes to the data on which her calculations

are based in order to arrive at Staff's new proposed disallowance. The Commission should reject this out of hand.

As I have demonstrated in all of my filed testimony in this proceeding, and as has been discussed by MGE Witness Reed, MGE's utilization of its storage inventory in the winter of 2000/2001 was well within the range of reasonable and prudent conduct. Furthermore, Ms. Jenkins' analyses continue to be fraught with errors. As such, Ms. Jenkins has clearly not demonstrated that her "original" storage utilization proposal, her "revised original" original storage utilization proposal, or her "revised supplemental" storage utilization proposal, and the various disallowance levels each of those produced, are a reasonable, appropriate or correct way in which to evaluate MGE's conduct for the winter of 2000/2001.

JENKINS' REVISED HEDGING DISALLOWANCE

Q. IN ADDITION TO THE CHANGES THAT MS. JENKINS HAS MADE TO HER STORAGE UTILIZATION ANALYSIS, HAS SHE ALSO CHANGED HER PROPOSED HEDGING DISALLOWANCE?

A. Yes. In her direct testimony, Ms. Jenkins claimed that MGE did not meet Staff's minimum monthly hedging level of 30% for the months of January and March 2001, and as a result, proposed a disallowance of $614,365. In her supplemental direct testimony, Ms. Jenkins has significantly revised her disallowance downward to $130,137 based on MGE not meeting Staff's minimum monthly hedging level only for March 2001. Under

her revised analysis, Ms. Jenkins has claimed that MGE met Staff's proposed minimum monthly hedging level in all other winter months.

Q. DO YOU AGREE WITH MS. JENKINS' ADJUSTMENT TO HER PROPOSED HEDGING DISALLOWANCE?

A. No. Ms. Jenkins adjusted her proposed hedging disallowance based upon the same fatally flawed regression equation she utilized to develop her "warmest month" demand estimates that I discussed earlier and are reflected in Schedule MTL-42. In addition to estimating "warmest month" demand, Ms. Jenkins also utilized the regression equation to estimate normal demand. It is these revised normal demand estimates upon which she has based her revised hedging disallowance.

Regardless of the fact that her revised hedging disallowance is based on inaccurate estimates, MGE still maintains that Ms. Jenkins' original disallowance is unsupported and unreasonable and that **there should be no disallowance for hedging** based on the detailed direct, rebuttal and surrebuttal testimony that MGE has filed in this proceeding. In fact, prior to her revised hedging proposal, I testified that MGE hedged over 38% of its volumes for the winter of 2001/2002 (see my direct testimony at p. 45). Under her revised proposal, the amount that MGE hedged for the winter is even higher. Specifically, the total of the financially and physically hedged volumes for the winter of 2000/2001 equaled 20,333,341 MMBtu, or nearly 40% of Ms. Jenkins revised normal requirements, clearly exceeding 30% of normal requirements.

Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL REBUTTAL TESTIMONY?

A. Yes, it does.

NP

Schedules
for the Supplemental Rebuttal Testimony
of
MGE Witness Langston

NP

HC

Schedule MTL-37, pages 1-5
Are Highly Confidential

HC

Schedule MTL-37

Missouri Gas Energy
GR-2001-382

Table 1: First of Month Nominations on Duke must be made 6 business days before FOM. So, Staff reviewed decisions made on 10/24/00, 11/22/00, 12/21/00, 1/24/01, and 2/21/01.

	A	B	C	D	E	F	G	H	I	J
1	**Missouri Gas Energy**									
2	**GR-2001-382**									
3										
4	**Table 1:** First of Month Nominations on Duke must be made 6 business days before FOM. So, Staff reviewed decisions made on 10/24/00, 11/22/00, 12/21/00, 1/24/01, and 2/21/01.									
5										
6	**Information Known As Of:**		**10/24/2000**	**11/22/2000**		**12/21/2000**		**1/24/2001**	**2/21/2001**	
7	From Storage Analysis Report:		Oct-00	Nov-00		Dec-00		Jan-01	Feb-01	
8	Forecasted demand and storage inj & w/d entered for actual HDD through:		10/23/2000	11/21/2000		12/20/2000	Rev 12/20 to include 12/31 [4]	1/23/2001	2/20/2001	
9	Actual HDD through this date		256	838		1,368	1,368	1,076	956	
10	Forecasted HDD for remainder of month		77	246		514	553	254	231	
11	Known & expected HDD for month		333	1,084		1,882	1,921	1,330	1,187	
12	Expected monthly HDD as % of normal HDD (calculated this - not in report)			165.0%		175.4%	179.0%	109.2%	125.5%	
13	EOM Storage Balances				Revised Nov-00 to include ISS [3]		Rev 12/20 to include 12/31 [4]			
14	TSS		14,948,357	10,708,780	11,208,780	4,227,928	4,112,139	3,927,321	1,637,647	
15	FSS		1,121,968	1,121,952	1,121,952	1,041,777	1,041,777	1,041,777	1,041,777	
16	PEPL/WS		1,453,926	1,009,107	1,009,107	598,035	591,696	372,676	169,435	
17	Total Storage Inventory		17,524,251	12,839,839	13,339,839	5,867,740	5,745,612	5,341,774	2,848,859	
18	% of MSQ		98.6%	72.3%	75.1%	33.0%	32.3%	30.1%	16.0%	
19	Inventory remaining to be filled [1]		243,378							
20	From Company Reliability Report:		Nov-00	Dec-00		Jan-01		Feb-01	Mar-01	
21	Forecasted Demand:									
22	Base Case - 30 Year Normal Weather		7,400,361	12,375,465		13,868,421		11,213,497	8,423,472	
23	Low Case		5,587,935	10,592,504		10,077,482		8,819,953	6,845,539	
24	High Case		9,140,788	17,896,663		16,186,584		13,732,070	10,514,864	
25	Historical HDD data:		Nov-00	Dec-00		Jan-01		Feb-01	Mar-01	
26	warmest month HDD		398	763		841		646	529	
27	normal month HDD		657	1,073		1,218		946	691	
28	coldest month HDD		877	1,606		1,629		1,274	1,057	
29	Using Company heatload & baseload factors in Reliability Report w/ historical HDD		Nov-00	Dec-00		Jan-01		Feb-01	Mar-01	
30	Number of days in month		30	31		31		28	31	
31	estimated demand w/ warmest HDD		5,591,673	9,457,584		10,273,551		8,090,819	7,009,684	
32	estimated demand w/ normal HDD		8,301,101	12,700,529		14,217,391		11,229,153	8,704,384	
33	estimated demand w/ coldest HDD		10,602,546	18,276,302		18,516,908		14,660,398	12,533,151	
34	From Company Supply/Demand Summary:		Nov-00	Dec-00		Jan-01		Feb-01	Mar-01	
35	Normal Monthly Demand		7,425,361	12,400,465		13,893,421		11,238,497	8,448,472	
36	Daily Average Demand		247,512	400,015		448,175		401,375	272,531	
37	Demand to be met w/ storage w/d [2]									
38	TSS		138,333	91,935		49,355		79,914	61,115	
39	FSS		0	0		0		0	0	
40	PEPL/WS		4,272	6,339		6,615		6,994	4,120	
41	Total Storage w/d		142,605	98,274		55,970		86,908	65,235	
42	Fuel Requirements		2,715	7,909		13,036		10,426	6,810	
43	Daily Avg Demand still to be met (with flowing or ?)		107,622	309,650		405,241		324,893	214,106	
44	Less Planned Flowing Supplies		107,622	289,650		405,241		304,893	189,106	
45	Daily Avg Demand still to be met with ____		0	20,000		0		20,000	25,000	
46	From DR28 response:		Nov-00	Dec-00		Jan-01		Feb-01	Mar-01	
47	Planned Normal Storage Withdrawals		4,150,166	3,454,240		3,464,251		3,162,867	2,247,507	
48										
49										

Source: Jenkins Supplemental Direct Workpaper titled
"MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" -
from worksheet tab titled "FOM Plans"

Schedule MTL-37

Missouri Gas Energy
GR-2001-382

Table 2: Storage Inventory - Actuals

	EOM Storage Inventory [5]						
	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01
Williams SA-0014 (TSS)	14,122,908	15,593,505	9,966,153	3,747,983	3,784,819	2,515,613	870,709
Williams SA-0072 (FS)	975,369	1,121,952	1,121,952	1,041,777	1,041,777	41,777	0
PEPL WS-012626	778,088	0	0	0	0	0	0
PEPL WS-012627	165,143	1,051,108	1,004,903	575,538	368,179	169,435	39,824
Total	16,041,508	17,766,565	12,093,008	5,365,298	5,194,775	2,726,825	910,533

Given the information known when decisions were made regarding first-of-month nominations, Staff believes that the FOM nominations would have been different - November FOM nominations would have been higher to allow storage to be reserved for the normally colder months of December and January and to assure that the Company had sufficient withdrawal capabilities to cover a possible late winter cold snap. Storage balances and FOM nominations for this option is presented below:

Table 3-1: Storage withdrawals expected based on distribution of normal HDD

	Normal HDD	Monthly Distr.	Storage Distr.
Nov-00	657	14.3%	2,474,336
Dec-00	1,073	23.4%	4,122,699
Jan-01	1,218	26.6%	4,679,820
Feb-01	946	20.6%	3,634,737
Mar-01	691	15.1%	2,677,578
Total	4,585	100.0%	17,589,170

Storage distribution is based on the percentage of normal HDD occurring in that month times the total storage inventory. For November, would use the total MSQ less 500,000 allowed by Company for injections in Nov if weather is warmer than normal. For Dec - Mar, Company would know the beginning balance at start of November, so adjust accordingly - including additional 150,000 ISS allowed in Nov.

check: Oct end-of-month inv = 17,766,565

total expected storage if adjust Nov by 150,000 from ISS 17,739,170

Table 3-2: Staff's calculation of expected storage withdrawal and flowing supplies for Company planned normals

	Nov-00	Nov-00 Rev	Dec-00	Dec-00 Rev	Jan-01	Feb-01	Mar-01
Normal Monthly Demand	7,425,361	7,425,361	12,400,465	12,400,465	13,893,421	11,238,497	8,448,472
Daily Average Demand	247,512	247,512	400,015	400,015	448,175	401,375	272,531
Daily Demand to be met w/ storage w/d	82,478		132,990		150,962	129,812	86,373
plus storage w/d allowed for ISS in Nov	5,000						
less storage for excess from prior month			(24,726)		(108,830)	47,544	16,145
Subtotal of daily storage w/d	87,478	108,076	108,264	90,393	42,132	177,356	102,518
Daily Fuel Requirements	2,715	2,715	7,909	7,909	13,036	10,426	6,810
Expected Daily Flowing Supplies	162,749	142,151	299,660	317,531	419,079	234,445	176,823
% of planned normal met with storage (includes fuel)	35.0%	43.2%	26.5%	22.2%	9.1%	43.1%	36.7%
% of planned normal met with flowing supplies (includes fuel)	65.0%	56.8%	73.5%	77.8%	90.9%	56.9%	63.3%
Check if planned daily flowing covers warm weather requirements (used Company numbers for low-case)	147,151		317,531		325,080	314,998	220,824

storage would need to be adjusted prior to making nominations based on expected end-of-month inventory for previous month

