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Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

Of

Thomas J. Sullivan

On Behalf of Missouri Gas Energy

Jefferson City, Missouri

November 2006

Table of Contents

Q. Please state your name and business address.

A. Thomas J. Sullivan, 11401 Lamar, Overland Park, Kansas 66211.

Q. Are you the same Thomas J. Sullivan who filed direct testimony in this case on behalf of Missouri Gas Energy ("MGE" or "Company")?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony in this matter?

A. In my rebuttal testimony, I will first submit revised tables from the depreciation report that I prepared for the Company, "*Report on Depreciation Accrual Rates Prepared for Missouri Gas Energy*" by Black & Veatch Corporation dated June 2005 ("Depreciation Report" or "June 2005 Report"). I submitted the Depreciation Report as Schedule TJS-2 with my direct testimony. I am also submitting a revised Schedule TJS-1 that I included with my direct testimony to include the additional cases in which I have filed testimony since direct testimony was filed in this case. I will then address the prepared direct testimony of Mr. Gregory E. Macias of the Missouri Public Service Commission Staff with regard to MGE's depreciation rates. In this regard, I will focus on the inconsistencies and unreasonableness of his approach with particular attention to the average service lives ("ASL") and net salvage Staff recommends for Account 380 – Services and Account 376 – Mains, respectively.

Q. What revisions do you have with regard to Schedule TJS-2, the Depreciation Report?

A. I am making two revisions to Schedule TJS-2. First, Staff witness Mr. Macias discovered a calculation error in Table 3-4, Summary of Regional Gas Depreciation Rate Survey, Page 13. A formula was incorrectly calculating the regional estimated average service life (Column AN). Because I rely on the results of this column as the basis for some of my recommendations, I find it is necessary to submit revised tables for those tables that were impacted. Second, I inadvertently left out the net salvage allowances for the general plant accounts. The revised tables I am submitting include these allowances and the corresponding correction of my proposed depreciation rates.

Q. What tables did you revise?

A. I submit the following revised tables from Schedule TJS-2:

Table 3-4, Summary of Regional Gas Depreciation Rate Survey

Table 3-5, Recommended Average Service Lives

Table 4-1, Analysis of Accumulated Depreciation Reserve

Table 4-2, Summary of Recommended Depreciation Accrual Rates

These tables are attached to my rebuttal testimony.

Q. What are the impacts of your proposed revisions?

A. The miscalculation of average service lives only affected those accounts where I solely based my recommended average service life on the regional averages. This impacted three accounts: Accounts 375, 383, and 390. For Accounts 375 and 390 (Structures and Improvements), the revised survey results indicate an average service life of 46 and 44 years, respectively. I recommend a 45 year ASL. For Account 383 (Regulators), the revised survey results indicate an average service

life of 42 years. These changes result in a slight decrease in annual depreciation expense of $94,237 from my initial recommendation.

The omission of the net salvage allowance only impacted Accounts 390, 392, and 396. I am proposing the same net salvage allowance for these accounts, 40 percent, 10 percent, and 20 percent, respectively, that I recommended in the prior depreciation report I performed for MGE (June 2000 Report). This correction results in a slight decrease in annual depreciation expense of $54,913 from my initial recommendation.

The two corrections I am making reduce the annual depreciation expense by a total of $149,150 from my initial recommendation[1]. I recommend an increase in annual depreciation expense of $2,645,707 (based on plant in service at 12/31/2004) as shown in my revised Table 4-2, Column K compared to the $2,794,857 in my original Table 4-2.

There were also other accounts whose regional average service lives were miscalculated and have been corrected; however, I rely on bases other than the regional survey for those accounts. I further explain the basis for my recommended average service lives on Page 14 of the Depreciation Report contained in Schedule TJS-2 with my direct testimony. For example, although the regional survey indicates a 37-year average service life for services (Account 380), I continue to recommend an average service life of 32 years for this account based on my simulated plant balance analysis and other analyses that I will

further discuss in my rebuttal testimony. These analyses are specific to the Company's data for this account.

Q. Is there another difference between the depreciation rates you are recommending in your rebuttal testimony and your recommendation on Page 3, Lines 1-11 of your direct testimony?

A. Yes, I misspoke on Page 3, Lines 3-5 of my direct testimony when I referred to the depreciation rates in Column H of Table 4-2 as remaining life rates. The depreciation rates in Column H of Table 4-2 are not remaining life rates but rather whole life rates reflecting a reserve adjustment. As such, I should have recommended the depreciation rates in Column H of Table 4-2, not the depreciation rates shown in Column J of Table 4-1 as stated on Page 3, Line 11 of my direct testimony.