This is the warm weather requirement less 150,000 for ISS in Nov

This is the warm weather requirement less any excess storage w/d not pulled in Nov

Did not adjust for Feb & Mar - not as much of an issue in Feb and Mar since most of winter has past and have better handle on storage volumes available to meet requirements for the rest of the winter

Source: Jenkins Supplemental Direct Workpaper titled
"MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" -
from worksheet tab titled "FOM Plans"

Schedule MTL-37

Missouri Gas Energy
GR-2001-382

Table 3-3: Effect of revised daily flowing supplies on expected end-of-month (EOM) storage inventory

Information Known As Of:	11/22/2000	12/21/2000	1/24/2001	2/21/2001
From Storage Analysis Report:	Nov-00	Dec-00	Jan-01	Feb-01
Forecasted demand and storage inj & w/d entered for actual HDD through:	11/21/2000	12/20/2000	1/23/2001	2/20/2001
Actual HDD through this date	838	1,368	1,076	956
Forecasted HDD for remainder of month	246	553	254	231
Known & expected HDD for month	1,084	1,921	1,330	1,187
Expected monthly HDD as % of normal HDD (calculated this - not in report)	165.0%	179.0%	109.2%	125.5%
Revised Expected EOM Storage Balances:				
EOM Storage Balances from above	13,339,839	5,745,612	5,341,774	2,848,859
Plus additional inv from prior month(s)		1,035,870	1,900,181	2,329,159
Plus additional demand that would have been covered with flowing supplies instead of storage w/d	1,035,870	864,311	428,978	(1,972,544)
	14,375,709	7,645,793	7,670,933	3,205,474
Storage inv expected for normal weather	15,142,225	11,019,530	6,339,710	2,704,973
Excess from storage for colder weather	766,516	3,373,737	(1,331,223)	(500,501)
So need to recover any excess w/d in next month (per day) or can w/d any additional storage	24,726	108,830	(47,544)	(16,145)

Table 3-4: Effect of revised daily flowing supplies on actual end-of-month storage inventory

	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Total	
Actual EOM Storage Balances	12,093,008	5,365,298	5,194,775	2,726,825	910,533	16,856,032	Actual
Plus additional inv from prior month(s)		1,035,870	1,900,181	2,329,159	356,615		
Plus additional demand that would have been covered with flowing supplies instead of storage w/d	1,035,870	864,311	428,978	(1,972,544)	(380,773)		
	13,128,878	7,265,479	7,523,934	3,083,440	886,375		
Actual Expected Net Withdrawals	4,637,687	5,863,399	(258,455)	4,440,494	2,197,065	16,880,190	Expected

Table 3-5: Comparison of Company and Staff FOM planned flowing supplies and storage withdrawals

		Company Planned Demand to be met with:				Staff revision: Expected storage withdrawal and flowing supplies for Company planned normals:			
	Normal Daily Avg Demand + Fuel	Daily Flowing Supplies	Flowing Supplies as % of Daily Avg for Month	Daily Storage w/d [6]	Storage as % of Daily Avg for Month	Daily Flowing Supplies	Flowing Supplies as % of Daily Avg for Month	Daily Storage w/d [6]	Storage as % of Daily Avg for Month
Nov-00	250,227	107,622	43.0%	142,605	57.0%	142,151	56.8%	108,076	43.2%
Dec-00	407,924	289,650	71.0%	98,274	24.1%	317,531	77.8%	90,393	22.2%
Jan-01	461,211	405,241	87.9%	55,970	12.1%	419,079	90.9%	42,132	9.1%
Feb-01	411,801	304,893	74.0%	86,908	21.1%	234,445	56.9%	177,356	43.1%
Mar-01	279,341	189,106	67.7%	65,235	23.4%	176,823	63.3%	102,518	36.7%

Source: Jenkins Supplemental Direct Workpaper titled
"MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" -
from worksheet tab titled "FOM Plans"

Schedule MTL-37

Missouri Gas Energy
GR-2001-382

[1] Company states that wants to allow 500,000 so that if November is warmer than normal, still have room to inject; Company also stated in DR62 since storage was fuller than anticipated moved 500,000 to an ISS contract to allow for November injections

[2] Storage w/d planned for Nov-00 would include planned 4,000,000 TSS + 150,000 ISS (or 138,333/day) plus the PEPL/WS w/d (128,160 planned for November compared to 150,166 noted as normal w/d in the DR28 response)

[3] Report for numbers in previous column shows Oct 31 balance as 15,093,505 which would not include the ISS balance of 500,000 so TSS is adjusted to account for the ISS

[4] The forecasted HDD for the remainder of Dec is only through 12/30/00; so the HDD and the storage balances are adjusted to include 12/31/00 - based on Company rationale. Additional demand for 39 HDD is 433,822 (taken from 12/2 which had 39 HDD).

So if 12/31 demand is:	433,822	
These are taken from the Storage Analysis Report and are the same each day for the forecasted dates of 12/21 - 12/30	(51,219)	KN 107th & Elm
	(9,997)	Served KPOC
	(25,835)	Served PEPL (this looks like it includes WS and Dec plan is 6,339/day from WS)
	(230,982)	WNG Flowing
	115,789	needed from TSS

[5] Company states that storage reports available from Williams about the 13th of the month for the prior month. So Company knew actual prior months EOM balance when nominations made for following month.

[6] Recall that November storage withdrawals allow for 5,000 per day from ISS

Source: Jenkins Supplemental Direct Workpaper titled
"MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" -
from worksheet tab titled "FOM Plans"

HC

Schedule MTL-37, page 10
Is Highly Confidential

HC

Schedule MTL-37

Missouri Gas Energy
GR-2001-382

Month	NYMEX Closing Price	Date
November, 2000	4.541	10/28/00
December, 2000	6.016	11/28/00
January, 2001	9.978	12/27/00
February, 2001	6.293	1/29/01
March, 2001	4.998	2/26/01

Source: NYMEX closing prices taken from The Wall Street Journal

Source: Jenkins Supplemental Direct Workpaper titled
"MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" -
from worksheet tab titled "NYMEX close"

Schedule MTL-37

MGE
Case No. GR-2001-387
Schedule B

Month of purchase	Month Hedged				
	Nov-00	Dec-00	Jan 2001	Feb-01	Mar-01
Jun-00	4.312	4.388	4.376	4.138	3.898
Jul-00	4.048	4.136	4.129	3.942	3.758
Aug-00	4.520	4.591	4.557	4.308	4.063
Sep-00	5.240	5.340	5.298	5.028	4.752
Oct-00	5.139	5.177	5.166	4.959	4.724
Average	4.652	4.726	4.705	4.475	4.239

Source: Nymex closing prices simple average by month
Date: March 22, 2002

June	6/1/00	6/2/00	6/5/00	6/6/00	6/7/00	6/8/00	6/9/00	6/12/00	6/13/00	6/14/00	6/15/00	6/16/00	6/19/00	6/20/00	6/21/00	6/22/00	6/23/00	6/26/00	6/27/00	6/28/00	6/29/00	6/30/00	Avg
Nov-00	4.150	4.092	4.383	4.286	3.983	4.140	4.155	4.215	4.168	4.250	4.404	4.455	4.155	4.186	4.413	4.543	4.446	4.525	4.600	4.415	4.423	4.466	4.312
Dec-00	4.250	4.187	4.465	4.355	4.070	4.215	4.220	4.260	4.240	4.320	4.470	4.530	4.230	4.285	4.500	4.620	4.521	4.595	4.665	4.485	4.493	4.536	4.388
Jan-01	4.260	4.192	4.465	4.350	4.070	4.205	4.210	4.268	4.232	4.309	4.454	4.513	4.213	4.275	4.486	4.600	4.503	4.575	4.640	4.465	4.471	4.516	4.376
Feb-01	4.055	3.990	4.245	4.135	3.860	3.990	3.994	4.049	4.015	4.082	4.216	4.271	3.971	4.040	4.236	4.342	4.243	4.297	4.360	4.195	4.200	4.240	4.138
Mar-01	3.845	3.785	4.020	3.920	3.652	3.773	3.776	3.830	3.798	3.855	3.976	4.021	3.730	3.810	3.980	4.078	3.983	4.019	4.080	3.925	3.930	3.965	3.898

July	7/5/00	7/6/00	7/7/00	7/10/00	7/11/00	7/12/00	7/13/00	7/14/00	7/17/00	7/18/00	7/19/00	7/20/00	7/21/00	7/24/00	7/25/00	7/26/00	7/27/00	7/28/00	7/31/00	Avg
Nov-00	4.166	4.100	4.302	4.290	4.306	4.101	4.218	4.205	4.064	4.085	3.955	3.932	3.907	3.810	3.760	3.890	3.951	3.956	3.906	4.048
Dec-00	4.236	4.185	4.390	4.385	4.400	4.195	4.305	4.295	4.150	4.165	4.043	4.015	3.987	3.892	3.843	3.975	4.050	4.061	4.020	4.136
Jan-01	4.216	4.180	4.380	4.380	4.395	4.191	4.295	4.280	4.138	4.150	4.034	4.005	3.979	3.890	3.841	3.970	4.048	4.060	4.019	4.129
Feb-01	3.95	3.945	4.145	4.150	4.175	3.981	4.090	4.090	3.963	3.975	3.866	3.842	3.819	3.735	3.696	3.810	3.888	3.905	3.869	3.942
Mar-01	3.7	3.705	3.905	3.920	3.955	3.786	3.895	3.900	3.788	3.802	3.702	3.682	3.659	3.585	3.553	3.660	3.738	3.753	3.719	3.758