In the prior question and answer, the depreciation rates in Column H of Table 4-2 are the same as the depreciation rates shown in Column U of Table 4-1. These depreciation rates, as corrected in my rebuttal, are the depreciation rates I am recommending that the Company use.

Q. Do you sponsor any schedules with your rebuttal testimony?

A. Yes, I sponsor the following nine schedules, all of which were prepared by me or under my supervision and direction:

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[1] Schedule 2, Table 4-2, Column K submitted with Mr. Sullivan's direct testimony indicated an increase in depreciation expense of $2,794,857.

1. Rebuttal Schedule TJS-1 – Comparison of Macias' and Company Proposed Rates
2. Rebuttal Schedule TJS-2 – Typical Service Installation
3. Rebuttal Schedule TJS-3 – Comparison of MGE's Account 380 Plant Investment to Laclede Gas Company, Ameren UE, and Aquila-MPS
4. Rebuttal Schedule TJS-4 – Missouri Gas Energy - Comparison of Predicted and Actual Survivor Curves (Account 380 – Services) for an R1.5 42-year Iowa Curve
5. Rebuttal Schedule TJS-5 – Missouri Gas Energy - Comparison of Predicted and Actual Survivor Curves (Account 380 – Services)
6. Rebuttal Schedule TJS-6 – Comparison of Depreciation Rates for 6 Comparable Companies Used in Staff's ROE Calculation
7. Rebuttal Schedule TJS-7 - Photograph of 2539 Bellefontaine, Kansas City, Missouri
8. Rebuttal Schedule TJS-8 – Comparison of Mains and Services Historical Reimbursements and Effect on Recommended Net Salvage Allowance
9. Rebuttal Schedule TJS-9 – Comparison of Corrected Macias' and Company Proposed Rates

Q. How have you organized the balance of your testimony?

A. I first provide an executive summary of my rebuttal testimony. I next summarize the issues by outlining Staff's and my position with regard to the appropriate

depreciation rates to use for MGE. I will then address some background and recent history regarding the development of MGE's depreciation expense rates as well as other cases before the Commission that are relevant to this case. I will then specifically focus on the reasonableness (or lack thereof) of Staff's recommended 42-year ASL for Services and the inconsistencies that make Staff's recommended net salvage allowance for Mains of a positive 5 percent unreasonable.

Executive Summary

Q. Please summarize why the Commission should adopt your recommended 32-year ASL for Services and reject the Staff's recommended 42-year ASL.

A. With regard to Services, the Commission should accept my recommendations because:

- The rates I am recommending for Services and all accounts are based on the June 2005 Report based on a study of actual MGE experience and data, consideration of experience of 10 Midwestern utilities, engineering judgment, and consideration of circumstances specific to MGE.
- The retirement analysis performed in connection with this rebuttal testimony clearly shows that the 32-year ASL for Services that I am recommending is much more reasonable than the 42-year ASL that Staff is recommending.

- I have provided information in my rebuttal testimony that clearly demonstrates significant differences between MGE and the surrogate companies that Staff uses and the inappropriateness of basing MGE's ASL for Services on these surrogate companies.
- I have provided information in my rebuttal testimony that clearly demonstrates that MGE's safety line replacement program ("SLRP") significantly impacts the ASL for Services on MGE's system.
- The comparable company analyses provided in connection with my rebuttal testimony clearly show that Staff's ASL recommendation for Services is unreasonable and my recommendation is reasonable.

The Commission should reject Staff's recommendation because:

- Staff has performed no study of MGE or conditions specific to MGE's operation.
- Staff's recommendations are based on a methodology that is too narrow, circular in reasoning, and inconsistent with the approach the Staff uses for ROE, return of capital.
- Staff's results are clearly unreasonable when compared to other utilities.
- Staff has ignored MGE-specific data and has overlooked significant differences between MGE and Laclede, Ameren, and Aquila.
- Staff is applying a different standard to MGE than it is to Atmos under similar circumstances.

Q. Please summarize why the Staff's recommended net salvage allowance of positive 5 percent for Mains is unreasonable.

A. The Commission should reject Mr. Macias' net salvage allowance of five percent for Mains. Mr. Macias clearly did not understand the implications of including reimbursements in his net salvage allowance. The correct net salvage allowance is negative 15 percent, excluding reimbursements. This value is also consistent with Staff's proposed and accepted net salvage for Laclede and Atmos.