August	8/1/00	8/2/00	8/3/00	8/4/00	8/7/00	8/8/00	8/9/00	8/10/00	8/11/00	8/14/00	8/15/00	8/16/00	8/17/00	8/18/00	8/21/00	8/22/00	8/23/00	8/24/00	8/25/00	8/28/00	8/29/00	8/30/00	8/31/00	Avg
Nov-00	4.080	4.297	4.342	4.360	4.390	4.437	4.455	4.488	4.495	4.371	4.299	4.474	4.491	4.530	4.800	4.590	4.652	4.602	4.683	4.736	4.697	4.850	4.840	4.520
Dec-00	4.180	4.395	4.442	4.440	4.450	4.483	4.505	4.538	4.550	4.445	4.373	4.535	4.575	4.618	4.862	4.665	4.720	4.670	4.750	4.800	4.770	4.920	4.910	4.591
Jan-01	4.175	4.385	4.432	4.425	4.425	4.460	4.477	4.510	4.522	4.422	4.353	4.505	4.540	4.579	4.810	4.625	4.667	4.620	4.696	4.744	4.720	4.861	4.850	4.557
Feb-01	4.005	4.190	4.227	4.205	4.180	4.200	4.212	4.245	4.258	4.177	4.120	4.249	4.284	4.324	4.540	4.368	4.399	4.352	4.432	4.480	4.465	4.590	4.580	4.308
Mar-01	3.840	3.995	4.022	3.990	3.938	3.948	3.955	3.986	4.001	3.942	3.895	4.000	4.035	4.074	4.267	4.110	4.133	4.089	4.162	4.213	4.205	4.323	4.315	4.063

September	9/1/00	9/5/00	9/6/00	9/7/00	9/8/00	9/11/00	9/12/00	9/13/00	9/14/00	9/15/00	9/18/00	9/19/00	9/20/00	9/21/00	9/22/00	9/25/00	9/26/00	9/27/00	9/28/00	9/29/00	Avg
Nov-00	4.905	5.030	5.157	5.100	4.999	5.135	5.105	5.157	5.312	5.300	5.394	5.477	5.433	5.402	5.266	5.412	5.450	5.447	5.124	5.186	5.240
Dec-00	4.975	5.104	5.233	5.187	5.100	5.235	5.209	5.260	5.412	5.400	5.495	5.585	5.548	5.517	5.383	5.525	5.565	5.562	5.231	5.281	5.340
Jan-01	4.915	5.043	5.172	5.140	5.070	5.203	5.178	5.225	5.367	5.355	5.445	5.525	5.495	5.470	5.350	5.485	5.525	5.522	5.222	5.256	5.298
Feb-01	4.640	4.763	4.884	4.865	4.815	4.938	4.913	4.955	5.088	5.075	5.152	5.228	5.210	5.203	5.100	5.225	5.260	5.257	4.971	5.026	5.028
Mar-01	4.365	4.483	4.597	4.580	4.540	4.661	4.636	4.675	4.799	4.785	4.855	4.930	4.923	4.923	4.840	4.960	4.990	4.988	4.727	4.778	4.752

October	10/2/00	10/3/00	10/4/00	10/5/00	10/6/00	10/9/00	10/10/00	10/11/00	10/12/00	10/13/00	10/16/00	10/17/00	10/18/00	10/19/00	10/20/00	10/23/00	10/24/00	10/25/00	10/26/00	10/27/00	10/30/00	10/31/00	Avg
Nov-00	5.352	5.348	5.290	5.152	5.008	5.150	5.134	5.508	5.630	5.537	5.364	5.439	5.228	4.951	4.937	5.072	4.820	4.659	4.664	4.541			5.139
Dec-00	5.435	5.438	5.383	5.248	5.113	5.250	5.236	5.599	5.728	5.649	5.492	5.553	5.349	5.071	5.055	5.193	4.940	4.771	4.753	4.652	4.485	4.490	5.177
Jan-01	5.400	5.398	5.348	5.215	5.085	5.217	5.211	5.511	5.693	5.624	5.475	5.535	5.344	5.081	5.062	5.200	4.960	4.795	4.777	4.677	4.520	4.531	5.166
Feb-01	5.160	5.158	5.118	5.000	4.881	5.007	5.001	5.301	5.442	5.377	5.242	5.295	5.121	4.891	4.875	5.000	4.780	4.612	4.597	4.497	4.352	4.381	4.959
Mar-01	4.905	4.903	4.864	4.765	4.658	4.769	4.764	5.058	5.180	5.122	4.991	5.040	4.877	4.658	4.646	4.757	4.555	4.400	4.382	4.287	4.157	4.191	4.724

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" - from worksheet tab titled "Available Hedge Price"

Schedule MTL-37

MGE Case No. GR-2001-382
Calculation of capacity release adjustment
Sources:MGE Capacity Release Commodity Rate Comparison and Staff's KPC adjustment workpaper

	WNG Williams FOM index	fuel KPC vs WNG % difference	fuel difference $	commodity difference KPC vs WNG	Total Fuel & Commodity
July, 2000	4.20	1.28%	$0.0538	$0.0440	$0.0978
August, 2000	3.69	1.28%	$0.0472	$0.0440	$0.0912
September, 2000	4.50	1.28%	$0.0576	$0.0440	$0.1016
October, 2000	5.19	1.28%	$0.0664	$0.0440	$0.1104
November, 2000	4.43	1.28%	$0.0567	$0.0440	$0.1007
December, 2000	5.90	1.28%	$0.0755	$0.0440	$0.1195
January, 2001	9.98	1.28%	$0.1277	$0.0440	$0.1717
February, 2001	6.29	1.28%	$0.0805	$0.0440	$0.1245
March, 2001	5.03	1.28%	$0.0644	$0.0440	$0.1084
April, 2001	5.34	1.28%	$0.0684	$0.0440	$0.1124
May, 2001	4.82	1.28%	$0.0617	$0.0440	$0.1057
June, 2001	3.66	1.28%	$0.0468	$0.0440	$0.0908

Source for index: Inside FERC Gas Market Report

	Williams	KPC
Production Area Commodity Rate	0.0124	n/a
Market Area Commodity Rate	0.0061	0.0625
Total Commodity Rate	0.0185	0.0625
Production Area Fuel Rate	1.64%	n/a
Market Area Fuel Rate	0.69%	3.61%
Total Fuel Rate	2.33%	3.61%

		Monthly Volumes	Williams Reservation Market	Williams Reservation Production	Williams Total Reservation	Non-recallable Release Credit 75% max rt.	Unit offset fuel & commodity	Total fuel & commodity offset	Net non-recall Release Credit
July, 2000	46,332	1436292	$ 3.0848	$ 5.77	$8.86	307,771.89	$0.0978	$140,411.91	167,359.99
August, 2000	46,332	1436292	$ 3.0848	$ 5.77	$8.86	307,771.89	$0.0912	$131,035.79	176,736.10
September, 2000	46,332	1389960	$ 3.0848	$ 5.77	$8.86	307,771.89	$0.1016	$141,219.94	166,551.96
October, 2000	46,332	1436292	$ 3.0848	$ 5.77	$8.86	307,771.89	$0.1104	$158,612.60	149,159.29
April, 2001	46,332	1389960	$ 3.0168	$ 5.77	$8.79	305,408.96	$0.1124	$156,164.79	149,244.18
May, 2001	46,332	1436292	$ 3.0168	$ 5.77	$8.79	305,408.96	$0.1057	$151,810.32	153,598.64
June, 2001	46,332	1389960	$ 3.0168	$ 5.77	$8.79	305,408.96	$0.0908	$126,275.09	179,133.87
									1,141,784.03

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest - contains error" - from worksheet tab titled "Capacity Release"

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Schedule MTL-38, pages 1-5
Are Highly Confidential

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Schedule MTL-38

Missouri Gas Energy
GR-2001-382

Table 1: First of Month Nominations on Duke must be made 6 business days before FOM. So, Staff reviewed decisions made on 10/24/00, 11/22/00, 12/21/00, 1/24/01, and 2/21/01.

Information Known As Of:	**10/24/2000**	**11/22/2000**		**12/21/2000**		**1/24/2001**	**2/21/2001**
From Storage Analysis Report:	Oct-00	Nov-00		Dec-00		Jan-01	Feb-01
Forecasted demand and storage inj & w/d entered for actual HDD through:	10/23/2000	11/21/2000		12/20/2000	Rev 12/20 to include 12/31 [4]	1/23/2001	2/20/2001
Actual HDD through this date	256	838		1,368	1,368	1,076	956
Forecasted HDD for remainder of month	77	246		514	553	254	231
Known & expected HDD for month	333	1,084		1,882	1,921	1,330	1,187
Expected monthly HDD as % of normal HDD (calculated this - not in report)		165.0%		175.4%	179.0%	109.2%	125.5%
EOM Storage Balances			Revised Nov-00 to include ISS [3]		Rev 12/20 to include 12/31 [4]		
TSS	14,948,357	10,708,780	11,208,780	4,227,928	4,112,139	3,927,321	1,637,647
FSS	1,121,968	1,121,952	1,121,952	1,041,777	1,041,777	1,041,777	1,041,777
PEPL/WS	1,453,926	1,009,107	1,009,107	598,035	591,696	372,676	169,435
Total Storage Inventory	17,524,251	12,839,839	13,339,839	5,867,740	5,745,612	5,341,774	2,848,859
% of MSQ	98.6%	72.3%	75.1%	33.0%	32.3%	30.1%	16.0%
Inventory remaining to be filled [1]	243,378						
From Company Reliability Report:	Nov-00	Dec-00		Jan-01		Feb-01	Mar-01
Forecasted Demand:							
Base Case - 30 Year Normal Weather	7,400,361	12,375,465		13,868,421		11,213,497	8,423,472
Low Case	5,587,935	10,592,504		10,077,482		8,819,953	6,845,539
Low Case- Rev for Nov and Dec (from Company Schedule MTL-14, Langston Direct)	4,414,515	9,843,466		10,077,482		8,819,953	6,845,539
High Case	9,140,788	17,896,663		16,186,584		13,732,070	10,514,864
Historical HDD data:	Nov-00	Dec-00		Jan-01		Feb-01	Mar-01
warmest month HDD	398	763		841		646	529
normal month HDD	657	1,073		1,218		946	691
coldest month HDD	877	1,606		1,629		1,274	1,057
Using Company heatload & baseload factors in Reliability Report w/ historical HDD	Nov-00	Dec-00		Jan-01		Feb-01	Mar-01
Number of days in month	30	31		31		28	31
estimated demand w/ warmest HDD	5,591,673	9,457,584		10,273,551		8,090,819	7,009,684
estimated demand w/ normal HDD	8,301,101	12,700,529		14,217,391		11,229,153	8,704,384
estimated demand w/ coldest HDD	10,602,546	18,276,302		18,516,908		14,660,398	12,533,151
From Company Supply/Demand Summary:	Nov-00	Dec-00		Jan-01		Feb-01	Mar-01
Normal Monthly Demand	7,425,361	12,400,465		13,893,421		11,238,497	8,448,472
Daily Average Demand	247,512	400,015		448,175		401,375	272,531
Demand to be met w/ storage w/d [2]							
TSS	138,333	91,935		49,355		79,914	61,115
FSS	0	0		0		0	0
PEPL/WS	4,272	6,339		6,615		6,994	4,120
Total Storage w/d	142,605	98,274		55,970		86,908	65,235
Fuel Requirements	2,715	7,909		13,036		10,426	6,810
Daily Avg Demand still to be met (with flowing or ?)	107,622	309,650		405,241		324,893	214,106
Less Planned Flowing Supplies	107,622	289,650		405,241		304,893	189,106
Daily Avg Demand still to be met with ____	0	20,000		0		20,000	25,000
From DR28 response:	Nov-00	Dec-00		Jan-01		Feb-01	Mar-01
Planned Normal Storage Withdrawals	4,150,166	3,454,240		3,464,251		3,162,867	2,247,507

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest" - from worksheet tab titled "FOM Plans-REV"

Schedule MTL-38

Missouri Gas Energy
GR-2001-382

Table 2: Storage Inventory - Actuals

	EOM Storage Inventory [5]						
	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01
Williams SA-0014 (TSS)	14,122,908	15,593,505	9,966,153	3,747,983	3,784,819	2,515,613	870,709
Williams SA-0072 (FS)	975,369	1,121,952	1,121,952	1,041,777	1,041,777	41,777	0
PEPL WS-012626	778,088	0	0	0	0	0	0
PEPL WS-012627	165,143	1,051,108	1,004,903	575,538	368,179	169,435	39,824
Total	16,041,508	17,766,565	12,093,008	5,365,298	5,194,775	2,726,825	910,533

Given the information known when decisions were made regarding first-of-month nominations, Staff believes that the FOM nominations would have been different - November FOM nominations would have been higher to allow storage to be reserved for the normally colder months of December and January and to assure that the Company had sufficient withdrawal capabilities to cover a possible late winter cold snap. Storage balances and FOM nominations for this option is presented below:

Table 3-1: Storage withdrawals expected based on distribution of normal HDD

	Normal HDD	Monthly Distr.	Storage Distr.
Nov-00	657	14.3%	2,474,336
Dec-00	1,073	23.4%	4,122,699
Jan-01	1,218	26.6%	4,679,820
Feb-01	946	20.6%	3,634,737
Mar-01	691	15.1%	2,677,578
Total	4,585	100.0%	17,589,170

Storage distribution is based on the percentage of normal HDD occurring in that month times the total storage inventory. For November, would use the total MSQ less 500,000 allowed by Company for injections in Nov if weather is warmer than normal. For Dec - Mar, Company would know the beginning balance at start of November, so adjust accordingly - including additional 150,000 ISS allowed in Nov.

check: Oct end-of-month inv = 17,766,565

total expected storage if adjust Nov by 150,000 from ISS 17,739,170

Table 3-2: Staff's calculation of expected storage withdrawal and flowing supplies for Company planned normals

	Nov-00	Nov-00 Rev	Dec-00	Dec-00 Rev	Jan-01	Jan-01 Rev	Feb-01	Mar-01
Normal Monthly Demand	7,425,361	7,425,361	12,400,465	12,400,465	13,893,421	13,893,421	11,238,497	8,448,472
Daily Average Demand	247,512	247,512	400,015	400,015	448,175	448,175	401,375	272,531
Daily Demand to be met w/ storage w/d	82,478		132,990		150,962		129,812	86,373
plus storage w/d allowed for ISS in Nov	5,000							
less storage for excess from prior month			(4,793)		(84,104)		63,964	16,146
Subtotal of daily storage w/d	87,478	87,478	128,197	85,600	66,858	52,027	193,776	102,519
Daily Fuel Requirements	2,715	2,715	7,909	7,909	13,036	13,036	10,426	6,810
Expected Daily Flowing Supplies	162,749	162,749	279,727	322,324	394,353	409,184	218,025	176,822
% of planned normal met with storage (includes fuel)	35.0%	35.0%	31.4%	21.0%	14.5%	11.3%	47.1%	36.7%
% of planned normal met with flowing supplies (includes fuel)	65.0%	65.0%	68.6%	79.0%	85.5%	88.7%	52.9%	63.3%
Check if planned daily flowing covers warm weather requirements (used Company numbers from MTL-14 for Nov & Dec; see Table 1)	147,151		317,531		325,080		314,998	220,824
Staff Recommendation uses: Check if planned daily flowing covers warm weather requirements (used Company numbers for low-case from Reliability Report)	186,265		341,694		325,080		314,998	220,824

storage would need to be adjusted prior to making nominations based on expected end-of-month inventory for previous month	Since FOM exceeds warmest month requirement, would not have adjusted FOM.	Since too much storage was pulled in Nov, this is warm weather plus excess w/d in Nov.	Since too much storage was pulled in Dec, this is warm weather plus excess w/d in Dec.	Did not adjust for Feb & Mar - not as much of an issue in Feb and Mar since most of winter has past and have better handle on storage volumes available to meet requirements for the rest of the winter

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest" - from worksheet tab titled "FOM Plans-REV"

Schedule MTL-38

Missouri Gas Energy
GR-2001-382

Table 3-3: Effect of revised daily flowing supplies on expected end-of-month (EOM) storage inventory

Information Known As Of:	11/22/2000	12/21/2000	1/24/2001	2/21/2001
From Storage Analysis Report:	Nov-00	Dec-00	Jan-01	Feb-01
Forecasted demand and storage inj & w/d entered for actual HDD through:	11/21/2000	12/20/2000	1/23/2001	2/20/2001
Actual HDD through this date	838	1,368	1,076	956
Forecasted HDD for remainder of month	246	553	254	231
Known & expected HDD for month	1,084	1,921	1,330	1,187
Expected monthly HDD as % of normal HDD (calculated this - not in report)	165.0%	179.0%	109.2%	125.5%
Revised Expected EOM Storage Balances:				
EOM Storage Balances from above	13,339,839	5,745,612	5,341,774	2,848,859
Plus additional inv from prior month(s)		1,653,810	2,666,704	2,788,937
Plus additional demand that would have been covered with flowing supplies instead of storage w/d	1,653,810	1,012,894	122,233	(2,432,304)
	14,993,649	8,412,316	8,130,711	3,205,492
Storage inv expected for normal weather	15,142,225	11,019,530	6,339,710	2,704,973
Excess from storage for colder weather	148,576	2,607,214	(1,791,001)	(500,519)
So need to recover any excess w/d in next month (per day) or can w/d any additional storage	4,793	84,104	(63,964)	(16,146)

Table 3-4: Effect of revised daily flowing supplies on actual end-of-month storage inventory

	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Total	
Actual EOM Storage Balances	12,093,008	5,365,298	5,194,775	2,726,825	910,533	16,856,032	Actual
Plus additional inv from prior month(s)		1,653,810	2,666,704	2,788,937	356,633		
Plus additional demand that would have been covered with flowing supplies instead of storage w/d	1,653,810	1,012,894	122,233	(2,432,304)	(380,804)		
	13,746,818	8,032,002	7,983,712	3,083,458	886,362		
Actual Expected Net Withdrawals	4,019,747	5,714,816	48,290	4,900,254	2,197,096	16,880,203	Expected

Table 3-5: Comparison of Company and Staff FOM planned flowing supplies and storage withdrawals

		Company Planned Demand to be met with:				Staff revision: Expected storage withdrawal and flowing supplies for Company planned normals:			
	Normal Daily Avg Demand + Fuel	Daily Flowing Supplies	Flowing Supplies as % of Daily Avg for Month	Daily Storage w/d [6]	Storage as % of Daily Avg for Month	Daily Flowing Supplies	Flowing Supplies as % of Daily Avg for Month	Daily Storage w/d [6]	Storage as % of Daily Avg for Month
Nov-00	250,227	107,622	43.0%	142,605	57.0%	162,749	65.0%	87,478	35.0%
Dec-00	407,924	289,650	71.0%	98,274	24.1%	322,324	79.0%	85,600	21.0%
Jan-01	461,211	405,241	87.9%	55,970	12.1%	409,184	88.7%	52,027	11.3%
Feb-01	411,801	304,893	74.0%	86,908	21.1%	218,025	52.9%	193,776	47.1%
Mar-01	279,341	189,106	67.7%	65,235	23.4%	176,822	63.3%	102,519	36.7%

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest" - from worksheet tab titled "FOM Plans-REV"

Schedule MTL-38

Missouri Gas Energy

GR-2001-382

[1] Company states that wants to allow 500,000 so that if November is warmer than normal, still have room to inject; Company also stated in DR62 since storage was fuller than anticipated moved 500,000 to an ISS contract to allow for November injections

[2] Storage w/d planned for Nov-00 would include planned 4,000,000 TSS + 150,000 ISS (or 138,333/day) plus the PEPL/WS w/d (128,160 planned for November compared to 150,166 noted as normal w/d in the DR28 response)

[3] Report for numbers in previous column shows Oct 31 balance as 15,093,505 which would not include the ISS balance of 500,000 so TSS is adjusted to account for the ISS

[4] The forecasted HDD for the remainder of Dec is only through 12/30/00; so the HDD and the storage balances are adjusted to include 12/31/00 - based on Company rationale. Additional demand for 39 HDD is 433,822 (taken from 12/2 which had 39 HDD).

So if 12/31 demand is:	433,822	
These are taken from the Storage Analysis Report and are the same each day for the forecasted dates of 12/21 - 12/30	(51,219)	KN 107th & Elm
	(9,997)	Served KPOC
	(25,835)	Served PEPL (this looks like it includes WS and Dec plan is 6,339/day from WS)
	(230,982)	WNG Flowing
	115,789	needed from TSS

[5] Company states that storage reports available from Williams about the 13th of the month for the prior month. So Company knew actual prior months EOM balance when nominations made for following month.