Q. Please summarize the depreciation rates you are recommending that the Commission adopt for MGE.

A. I recommend that the Commission adopt the depreciation rates contained in my June 2005 Report as corrected in my rebuttal testimony (Revised Table 4-2 Column H). If the Commission wishes to consider Mr. Macias' approach, his approach must be corrected to reflect an appropriate ASL for Services of 32 years and an appropriate net salvage allowance on Mains of negative 15 percent as shown in my Rebuttal Schedule TJS-9. If Mr. Macias' recommended depreciation rates are corrected to reflect a more reasonable ASL for Services and a correct net salvage allowance for Mains, the resulting total annual depreciation expense is approximately $4.2 million greater than under existing depreciation rates. The Company's proposed annual depreciation expense increase, based on plant in service at June 30, 2006, is $2.9 million.

Summary of Issues

Q. Please summarize Staff's position with regard to MGE's depreciation rates.

A. In his direct testimony, Mr. Gregory Macias of the Missouri Public Service Commission Staff recommends a decrease in the Company's annual depreciation expense of $100,342 based on plant in service at June 30, 2006.

Q. What is the basis of Mr. Macias recommended average service lives?

A. With the exception of Account 397.1 (ERT Equipment), he uses the average or the median of the average service lives that Staff "determined in recent depreciation studies of similar Missouri jurisdictional natural gas local distribution (LDC) companies, Aquila, Inc, Ameren UE, and Laclede Gas, to develop the surrogate average service lives for MGE". These three companies are the three largest LDCs in Missouri. Mr. Macias recommends no change in the depreciation rate for Account 397.1.

Q. Did Mr. Macias use all of the gas utilities regulated by the Missouri Public Service Commission in his analyses?

A. No, he did not. He did not include MGE, Atmos Energy Corporation, or Southern Missouri Gas Company. Of these three utilities, his exclusion of Atmos Energy is particularly important as discussed later in my rebuttal testimony.

Q. Did Mr. Macias indicate why he did not use information specific to MGE in the development of his recommended average service lives?

A. In his direct testimony on Page 5, Lines 22-24, Mr. Macias states:

> "In time, MGE will build a database sufficient for actuarial analysis. However, at present, the absence of historical retirement data prevents a reliable study of Company-specific average service lives."

Q. Is this statement accurate?

A. No, it is not. First, there is not an absence of historical retirement data. The data exists but there is only a short historical record of retirements. Second, the lack of this history simply makes it inconvenient for the Staff to perform analyses using certain software with which they are familiar and comfortable; it does not prevent a study. I rely upon simulated plant balance as the basis of my recommended average service lives for some accounts as discussed on Page 14 of Schedule TJS-2. My simulated plant balance analyses are based on Company-specific data. Further, as discussed later in my testimony, there is adequate retirement data in the Company's continuing property record to perform analyses other than the standard retirement analysis, however, this standard retirement analysis would appear to be the only analysis that the Staff is willing to perform, or upon which it is willing to rely.

Q. Is the use of average service lives of Ameren, Aquila, and Laclede reasonable for use on MGE's system?

A. No, there are two serious problems with the Staff's suggestion. First, and most importantly, it ignores available Company-specific data that provides valuable information related to the mortality (expected life) of MGE's properties. Second, even if no data existed for MGE, using only three companies' results is not a large enough sample on which to base reasonable averages. Staff uses six companies to determine MGE's allowed rate of return on equity, but only three companies on which to base average service lives. Ironically, Staff excludes Laclede Gas Company ("Laclede") from its set of comparable companies for ROE because "most of its operations are confined to Missouri and are regulated by the Missouri PSC."[2]. In other words, the Staff recognizes the circularity of using Missouri utilities for the determination of ROE (return on capital), but does not use the same standard for depreciation expense (return of capital).

Q. Are you saying that sufficient Company-specific data exists upon which to estimate the mortality of MGE's properties?

A. Yes. The analyses performed in connection with my study (Schedule TJS-2), relies upon Company-specific data. Table 3-1 through 3-3 on Pages 6 through 8 of the June 2005 Report are examples of analyses performed on Company-specific data. I will provide additional analysis later in my rebuttal testimony that further demonstrates that sufficient retirement data exists to test the reasonableness of specific Iowa curves and average service lives following a retirement analysis approach.

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[2] Staff witness David Murray's direct testimony, Page 22, Lines 3-4.

Q. Does Schedule TJS-2 contain an analysis of comparable companies?

A. Yes, it does. This analysis is summarized in Schedule TJS-2, Table 3-4. Further, I provide additional analyses later in my rebuttal testimony that demonstrate how unreasonable and biased it is for Staff to rely on three "comparable" companies from the jurisdiction regulated by this Commission. I consider information from 10 Midwestern gas utilities as well as Company-specific data in my recommendation of depreciation rates.

Q. Does Mr. Macias use any Company-specific data in developing the depreciation rates he recommends for MGE?

A. Yes, he does. He uses salvage, cost of removal, and reimbursement data (i.e. net salvage) data specific to MGE as a basis for the recommended net salvage allowances that he used in the derivation of his depreciation rates for MGE. However, he inconsistently and inappropriately uses this data to produce a very unreasonable result, specifically for Mains, which I will demonstrate later in my rebuttal testimony.