[6] Recall that November storage withdrawals allow for 5,000 per day from ISS

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest" - from worksheet tab titled "FOM Plans-REV"

HC

Schedule MTL-38, page 10
Is Highly Confidential

HC

Schedule MTL-38

Missouri Gas Energy
GR-2001-382

Month	NYMEX Closing Price	Date
November, 2000	4.541	10/28/00
December, 2000	6.016	11/28/00
January, 2001	9.978	12/27/00
February, 2001	6.293	1/29/01
March, 2001	4.998	2/26/01

Source: NYMEX closing prices taken from The Wall Street Journal

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest" - from worksheet tab titled "NYMEX close"

Schedule MTL-38

MGE
Case No. GR-2001-387

Month of purchase	Month Hedged				
	Nov-00	Dec-00	Jan 2001	Feb-01	Mar-01
Jun-00	4.312	4.388	4.376	4.138	3.898
Jul-00	4.048	4.136	4.129	3.942	3.758
Aug-00	4.520	4.591	4.557	4.308	4.063
Sep-00	5.240	5.340	5.298	5.028	4.752
Oct-00	5.139	5.177	5.166	4.959	4.724
Average	4.652	4.726	4.705	4.475	4.239

Source: Nymex closing prices simple average by month
Date: March 22, 2002

June	6/1/00	6/2/00	6/5/00	6/6/00	6/7/00	6/8/00	6/9/00	6/12/00	6/13/00	6/14/00	6/15/00	6/16/00	6/19/00	6/20/00	6/21/00	6/22/00	6/23/00	6/26/00	6/27/00	6/28/00	6/29/00	6/30/00	Avg
Nov-00	4.150	4.092	4.383	4.286	3.983	4.140	4.155	4.215	4.168	4.250	4.404	4.455	4.155	4.186	4.413	4.543	4.446	4.525	4.600	4.415	4.423	4.466	4.312
Dec-00	4.250	4.187	4.465	4.355	4.070	4.215	4.220	4.280	4.240	4.320	4.470	4.530	4.230	4.285	4.500	4.620	4.521	4.595	4.665	4.485	4.493	4.536	4.388
Jan-01	4.260	4.192	4.465	4.350	4.070	4.205	4.210	4.268	4.232	4.309	4.454	4.513	4.213	4.275	4.486	4.600	4.503	4.575	4.640	4.465	4.471	4.516	4.376
Feb-01	4.055	3.990	4.245	4.135	3.860	3.990	3.994	4.049	4.015	4.082	4.216	4.271	3.971	4.040	4.236	4.342	4.243	4.297	4.360	4.195	4.200	4.240	4.138
Mar-01	3.845	3.785	4.020	3.920	3.652	3.773	3.776	3.830	3.798	3.855	3.976	4.021	3.730	3.810	3.980	4.078	3.983	4.019	4.080	3.925	3.930	3.965	3.898

July	7/5/00	7/6/00	7/7/00	7/10/00	7/11/00	7/12/00	7/13/00	7/14/00	7/17/00	7/18/00	7/19/00	7/20/00	7/21/00	7/24/00	7/25/00	7/26/00	7/27/00	7/28/00	7/31/00	Avg
Nov-00	4.166	4.100	4.302	4.290	4.306	4.101	4.218	4.205	4.064	4.085	3.955	3.932	3.907	3.810	3.760	3.890	3.951	3.956	3.906	4.048
Dec-00	4.236	4.185	4.390	4.385	4.400	4.195	4.305	4.295	4.150	4.165	4.043	4.015	3.987	3.892	3.843	3.975	4.050	4.061	4.020	4.136
Jan-01	4.216	4.180	4.380	4.380	4.395	4.191	4.295	4.280	4.138	4.150	4.034	4.005	3.979	3.890	3.841	3.970	4.048	4.060	4.019	4.129
Feb-01	3.95	3.945	4.145	4.150	4.175	3.981	4.090	4.090	3.963	3.975	3.866	3.842	3.819	3.735	3.696	3.810	3.888	3.905	3.869	3.942
Mar-01	3.7	3.705	3.905	3.920	3.955	3.786	3.895	3.900	3.788	3.802	3.702	3.682	3.659	3.585	3.553	3.660	3.738	3.753	3.719	3.758

August	8/1/00	8/2/00	8/3/00	8/4/00	8/7/00	8/8/00	8/9/00	8/10/00	8/11/00	8/14/00	8/15/00	8/16/00	8/17/00	8/18/00	8/21/00	8/22/00	8/23/00	8/24/00	8/25/00	8/28/00	8/29/00	8/30/00	8/31/00	Avg
Nov-00	4.080	4.297	4.342	4.360	4.390	4.437	4.455	4.488	4.495	4.371	4.299	4.474	4.491	4.530	4.800	4.590	4.652	4.602	4.683	4.736	4.697	4.850	4.840	4.520
Dec-00	4.180	4.395	4.442	4.440	4.450	4.483	4.505	4.538	4.550	4.445	4.373	4.535	4.575	4.618	4.862	4.665	4.720	4.670	4.750	4.800	4.770	4.920	4.910	4.591
Jan-01	4.175	4.385	4.432	4.425	4.425	4.460	4.477	4.510	4.522	4.422	4.353	4.505	4.540	4.579	4.810	4.625	4.667	4.620	4.696	4.744	4.720	4.861	4.850	4.557
Feb-01	4.005	4.190	4.227	4.205	4.180	4.200	4.212	4.245	4.258	4.177	4.120	4.249	4.284	4.324	4.540	4.368	4.399	4.352	4.432	4.480	4.465	4.590	4.580	4.308
Mar-01	3.840	3.995	4.022	3.990	3.938	3.948	3.955	3.986	4.001	3.942	3.895	4.000	4.035	4.074	4.267	4.110	4.133	4.089	4.162	4.213	4.205	4.323	4.315	4.063

September	9/1/00	9/5/00	9/6/00	9/7/00	9/8/00	9/11/00	9/12/00	9/13/00	9/14/00	9/15/00	9/18/00	9/19/00	9/20/00	9/21/00	9/22/00	9/25/00	9/26/00	9/27/00	9/28/00	9/29/00	Avg
Nov-00	4.905	5.030	5.157	5.100	4.999	5.135	5.105	5.157	5.312	5.300	5.394	5.477	5.433	5.402	5.266	5.412	5.450	5.447	5.124	5.186	5.240
Dec-00	4.975	5.104	5.233	5.187	5.100	5.235	5.209	5.260	5.412	5.400	5.495	5.585	5.548	5.517	5.383	5.525	5.565	5.562	5.231	5.281	5.340
Jan-01	4.915	5.043	5.172	5.140	5.070	5.203	5.178	5.225	5.367	5.355	5.445	5.525	5.495	5.470	5.350	5.485	5.525	5.522	5.222	5.256	5.298
Feb-01	4.640	4.763	4.884	4.865	4.815	4.938	4.913	4.955	5.088	5.075	5.152	5.228	5.210	5.203	5.100	5.225	5.260	5.257	4.971	5.026	5.028
Mar-01	4.365	4.483	4.597	4.580	4.540	4.661	4.636	4.675	4.799	4.785	4.855	4.930	4.923	4.923	4.840	4.960	4.990	4.988	4.727	4.778	4.752

October	10/2/00	10/3/00	10/4/00	10/5/00	10/6/00	10/9/00	######	10/11/00	10/12/00	10/13/00	10/16/00	10/17/00	10/18/00	10/19/00	10/20/00	10/23/00	10/24/00	10/25/00	10/26/00	10/27/00	10/30/00	10/31/00	Avg
Nov-00	5.352	5.348	5.290	5.152	5.008	5.150	5.134	5.508	5.630	5.537	5.364	5.439	5.228	4.951	4.937	5.072	4.820	4.659	4.664	4.541			5.139
Dec-00	5.435	5.438	5.383	5.248	5.113	5.250	5.236	5.599	5.728	5.649	5.492	5.553	5.349	5.071	5.055	5.193	4.940	4.771	4.753	4.652	4.485	4.490	5.177
Jan-01	5.400	5.398	5.348	5.215	5.085	5.217	5.211	5.511	5.693	5.624	5.475	5.535	5.344	5.081	5.062	5.200	4.960	4.795	4.777	4.677	4.520	4.531	5.166
Feb-01	5.160	5.158	5.118	5.000	4.881	5.007	5.001	5.301	5.442	5.377	5.242	5.295	5.121	4.891	4.875	5.000	4.780	4.612	4.597	4.497	4.352	4.381	4.959
Mar-01	4.905	4.903	4.864	4.765	4.658	4.769	4.764	5.058	5.180	5.122	4.991	5.040	4.877	4.658	4.646	4.757	4.555	4.400	4.382	4.287	4.157	4.191	4.724

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario-no change except for Nov and Dec 99 as warmest" - from worksheet tab titled "Available Hedge Price"

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Schedule MTL-39, pages 1-5
Are Highly Confidential

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Schedule MTL-39

Missouri Gas Energy
GR-2001-382

Table 1: First of Month Nominations on Duke must be made 6 business days before FOM. So, Staff reviewed decisions made on 10/24/00, 11/22/00, 12/21/00, 1/24/01, and 2/21/01.

Information Known As Of:	**10/24/2000**	**11/27/2000**		**12/21/2000**		**1/24/2001**	**2/21/2001**
From Storage Analysis Report:	**Oct-00**	**Nov-00**		**Dec-00**		**Jan-01**	**Feb-01**
Forecasted demand and storage inj & w/d entered for actual HDD through:	10/23/2000	11/26/2000		12/20/2000	Rev 12/20 to include 12/31 [4]	1/23/2001	2/20/2001
Actual HDD through this date	256	728		854	854	796	691
Forecasted HDD for remainder of month	77	104		514	553	301	248
Known & expected HDD for month	333	832		1,368	1,407	1,097	939
Expected monthly HDD as % of normal HDD (calculated this - not in report)		126.6%		127.5%	131.1%	90.1%	99.3%
			No Revision to Nov-00 for ISS [3]		Rev 12/20 to include 12/31 [4]		
EOM Storage Balances							
TSS	14,948,357	10,587,206	10,587,206	4,227,928	4,112,139	3,927,321	1,637,647
FSS	1,121,968	1,121,952	1,121,952	1,041,777	1,041,777	1,041,777	1,041,777
PEPL/WS	1,453,926	1,009,107	1,009,107	598,035	591,696	372,676	169,435
Total Storage Inventory	17,524,251	12,718,265	12,718,265	5,867,740	5,745,612	5,341,774	2,848,859
% of MSQ	98.6%	71.6%	71.6%	33.0%	32.3%	30.1%	16.0%
Inventory remaining to be filled [1]	243,378						
From Company Reliability Report:	**Nov-00**	**Dec-00**		**Jan-01**		**Feb-01**	**Mar-01**
Forecasted Demand:							
Base Case - 30 Year Normal Weather	7,400,361	12,375,465		13,868,421		11,213,497	8,423,472
Base Case - Rev (Uses Nov - Mar blf and hlf from regression of Jul 98 - Jun 00 data with normal weather, plus growth	7,686,797	11,857,776		13,298,119		10,480,179	8,063,218
Low Case	5,587,935	10,592,504		10,077,482		8,819,953	6,845,539
Low Case- Rev (Uses Nov - Mar blf and hlf from regression of Jul 98 - Jun 00 data with warmest month HDD, plus growth	5,114,047	8,778,422		9,553,228		7,500,159	6,454,007
High Case	9,140,788	17,896,663		16,186,584		13,732,070	10,514,864
Historical HDD data:	**Nov-00**	**Dec-00**		**Jan-01**		**Feb-01**	**Mar-01**
warmest month HDD	398	763		841		646	529
normal month HDD	657	1,073		1,218		946	691
coldest month HDD	877	1,606		1,629		1,274	1,057
Using Company heatload & baseload factors in Reliability Report w/ historical HDD	**Nov-00**	**Dec-00**		**Jan-01**		**Feb-01**	**Mar-01**
Number of days in month	30	31		31		28	31
estimated demand w/ warmest HDD	5,591,673	9,457,584		10,273,551		8,090,819	7,009,684
estimated demand w/ normal HDD	8,301,101	12,700,529		14,217,391		11,229,153	8,704,384
estimated demand w/ coldest HDD	10,602,546	18,276,302		18,516,908		14,660,398	12,533,151
From Company Supply/Demand Summary:	**Nov-00**	**Dec-00**		**Jan-01**		**Feb-01**	**Mar-01**
Normal Monthly Demand	7,425,361	12,400,465		13,893,421		11,238,497	8,448,472
Daily Average Demand	247,512	400,015		448,175		401,375	272,531
Demand to be met w/ storage w/d [2]							
TSS	138,333	91,935		49,355		79,914	61,115
FSS	0	0		0		0	0
PEPL/WS	4,272	6,339		6,615		6,994	4,120
Total Storage w/d	142,605	98,274		55,970		86,908	65,235
Fuel Requirements	2,715	7,909		13,036		10,426	6,810
Daily Avg Demand still to be met (with flowing or ?)	107,622	309,650		405,241		324,893	214,106
Less Planned Flowing Supplies	107,622	289,650		405,241		304,893	189,106
Daily Avg Demand still to be met with ____	0	20,000		0		20,000	25,000
From DR28 response:	**Nov-00**	**Dec-00**		**Jan-01**		**Feb-01**	**Mar-01**
Planned Normal Storage Withdrawals	4,150,166	3,454,240		3,464,251		3,162,867	2,247,507