Q. What depreciation rates does the Company propose?

A. The Company proposes the depreciation rates I recommend in Schedule TJS-2, Table 4-2, Column H as revised in my rebuttal testimony.

Q. What are the primary differences between the depreciation rates you recommend and the Company proposes and those Mr. Macias recommends?

A. The primary differences are between the ASL for Services (Account 380) and the net salvage for Mains (Account 376), which he uses to calculate his recommended depreciation rates.

Q. Do you and Mr. Macias differ on depreciation rates for any accounts other than Mains and Services?

A. Yes, we do. However, I will focus my attention in my rebuttal testimony on Mains and Services.

Q. Please explain the differences that you describe for Accounts 376 and 380.

A. I recommend a 32-year ASL for Services with an annual net salvage allowance of negative $800,000. I base my recommended ASL for Services on Company-specific data using simulated plant balance analysis and my annual net salvage allowance is based on recent historical net salvage experienced by the Company. My depreciation reserve analysis indicates the reserve balance for Account 380 is adequate; therefore I make no adjustment in the depreciation rate for depreciation reserve. Using these three components, I calculate a depreciation rate of 3.41 percent.

Mr. Macias recommends a 42-year average service life for Services, which is based on the average service lives that Staff determined in recent depreciation studies for Aquila, Ameren UE, and Laclede. He recommends a net salvage ratio of negative 28 percent, which is based on the 10-year average (1995-2004) of Company-specific data. Using these two components, he calculates a

depreciation rate of 3.05 percent. Mr. Macias makes no depreciation reserve adjustment for any accounts.

For Mains, I am recommending no change to the Company's existing average service life of 44-years and no net salvage, which is based on my analysis of the Company's recent historical data. My depreciation reserve analysis indicates the reserve balance for Account 376 is slightly under-recovered (0.16 percent), therefore I make a slight adjustment in the depreciation rate for depreciation reserve. Using these three components, I calculate a depreciation rate of 2.43 percent.

Mr. Macias recommends a 45-year average service life for Mains, which is based on the median ASL that Staff determined in recent depreciation studies for Aquila, Ameren UE, and Laclede. He recommends a net salvage ratio of 5 percent primarily based on the five-year average (2000-2004) including salvage, cost of removal, and reimbursements. As discussed later in my testimony, his inclusion of reimbursements is inconsistent with his testimony and he misunderstands the nature of the reimbursements and thereby produces a net salvage for Mains that is completely unreasonable. Using these two components (ASL and net salvage), he calculates a depreciation rate for Mains of 2.11 percent. Mr. Macias makes no depreciation reserve adjustment to Mains.

Q. Have you prepared an exhibit comparing your recommendations with Mr. Macias'?

A. Yes, I have. In Rebuttal Schedule TJS-1, I compare my proposed depreciation rates (as corrected earlier in my rebuttal testimony) with his recommended

depreciation rates in Schedule GEM-4. My June 2005 Report is based on plant balances at December 31, 2004 and Mr. Macias' calculations are based on June 30, 2006. To eliminate this timing difference, I calculate depreciation accruals for the 12-month period ended June 30, 2006 using my recommended rates. Mr. Macias is recommending an approximate $100,000 reduction in annual depreciation expense, and I am recommending an approximate $2.8 million increase based on plant in service at June 30, 2006. The difference between the two proposals is $2.9 million. Over 70 percent ($2.1 million) of the difference is related to Mains and Services.

Q. Have you identified any basic flaws in Mr. Macias' approach in determining his recommended depreciation rates?

A. Yes, I have identified four. First, Mr. Macias fails to use available Company-specific data where it exists on which to base his recommendations. Second, he uses a very limited sample on which to base his recommended average service lives. Third, he inconsistently and inappropriately uses Company net salvage data to produce a very unreasonable result, specifically for Mains. Lastly, he fails to perform a depreciation reserve analysis. I will first discuss the background of MGE's depreciation rates and then I will discuss each of these four flaws in my rebuttal testimony.

Background

Q. Why is the background or history of MGE's depreciation rates relevant?

A. This background lays the important foundation for 1) my June 2005 Report and 2) my rebuttal of Staff's proposals with regard to depreciation rates. It is important for the Commission to understand this history because it serves to differentiate MGE from other Missouri-regulated gas utilities regulated whose depreciation rates the Staff would have the Commission use as a proxy for MGE.

Q. Please provide some background with regard to the determination of depreciation rates for MGE.

A. In 1995, Black & Veatch was retained to perform a depreciation rate study for MGE. This 1995 study was filed with the Missouri PSC in June 1995. Prior to the issuance of this study, we informed Staff that an adequate continuing property record did not exist to perform survivor curve analysis as a basis to determine ASLs for MGE. In the June 1995 study, we recommended modifications to rates for some accounts with no overall change in the total annual depreciation expense for MGE. The June 1995 study was accepted as meeting the filing requirements of 4 CSR 240.040(6). Neither the Company nor Staff proposed any change in depreciation rates at that time.

In its general rate filing in Case No. GR-98-140, the Company proposed no change in its depreciation rates. Black & Veatch did provide recommended rates for the Company's automated meter reading ("AMR") equipment as that did

not exist at the time of the June 1995 study. The Staff recommended changes to the depreciation rates for Accounts 376 (Mains), 380 (Services), 381 (Meters), and 382 (Meter Installations); changes to the rates for the AMR equipment; and that MGE be ordered to reconstruct a continuing property record.

In its order in Case No. GR-98-140, the Commission agreed with the results of my study when it found:

> "...that there is not sufficient evidence upon which to support any changes to the existing depreciation rates. Given the fact that MGE will be filing a new depreciation study by June 2000, the Commission finds it would be appropriate to defer any change in existing depreciation rates for existing plant until then. The Commission expects the depreciation study and other documentation submitted pursuant to Rule 4 CSR 240-40.040(6) filed by the Company to be as complete as possible and further expects the Company to cooperate with Staff and OPC in evaluating the need for changes to the existing property depreciation rates at that time."

With regard to the AMR equipment, the Commission found:

> "... the evidence shows that the ERT devices have a service life of 20 years and that a depreciation rate for the ERT devices of five percent would be appropriate."

The ERTs are the encoder-receiver-transmitter devices that are booked to Account 397.1. Finally, with regard to the issue of the Company's continuing property record, the Commission found:

> "... it would not be appropriate to require the reconstruction or re-creation of records that apparently do not exist or cannot be completed by any reasonable efforts of MGE."

Q. Did Black & Veatch prepare a depreciation study for MGE to meet the requirements of 4 CSR 240.040(6) in June 2000?

A. Yes, this report was contained in Schedule TJS-1, which was attached to my rebuttal testimony in Case No. GR-2001-292, as well as Schedule TJS-3, which

was attached to my rebuttal testimony in Case No. GR-2004-0209. I refer to this report as the "June 2000 Report".

Q. Did the Company cooperate with Staff in the preparation of the June 2000 Report?

A. Yes. The Company and Black & Veatch met with Staff, including Mr. Paul Adam, on several occasions prior to and after the issuance of the June 2000 Report.

Q. Did these meetings have a direct impact on your June 2000 Report?

A. Yes. Based on our meeting with Staff, we changed certain elements of the June 2000 report to accommodate Staff's requests.

In both our 1995 and 2000 studies, we performed a survey of the depreciation rates of other Midwestern gas utilities as one consideration in developing rates for MGE. Prior to issuance of the June 2000 Report, Staff indicated that it was concerned with using the survey in the 1995 study because it had no basis to determine what methodology was used to determine the rates for these utilities. Therefore, at Staff's request, we added this information to Table 3-3 in the June 2000 Report to the extent that it could be determined. Table 3-3 in the June 2000 Report is similar to my Table 3-4 in Schedule TJS-2 filed with my direct testimony in this case.

In addition, based on my discussions with Mr. Adam, I agreed with Mr. Adam that determining net salvage based on an annual dollar accrual (retained

within depreciation reserve) was a preferable approach to applying a percentage net salvage allowance to total plant based on very limited interim retirement activity (the approach used my Mr. Macias in this case). I have consistently used this approach ever since in the depreciation studies I have performed. I will highlight the significant problems with Mr. Macias' approach later in my rebuttal testimony when I discuss the net salvage allowance he proposes for Mains.

Q. What depreciation rates did the Company propose in Case No. GR-2001-292?

A. The Company proposed depreciation rates that were half-way between the rates I recommended in the June 2000 Report and the existing rates at that time. Company witness Mr. Michael Noack further explained the basis for the Company's conservative approach in his direct testimony in Case No. GR-2001-292 on Pages 18-20.

Q. What was the Staff's position in that case with regard to depreciation rates?

A. Mr. Paul Adam recommended that Laclede's depreciation rates be used as a surrogate for MGE primarily based on his familiarity with and confidence in Laclede's continuing property record.

Q. Were Mr. Adam's recommended depreciation rates in Case No. GR-2001-292 consistent with the understanding you reached in the meetings between the Company and Staff?