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario for REV base case and low case from regression" - from worksheet tab titled "FOM Plans-REV"

Schedule MTL-39

Missouri Gas Energy
GR-2001-382

Table 2: Storage Inventory - Actuals

	EOM Storage Inventory [5]						
	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01
Williams SA-0014 (TSS)	14,122,908	15,593,505	9,966,153	3,747,983	3,784,819	2,515,613	870,709
Williams SA-0072 (FS)	975,369	1,121,952	1,121,952	1,041,777	1,041,777	41,777	0
PEPL WS-012626	778,088	0	0	0	0	0	0
PEPL WS-012627	165,143	1,051,108	1,004,903	575,538	368,179	169,435	39,824
Total	16,041,508	17,766,565	12,093,008	5,365,298	5,194,775	2,726,825	910,533

Given the information known when decisions were made regarding first-of-month nominations, Staff believes that the FOM nominations would have been different - November FOM nominations would have been higher to allow storage to be reserved for the normally colder months of December and January and to assure that the Company had sufficient withdrawal capabilities to cover a possible late winter cold snap. Storage balances and FOM nominations for this option is presented below:

Table 3-1: Storage withdrawals expected based on distribution of normal HDD

	Normal HDD	Monthly Distr.	Storage Distr.
Nov-00	657	14.3%	2,474,336
Dec-00	1,073	23.4%	4,122,699
Jan-01	1,218	26.6%	4,679,820
Feb-01	946	20.6%	3,634,737
Mar-01	691	15.1%	2,677,578
Total	4,585	100.0%	17,589,170

Storage distribution is based on the percentage of normal HDD occurring in that month times the total storage inventory. For November, would use the total MSQ less 500,000 allowed by Company for injections in Nov if weather is warmer than normal. For Dec - Mar, Company would know the beginning balance at start of November, so adjust accordingly - including additional 150,000 ISS allowed in Nov.

check: Oct end-of-month inv = 17,766,565

total expected storage if adjust Nov by 150,000 from ISS 17,739,170

Table 3-2: Staff's calculation of expected storage withdrawal and flowing supplies for Company planned normals

	Nov-00	Nov-00 Rev	Dec-00	Dec-00 Rev	Jan-01	Jan-01 Rev	Feb-01	Feb-01 Rev	Mar-01	Mar-01 Rev
Normal Monthly Demand	7,686,797	7,686,797	11,857,776	11,857,776	13,298,119	13,298,119	10,480,179	10,480,179	8,063,218	8,063,218
Daily Average Demand	256,227	256,227	382,509	382,509	428,972	428,972	374,292	374,292	260,104	260,104
Daily Demand to be met w/ storage w/d	82,478		132,990		150,962		129,812		86,373	
plus storage w/d allowed for ISS in Nov	5,000									
less storage for excess from prior month			(22,212)		(98,409)		45,241		3,386	
Subtotal of daily storage w/d	87,478	93,474	110,778	85,031	52,553	35,430	175,053	162,096	89,759	62,106
Daily Fuel Requirements	2,715	2,715	7,909	7,909	13,036	13,036	10,426	10,426	6,810	6,810
Expected Daily Flowing Supplies	171,464	165,468	279,640	305,387	389,455	406,578	209,665	222,622	177,155	204,808
% of planned normal met with storage (includes fuel)	33.8%	36.1%	28.4%	21.8%	11.9%	8.0%	45.5%	42.1%	33.6%	23.3%
% of planned normal met with flowing supplies (includes fuel)	66.2%	63.9%	71.6%	78.2%	88.1%	92.0%	54.5%	57.9%	66.4%	76.7%
Check if planned daily flowing covers warm weather requirements (see Table 1)	170,468		283,175		308,169		267,863		208,194	
Plus storage over/under from prior month	Yes		No		No		No		No	
Prior Staff Recommendation uses: Check if planned daily flowing covers warm weather requirements (used Company numbers for low-case from Reliability Report)	186,265		341,694		325,080		314,998		220,824	

storage would need to be adjusted prior to making nominations based on expected end-of-month inventory for previous month

This is the warm weather requirement less 150,000 for ISS in Nov

Since too much storage was pulled in Nov, this is warm weather plus excess w/d in Nov.

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario for REV base case and low case from regression" - from worksheet tab titled "FOM Plans-REV"

Schedule MTL-39

Missouri Gas Energy
GR-2001-382

Table 3-3: Effect of revised daily flowing supplies on expected end-of-month (EOM) storage inventory

Information Known As Of:	11/27/2000	12/21/2000	1/24/2001	2/21/2001
From Storage Analysis Report:	Nov-00	Dec-00	Jan-01	Feb-01
Forecasted demand and storage inj & w/d entered for actual HDD through:	11/26/2000	12/20/2000	1/23/2001	2/20/2001
Actual HDD through this date	728	854	796	691
Forecasted HDD for remainder of month	104	553	301	248
Known & expected HDD for month	832	1,407	1,097	939
Expected monthly HDD as % of normal HDD (calculated this - not in report)	126.6%	131.1%	90.1%	99.3%
Revised Expected EOM Storage Balances:				
EOM Storage Balances from above	12,718,265	5,745,612	5,341,774	2,848,859
Plus additional inv from prior month(s)		1,735,380	2,223,227	2,264,674
Plus additional demand that would have been covered with flowing supplies instead of storage w/d	1,735,380	487,847	41,447	(2,303,588)
	14,453,645	7,968,839	7,606,448	2,809,945
Storage inv expected for normal weather	15,142,225	11,019,530	6,339,710	2,704,973
Excess from storage for colder weather	688,580	3,050,691	(1,266,738)	(104,972)
So need to recover any excess w/d in next month (per day) or can w/d any additional storage	22,212	98,409	(45,241)	(3,386)

Table 3-4: Effect of revised daily flowing supplies on actual end-of-month storage inventory

	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Total	
Actual EOM Storage Balances	12,093,008	5,365,298	5,194,775	2,726,825	910,533	16,856,032	Actual
Plus additional inv from prior month(s)		1,735,380	2,223,227	2,264,674	(38,914)		
Plus additional demand that would have been covered with flowing supplies instead of storage w/d	1,735,380	487,847	41,447	(2,303,588)	486,762		
Subtotal	13,828,388	7,588,525	7,459,449	2,687,911	1,358,381		
Actual Expected Net Withdrawals	3,938,177	6,239,863	129,076	4,771,538	1,329,530	16,408,184	Expected

Table 3-5: Comparison of Company and Staff FOM planned flowing supplies and storage withdrawals

		Company Planned Demand to be met with:				Staff revision: Expected storage withdrawal and flowing supplies for Company planned normals:			
	Normal Daily Avg Demand + Fuel	Daily Flowing Supplies	Flowing Supplies as % of Daily Avg for Month	Daily Storage w/d [5]	Storage as % of Daily Avg for Month	Daily Flowing Supplies	Flowing Supplies as % of Daily Avg for Month	Daily Storage w/d [6]	Storage as % of Daily Avg for Month
Nov-00	258,942	107,622	41.6%	142,605	55.1%	165,468	63.9%	93,474	36.1%
Dec-00	390,418	289,650	74.2%	98,274	25.2%	305,387	78.2%	85,031	21.8%
Jan-01	442,008	405,241	91.7%	55,970	12.7%	406,578	92.0%	35,430	8.0%
Feb-01	384,718	304,893	79.3%	86,908	22.6%	222,622	57.9%	162,096	42.1%
Mar-01	266,914	189,106	70.8%	65,235	24.4%	204,808	76.7%	62,106	23.3%

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario for REV base case and low case from regression" - from worksheet tab titled "FOM Plans-REV"

Schedule MTL-39

Missouri Gas Energy

GR-2001-382

[1] Company states that wants to allow 500,000 so that if November is warmer than normal, still have room to inject; Company also stated in DR62 since storage was fuller than anticipated moved 500,000 to an ISS contract to allow for November injections

[2] Storage w/d planned for Nov-00 would include planned 4,000,000 TSS + 150,000 ISS (or 138,333/day) plus the PEPL/WS w/d (128,160 planned for November compared to 150,166 noted as normal w/d in the DR28 response)

[3] Report for numbers in previous column shows Oct 31 balance as 15,093,505 which would not include the ISS balance of 500,000. However made adjustment at start of November to use ISS storage per Company plans. End of November balances are from Company Storage

[4] The forecasted HDD for the remainder of Dec is only through 12/30/00; so the HDD and the storage balances are adjusted to include 12/31/00 - based on Company rationale. Additional demand for 39 HDD is 433,822 (taken from 12/2 which had 39 HDD).

So if 12/31 demand is:	433,822	
These are taken from the Storage Analysis Report and are the same each day for the forecasted dates of 12/21 - 12/30	(51,219)	KN 107th & Elm
	(9,997)	Served KPOC
	(25,835)	Served PEPL (this looks like it includes WS and Dec plan is 6,339/day from WS)
	(230,982)	WNG Flowing
	115,789	needed from TSS

[5] Company states that storage reports available from Williams about the 13th of the month for the prior month. So Company knew actual prior months EOM balance when nominations made for following month.

[6] Recall that November storage withdrawals allow for 5,000 per day from ISS

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario for REV base case and low case from regression" - from worksheet tab titled "FOM Plans-REV"

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Schedule MTL-39, page 10
Is Highly Confidential

HC

Schedule MTL-39

Missouri Gas Energy
GR-2001-382

Month	NYMEX Closing Price	Date
November, 2000	4.541	10/28/00
December, 2000	6.016	11/28/00
January, 2001	9.978	12/27/00
February, 2001	6.293	1/29/01
March, 2001	4.998	2/26/01

Source: NYMEX closing prices taken from The Wall Street Journal

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario for REV base case and low case from regression" - from worksheet tab titled "NYMEX close"

Schedule MTL-39

MGE
Case No. GR-2001-387

Month of purchase	Month Hedged				
	Nov-00	Dec-00	Jan 2001	Feb-01	Mar-01
Jun-00	4.312	4.388	4.376	4.138	3.898
Jul-00	4.048	4.136	4.129	3.942	3.758
Aug-00	4.520	4.591	4.557	4.308	4.063
Sep-00	5.240	5.340	5.298	5.028	4.752
Oct-00	5.139	5.177	5.166	4.959	4.724
Average	4.652	4.726	4.705	4.475	4.239

Source: Nymex closing prices simple average by month
Date: March 22, 2002

June	6/1/00	6/2/00	6/5/00	6/6/00	6/7/00	6/8/00	6/9/00	6/12/00	6/13/00	6/14/00	6/15/00	6/16/00	6/19/00	6/20/00	6/21/00	6/22/00	6/23/00	6/26/00	6/27/00	6/28/00	6/29/00	6/30/00	Avg
Nov-00	4.150	4.092	4.383	4.286	3.983	4.140	4.155	4.215	4.168	4.250	4.404	4.455	4.155	4.186	4.413	4.543	4.446	4.525	4.600	4.415	4.423	4.466	4.312
Dec-00	4.250	4.187	4.465	4.355	4.070	4.215	4.220	4.280	4.240	4.320	4.470	4.530	4.230	4.285	4.500	4.620	4.521	4.595	4.665	4.485	4.493	4.536	4.388
Jan-01	4.260	4.192	4.465	4.350	4.070	4.205	4.210	4.268	4.232	4.309	4.454	4.513	4.213	4.275	4.486	4.600	4.503	4.575	4.640	4.465	4.471	4.516	4.376
Feb-01	4.055	3.990	4.245	4.135	3.860	3.990	3.994	4.049	4.015	4.082	4.216	4.271	3.971	4.040	4.236	4.342	4.243	4.297	4.360	4.195	4.200	4.240	4.138
Mar-01	3.845	3.785	4.020	3.920	3.652	3.773	3.776	3.830	3.798	3.855	3.976	4.021	3.730	3.810	3.980	4.078	3.983	4.019	4.080	3.925	3.930	3.965	3.898

July	7/5/00	7/6/00	7/7/00	7/10/00	7/11/00	7/12/00	7/13/00	7/14/00	7/17/00	7/18/00	7/19/00	7/20/00	7/21/00	7/24/00	7/25/00	7/26/00	7/27/00	7/28/00	7/31/00	Avg
Nov-00	4.166	4.100	4.302	4.290	4.306	4.101	4.218	4.205	4.064	4.085	3.955	3.932	3.907	3.810	3.760	3.890	3.951	3.956	3.906	4.048
Dec-00	4.236	4.185	4.390	4.385	4.400	4.195	4.305	4.295	4.150	4.165	4.043	4.015	3.987	3.892	3.843	3.975	4.050	4.061	4.020	4.136
Jan-01	4.216	4.180	4.380	4.380	4.395	4.191	4.295	4.280	4.138	4.150	4.034	4.005	3.979	3.890	3.841	3.970	4.048	4.060	4.019	4.129
Feb-01	3.95	3.945	4.145	4.150	4.175	3.981	4.090	4.090	3.963	3.975	3.866	3.842	3.819	3.735	3.696	3.810	3.888	3.905	3.869	3.942
Mar-01	3.7	3.705	3.905	3.920	3.955	3.786	3.895	3.900	3.788	3.802	3.702	3.682	3.659	3.585	3.553	3.660	3.738	3.753	3.719	3.758

August	8/1/00	8/2/00	8/3/00	8/4/00	8/7/00	8/8/00	8/9/00	8/10/00	8/11/00	8/14/00	8/15/00	8/16/00	8/17/00	8/18/00	8/21/00	8/22/00	8/23/00	8/24/00	8/25/00	8/28/00	8/29/00	8/30/00	8/31/00	Avg
Nov-00	4.080	4.297	4.342	4.360	4.390	4.437	4.455	4.488	4.495	4.371	4.299	4.474	4.491	4.530	4.800	4.590	4.652	4.602	4.683	4.736	4.697	4.850	4.840	4.520
Dec-00	4.180	4.395	4.442	4.440	4.450	4.483	4.505	4.538	4.550	4.445	4.373	4.535	4.575	4.618	4.862	4.665	4.720	4.670	4.750	4.800	4.770	4.920	4.910	4.591
Jan-01	4.175	4.385	4.432	4.425	4.425	4.460	4.477	4.510	4.522	4.422	4.353	4.505	4.540	4.579	4.810	4.625	4.667	4.620	4.696	4.744	4.720	4.861	4.850	4.557
Feb-01	4.005	4.190	4.227	4.205	4.180	4.200	4.212	4.245	4.258	4.177	4.120	4.249	4.284	4.324	4.540	4.368	4.399	4.352	4.432	4.480	4.465	4.590	4.580	4.308
Mar-01	3.840	3.995	4.022	3.990	3.938	3.948	3.955	3.986	4.001	3.942	3.895	4.000	4.035	4.074	4.267	4.110	4.133	4.089	4.162	4.213	4.205	4.323	4.315	4.063

September	9/1/00	9/5/00	9/6/00	9/7/00	9/8/00	9/11/00	9/12/00	9/13/00	9/14/00	9/15/00	9/18/00	9/19/00	9/20/00	9/21/00	9/22/00	9/25/00	9/26/00	9/27/00	9/28/00	9/29/00	Avg
Nov-00	4.905	5.030	5.157	5.100	4.999	5.135	5.105	5.157	5.312	5.300	5.394	5.477	5.433	5.402	5.266	5.412	5.450	5.447	5.124	5.186	5.240
Dec-00	4.975	5.104	5.233	5.187	5.100	5.235	5.209	5.260	5.412	5.400	5.495	5.585	5.548	5.517	5.383	5.525	5.565	5.562	5.231	5.281	5.340
Jan-01	4.915	5.043	5.172	5.140	5.070	5.203	5.178	5.225	5.367	5.355	5.445	5.525	5.495	5.470	5.350	5.485	5.525	5.522	5.222	5.256	5.298
Feb-01	4.640	4.763	4.884	4.865	4.815	4.938	4.913	4.955	5.088	5.075	5.152	5.228	5.210	5.203	5.100	5.225	5.260	5.257	4.971	5.026	5.028
Mar-01	4.365	4.483	4.597	4.580	4.540	4.661	4.636	4.675	4.799	4.785	4.855	4.930	4.923	4.923	4.840	4.960	4.990	4.988	4.727	4.778	4.752

October	10/2/00	10/3/00	10/4/00	10/5/00	10/6/00	10/9/00	10/10/00	10/11/00	10/12/00	10/13/00	10/16/00	10/17/00	10/18/00	10/19/00	10/20/00	10/23/00	10/24/00	10/25/00	10/26/00	10/27/00	10/30/00	10/31/00	Avg
Nov-00	5.352	5.348	5.290	5.152	5.008	5.150	5.134	5.508	5.630	5.537	5.364	5.439	5.228	4.951	4.937	5.072	4.820	4.659	4.664	4.541			5.139
Dec-00	5.435	5.438	5.383	5.248	5.113	5.250	5.236	5.599	5.728	5.649	5.492	5.553	5.349	5.071	5.055	5.193	4.940	4.771	4.753	4.652	4.485	4.490	5.177
Jan-01	5.400	5.398	5.348	5.215	5.085	5.217	5.211	5.511	5.693	5.624	5.475	5.535	5.344	5.081	5.062	5.200	4.960	4.795	4.777	4.677	4.520	4.531	5.166
Feb-01	5.160	5.158	5.118	5.000	4.881	5.007	5.001	5.301	5.442	5.377	5.242	5.295	5.121	4.891	4.875	5.000	4.780	4.612	4.597	4.497	4.352	4.381	4.959
Mar-01	4.905	4.903	4.864	4.765	4.658	4.769	4.764	5.058	5.180	5.122	4.991	5.040	4.877	4.658	4.646	4.757	4.555	4.400	4.382	4.287	4.157	4.191	4.724

Source: Jenkins Supplemental Direct Workpaper titled "MGE Scenario for REV base case and low case from regression" - from worksheet tab titled "Available Hedge Price"

Schedule MTL-40
Case No. GR-2001-382

Summary of Jenkins' Proposed Storage Utilization - Normal Winter

Line No.	Description	Source	Nov	Dec	Jan	Feb	Mar	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Normal Monthly Demand (Jenkins Estimate)	[1]	7,686,797	11,857,776	13,298,119	10,480,179	8,063,218	51,386,089
2	"Warmest Month" Demand (Jenkins Estimate)	[2]	5,114,040	8,778,425	9,553,239	7,500,164	6,454,014	37,399,882
3	Proposed Storage Withdrawals	[3]	2,572,757	3,079,351	3,744,880	2,980,015	1,609,204	13,986,207
4	MGE's Total Storage Capacity	[4]						17,767,629
5	Unutilized Storage in Normal Winter Under Jenkins' Proposal	[5]						3,781,422
6	% of Jenkins' Proposed Unutilized Storage Capacity to Total Capacity	[6]						21.3%

NOTE: All figures above were taken from Jenkins' Supplemental Direct Workpaper entitled "MGE Scenario for REV Base Case and Low Case from Regression" that is presented as Schedule MTL-39 and which she used to develop her storage utilization disallowance proposal. The specific tabs in that spreadsheet from which the data above was sourced are noted below.