A. No, there were two significant deviations. One was with regard to the treatment of net salvage. The other was with regard to Mr. Adam's use of one Company as the basis for his recommendations. The comparable company analysis in the June 2000 report was specifically tailored at the request of the Staff to provide as much readily available information regarding how those companies determined their depreciation rates. Further, we specifically included the major Missouri gas utilities in our sample.

Q. Were Mr. Adam's recommendations in Case No. GR-2001-292 consistent with the recommendations of the Staff in the Case No. GR-98-140?

A. No, they were not. In Case No. GR-98-140, Staff witness Mr. Woodie Smith made recommendations with regard to the depreciation rates applicable to Mains, Services, Meters, and Meter Installations. These recommendations were primarily based on consideration of Missouri Public Service Company's (Aquila) gas distribution depreciation rates. On Page 12 of his direct testimony in Case No. GR-98-140, Mr. Smith states:

> "Q. Why would you compare the impact of Missouri Public Service's depreciation rates on MGE's plant property and not Union Electric's or Laclede's depreciation rates?
> A. In my opinion, the existing prescribed Missouri Public Service depreciation rates are based on an analysis of plant property history which would closely match MGE's plant property history, if it were available."

Further on Page 14, Lines 1-3, Mr. Smith states:

"Staff proposes the depreciation rates developed for Missouri Public Service in 1988 through actuarial analysis be prescribed for Accounts 376 (Mains), 380 (Services), 381 (Meters), and 382 (Meter/House Regulator Installations)."

Q. Did you file rebuttal testimony in Case No. GR-2001-292?

A. Yes, I did.

Q. What was the outcome of Case No. GR-2001-292?

A. The Staff and other parties along with the Company entered into a settlement on all issues in that case. As part of that settlement, the depreciation rates agreed to were the same as the depreciation rates recommended by Mr. Adam (exclusive of net salvage) with the exception of the rate for Mains, which was set equal to the rate for Services.

Q. What was the Company's proposal in Case No. GR-2004-0209 with regard to depreciation rates?

A. The Company proposed to use the rates contained in my June 2000 Report.

Q. What was the Staff's position?

A. Staff witness Ms. Jolie Mathis proposed the depreciation rates that resulted from the settlement in the prior case (i.e. the depreciation rates that were currently in effect at that time). Ms. Mathis essentially adopted and supported the analyses of Mr. Adam.

Q. Were Mr. Adam's or Ms. Mathis' recommended average service lives (ASLs) for MGE based on a study of MGE?

A. No, they were not. Their recommended ASLs were based on Mr. Adam's study of Laclede. Their recommendations for MGE were based on superimposing the ASLs he had determined for Laclede onto MGE.

Q. What was the outcome of Case No. GR-2004-0209 with regard to depreciation rates?

A. In the settlement in that case, the parties agreed to keep the existing depreciation rates with the exception of Services. The ASL for Services was set at 37 years, the half-way point between the existing depreciation rate and the rate I was recommending in that case.

Q. What depreciation rates does the Company propose in this matter?

A. The Company is proposing the rates I recommended in my June 2005 Report as corrected in my rebuttal testimony. I included this report with my direct testimony as Schedule TJS-2 in this matter and have submitted amended tables with my rebuttal testimony.

Q. Have any other events occurred since MGE's last rate case that are relevant to your rebuttal?

A. Yes. In a Laclede rate case (Case No. GR-99-315), the Commission addressed the calculation of net salvage when establishing depreciation rates. The Commission ruled in favor of Laclede and found its accrual method was just and reasonable. However to ensure that the method for tracking net salvage is clear and that

ratepayers do not overpay for net salvage costs, the Commission required a separate accounting for the net salvage in the depreciation reserve.

Q. Do you generally agree with this Order?

A. Yes, I do. Prior to this Order, the accrual of net salvage was being booked outside of the depreciation reserve based on prior Commission Orders. In prior cases, I filed testimony indicating that the accrual for net salvage needed to be kept within depreciation reserve. However, I continue to believe that the use of an annual dollar allowance for net salvage (supported by both Mr. Adam and me in prior cases) is superior to the approach used by Mr. Macias.

Q. Is the study you prepared in June 2005 consistent with this Order?

A. Yes. The rates I am recommending are included in the revised Tables 4-1 (column U) and 4-2 (column H) included with my rebuttal testimony. These rates include the average service life and net salvage allowance added together. However, I am only recommending a net salvage allowance for only four accounts. The average service life and net salvage components of these rates are as follows:

	ASL[3]	Net Salvage	Total
Account 380 - Services	3.13%	Positive 0.28%	3.41%
Account 390 – Structures	2.09%	Negative 0.88%	1.21%
Account 392 – Transportation	9.10%	Negative 0.91%	8.19%
Account 396 – Power Op. Eq.	6.69%	Negative 1.33%	5.36%

The depreciation rates I am recommending for all the other accounts are attributable to ASL only with no allowance for net salvage.

Q. Are Mr. Macias' recommendation consistent with this Order?

A. I believe so.

Q. Do you agree with Mr. Macias' application of this Order?

A. No. As I discuss later in my testimony, I believe that the net salvage allowances Mr. Macias proposes for Mains are flawed and unreasonable.

Q. Are you familiar with any other gas companies regulated by the Missouri PSC who are currently seeking changes in depreciation rates?

A. Yes, I am. In Case No. GR-2006-0387, Atmos is seeking a change in its depreciation rates as part of its rate case.

[3] The average service life component of the rate includes the reserve adjustment calculated in Schedule TJS-2, Table 4-1.

Q. What is Staff recommending with respect to Atmos' depreciation rates?

A. Staff witness Mr. Guy Gilbert "recognizes that Atmos management has reviewed and accepted its own depreciation consultant's recommendation that, as a whole, the annual depreciation accrual should be reduced by approximately $591,000. Staff will not disagree with Atmos' management's conclusion and recommends that Atmos annual depreciation accrual should be reduced by approximately $591,000."[4] In other words, Staff is accepting Atmos' depreciation study in its totality.

Q. Did Staff perform a depreciation study using Atmos' data?

A. This is unclear in Mr. Gilbert's testimony. He states in his testimony that "Atmos had expressed concerns providing the [historical data for life study purposes to Staff] because of incomplete, or otherwise inadequate data being received when Atmos acquired each property. This significantly handicapped Staff's ability to perform a thorough analysis of the accounts."[5]

Q. How do you perceive Staff's recommendation with regard to Atmos?

A. Staff applies a different standard to MGE than it has applied to Atmos. First, Atmos and MGE are in similar situations with regard to the condition of their actuarial data. However, Staff did not force the concept of using surrogate

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[4] Direct Testimony of Staff witness Guy Gilbert, Page 9, Lines 9-13.

[5] Direct Testimony of Staff witness Guy Gilbert, Page 4, Lines 12-15.

average service lives on Atmos. Staff accepted Atmos' recommendations which included analysis of Atmos-specific data. In the case of MGE, Staff ignores the recommendations and MGE-specific data set forth in MGE's depreciation study. Not only did Staff not perform a "thorough" actuarial study for Atmos to determine average service lives, Staff "was not able to study salvage rates, as the rates are merely a component of a larger problem involving the Company's (Atmos) record keeping"[6]. Further, "[b]ecause of the lack of data to perform an accurate depreciation analysis, it was not possible for Staff to accurately determine theoretical reserve for each account"[7].

Q. If there was a "lack of data to perform an accurate depreciation analysis", how did Atmos develop its recommended depreciation rates?

A. According to Atmos' depreciation witness, Mr. Donald S. Roff, "[f]or some asset categories, the age of both surviving and retired property is known, and actuarial analysis was utilized for these property groups...For the remaining asset categories, the age or retirements is not known, and a simulation analysis technique was utilized."[8] Mr. Roff's recommended rates are determined by using the average life group procedure and the remaining life technique.

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[6] Direct Testimony of Staff witness Guy Gilbert, Page 8.

[7] Ibid.

[8] Direct Testimony of Atmos witness Donald S. Roff, Page 9, Lines 11-14.

Q. Is a simulation analysis technique the same as what you refer to in your testimony and June 2005 Report as simulated plant balance?

A. Yes. This is the same technique that I use in my study that the Staff has rejected in my study for MGE.

Q. Why is the simulation method acceptable to Staff as a method to determine average service lives for Atmos, but not for MGE?

A. I don't know. Staff's positions in the Atmos and MGE case are clearly inconsistent.

Q. What is Staff recommending with respect to Atmos' depreciation rate for Account 380?

A. Staff is adopting Atmos' recommendation of a 33-year ASL for Services (R5 curve) and a net salvage of negative 35 percent. This results in a remaining life rate of 4.06 percent. I am recommending a 32-year ASL, negative $800,000 annual net salvage allowance, and a whole life rate. My recommended rate is 3.41 percent. We are recommending essentially the same ASL, yet Staff accepts Atmos' recommendation. The Company's proposed rate for Services is even lower than Atmos' after consideration of net salvage and yet the Staff rejects the Company's recommendation. The Company's proposed rate for Services is based on the whole life method whereas Atmos is based on the remaining life method and yet the Staff accepts Atmos' recommendation and rejects the Company's recommendation.

Q. Do you have any further observations with regard to the Staff's position over the last decade?

A. Yes, I do. Over the last decade, MGE's depreciation rates have been represented by four different Staff witnesses. These four different Staff witnesses have used three different approaches to determine ASL and four different approaches with regards to net salvage.