Source:
[1] Tab "FOM Plans- REV", Table 3-2, line 78, columns C, E, G, I and K.
[2] Tab "FOM Plans- REV", Table 3-2, line 91, columns C, E, G, I and K.
[3] Line 1 minus Line 2.
[4] Tab "Normals & Forecasted EOM", Total MSQ - all storage contracts (Note - no line or column numbers were provided on this tab of the Workpaper).
[5] Line 4 minus Line 3.
[6] Line 3 divided by Line 5.

Inaccuracy of Ms. Jenkins' Regression at Estimating MGE's Demand

Line No.	Description	From Schedule MTL-14 Actual HDD	Normal HDD	Actual Demand	Estimated Demand Produced by Jenkins' Regression (No Growth)	% Difference between Actual Demand and Estimated Demand	% HDD is Above/ (Below) Normal	If Demand Growth is Considered, Demand Variance Would be Slightly...
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Nov-97	710	657	7,923,099	8,152,126	3%	8%	
2	Dec-97	978	1073	11,478,932	10,832,857	-6%	-9%	
3	Jan-98	945	1218	11,443,336	10,507,495	-8%	-22%	WORSE
4	Feb-98	662	946	8,431,917	7,602,079	-10%	-30%	WORSE
5	Mar-98	797	691	9,774,280	9,048,296	-7%	15%	
6	Total			49,051,564	46,142,853			
7	Nov-98	503	657	5,509,211	6,111,219	11%	-23%	BETTER
8	Dec-98	940	1073	10,788,379	10,458,198	-3%	-12%	
9	Jan-99	1145	1218	13,190,277	12,479,386	-5%	-6%	
10	Feb-99	674	946	7,913,473	7,720,392	-2%	-29%	
11	Mar-99	666	691	7,885,820	7,756,707	-2%	-4%	
12	Total			45,287,160	44,525,902			
13	Nov-99	391	657	4,414,515	5,006,961	13%	-40%	SAME
14	Dec-99	888	1073	9,843,466	9,945,506	1%	-17%	
15	Jan-00	1052	1218	11,490,604	11,562,457	1%	-14%	
16	Feb-00	685	946	8,165,749	7,828,846	-4%	-28%	
17	Mar-00	537	691	6,042,011	6,484,838	7%	-22%	
18	Total			39,956,345	40,828,608			
19	Nov-00	833	657	8,899,925	9,364,839	5%	27%	
20	Dec-00	1445	1073	16,074,078	15,437,222	-4%	35%	
21	Jan-01	1113	1218	12,718,983	12,163,883	-4%	-9%	
22	Feb-01	996	946	11,009,323	10,895,136	-1%	5%	
23	Mar-01	764	691	8,348,578	8,722,934	4%	11%	
24	Total			57,050,887	56,584,014			
25	Nov-01	398	657	4,317,691	5,075,977	18%	-39%	WORSE
26	Dec-01	844	1073	9,996,257	9,511,690	-5%	-21%	
27	Jan-02	974	1218	10,624,016	10,793,419	2%	-20%	
28	Feb-02	756	946	8,404,975	8,528,867	1%	-20%	
29	Mar-02	759	691	8,465,251	8,673,637	2%	10%	
30	Total			41,808,190	42,583,590			

In 5 of the past 25 months, Ms. Jenkins' demand estimate would vary from the actual demand by 10% or more

Estimation of MGE's Monthly Winter Demand Using Jenkins' Supplemental Direct Testimony Regression

(All demand figures below produced using the demand estimation model reflected in Jenkins' Supplemental Direct Workpaper titled "MGE Regression Using MTL-14 and DR 146")

Line No.	Description		Actual HDD	No. of Days in Month	Estimated Demand (in MMBtu) Baseload	Heatload	Total (No Growth)
	(a)		(b)	(c)	(d)	(e)	(f)
1	Baseload Factor =	38,397.13					
2	Heatload Factor =	9,859.45					
3		Nov-97	710	30	1,151,914	7,000,212	8,152,126
4		Dec-97	978	31	1,190,311	9,642,546	10,832,857
5		Jan-98	945	31	1,190,311	9,317,184	10,507,495
6		Feb-98	662	28	1,075,120	6,526,959	7,602,079
7		Mar-98	797	31	1,190,311	7,857,985	9,048,296
8		Total			5,797,967	40,344,886	46,142,853
9		Nov-98	503	30	1,151,914	4,959,305	6,111,219
10		Dec-98	940	31	1,190,311	9,267,887	10,458,198
11		Jan-99	1145	31	1,190,311	11,289,075	12,479,386
12		Feb-99	674	28	1,075,120	6,645,272	7,720,392
13		Mar-99	666	31	1,190,311	6,566,396	7,756,707
14		Total			5,797,967	38,727,935	44,525,902
15		Nov-99	391	30	1,151,914	3,855,047	5,006,961
16		Dec-99	888	31	1,190,311	8,755,195	9,945,506
17		Jan-00	1052	31	1,190,311	10,372,146	11,562,457
18		Feb-00	685	28	1,075,120	6,753,726	7,828,846
19		Mar-00	537	31	1,190,311	5,294,527	6,484,838
20		Total			5,797,967	35,030,641	40,828,608
21		Nov-00	833	30	1,151,914	8,212,925	9,364,839
22		Dec-00	1445	31	1,190,311	14,246,911	15,437,222
23		Jan-01	1113	31	1,190,311	10,973,572	12,163,883
24		Feb-01	996	28	1,075,120	9,820,016	10,895,136
25		Mar-01	764	31	1,190,311	7,532,623	8,722,934
26		Total			5,797,967	50,786,047	56,584,014
27		Nov-01	398	30	1,151,914	3,924,063	5,075,977
28		Dec-01	844	31	1,190,311	8,321,379	9,511,690
29		Jan-02	974	31	1,190,311	9,603,108	10,793,419
30		Feb-02	756	28	1,075,120	7,453,747	8,528,867
31		Mar-02	759	31	1,190,311	7,483,326	8,673,637
32		Total			5,797,967	36,785,623	42,583,590
	Source:	[1]	[2]		[3]	[4]	[5]

Sources:

[1] Baseload and heatload factors from Jenkins' Supplemental Direct workpaper entitled "MGE Regression Using MTL-14 and DR 146".

[2] Actual HDD from Schedule MTL-14.

[3] Baseload demand calculated as Baseload Factor times No. of Days.

[4] Heatload demand calculated as Heatload Factor times Actual HDD.

[5] Column (d) plus column (e).

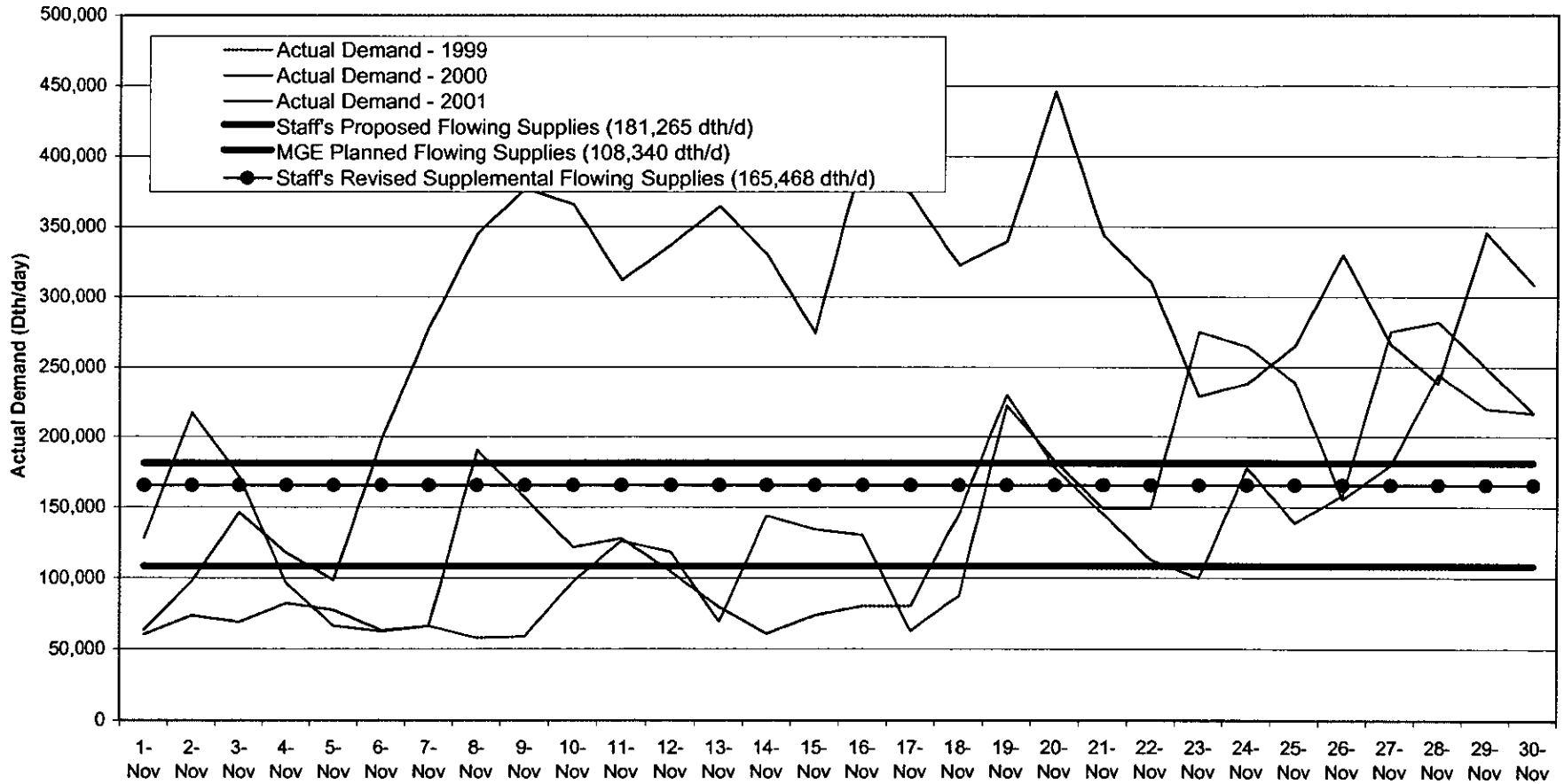
HC

Schedule MTL-42
Is Highly Confidential

HC

Schedule MTL-43
Case No. GR-2001-382

Comparison of MGE's Planned Flowing Supplies versus Staff's "Original" and "Revised Supplemental" Proposals Based on Actual Daily Demand for Novemer 1999, 2000 and 2001



	1999	2000	2001	Total
No. of Days Demand < 108,340	10	3	14	27
No. of Days Demand < 181,265	21	5	24	50
No. of Days Demand < 165,468	19	5	22	46