Over the past decade, Staff's focus has consistently been too narrow. Staff has largely ignored the depreciation reports the Company has filed even after the Company has sought input from Staff. I don't understand why depreciation reports must be filed on a five-year cycle to comply with 4 CSR 240.040(6) if the Staff is going to ignore them. Staff has also consistently ignored Company-specific information that can be found in MGE's CPR to perform actuarial analyses.

In addition, Staff applies different standards for different companies. Atmos and MGE are clear examples of how two companies with similar situations have been treated differently by the Staff. Both have records that were compromised during acquisitions, yet Staff is willing to accept approaches for Atmos that they have rejected for MGE.

My approach on MGE's behalf has been consistent over the last decade, my positions have been consistent, and I have searched for ways to improve my analyses by incorporating MGE-specific information and data as the Company's database has grown. Further, I have incorporated suggestions and input from the

Staff into my analyses consistent with the Commission's direction in Case No. GR-98-140.

Services

Q. What do you mean by a Service?

A. A Service line includes all of the materials, labor, and cost of installation associated with the facilities between the main and the meter set. The meter set includes the meter, regulator and associated piping between the regulator and meter and up to the customer's house piping. Rebuttal Schedule TJS-2 graphically depicts these components.

Q. What ASL does Mr. Macias recommend for Services?

A. Mr. Macias recommends a 42 year ASL for Services. This is the average of the ASL's for Aquila, Ameren, and Laclede.

Q. Does Mr. Macias perform any tests of the reasonableness of his proposal to use surrogate ASLs for MGE's Services, which is based on Aquila, Ameren and Laclede?

A. Mr. Macias does not mention any such tests in his direct testimony. He simply states in his testimony that Staff believes that this approach is reasonable for three reasons:

"1. The comparison LDCs operate under the jurisdiction of the PSC;

2. The various accounts' average service lives are based on depreciation studies conducted by Staff using depreciation databases with adequate placement and retirement histories;

3. Using an average of the individual LDCs' average service lives mitigates the differences between MGE's plant, operations and management and that of the comparison LDCs." [9]

Q. Is Mr. Macias' approach to determining the ASL for Services reasonable?

A. No. It fails to take into consideration data and circumstances specific to MGE, especially circumstances that differentiate MGE from the three utilities he uses as a surrogate.

Q. What ASL do you recommend for Services?

A. I am recommending an ASL for services of 32 years. This is primarily based on the simulated plant balance analysis of MGE-specific data as discussed in the June 2005 Report. My recommendation is also supported by retirement analysis of MGE-specific data discussed later in my rebuttal testimony. In addition, the scope and magnitude of MGE's safety line replacement program ("SLRP") indicates that an ASL for MGE that is less than Laclede, Ameren, and Aquila is reasonable.

Q. Have you done any analysis to attempt to determine the magnitude of these surrogate companies Safety Line Replacement Program relative to MGE's?

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[9] Staff witness Gregory E. Macias, Page 6.

A. Yes, I have. I performed an analysis comparing these three company's and MGE's gross plant investment in Services. I present this analysis in Rebuttal Schedule TJS-3. Over the period (1989-2004), when all four utilities were fully engaged in safety line replacement programs ("SLRP"), MGE's gross plant investment in Services increased by 189 percent whereas Laclede's increased by 132 percent. Ameren and Aquila-MPS' plant investment has increased by 164 and 56 percent, respectively. Further, over 85 percent of MGE's investment in Service lines in 2004 has been added since 1988.

In addition, MGE was replacing an average of 20,000 Services per year between 1989 and 2000 and approximately 50 percent of MGE's customers had a replaced Service by 2000, whereas Laclede was replacing an average 1,373 Services per year by the year 2000, affecting about 2 percent of its customer base. I do not have this information available to compare with Ameren or Aquila.

Simulated Plant Balance Analysis

Q. Mr. Macias states that the absence of historical retirement data prevents a reliable study of Company-specific average service lives. Does he reasonably describe the situation?

A. No, he does not. I agree that Company-specific data is insufficient to perform retirement analysis, following traditional approaches and using generally available tools. However, with the passage of time, there are acceptable methods

other than retirement analyses that may be used and there are other approaches that may be used.

Q. Is the June 2005 Black & Veatch report based on MGE-specific information?

A. Yes. In addition to other available information, I performed a simulated plant balance ("SPB") analysis using MGE-specific data.

Q. What do you mean by a simulated plant balance analysis?

A. Simulated plant balance analysis is one of the traditional approaches used as a tool to evaluate retirement (service life) characteristics. In performing retirement analysis, we fit a standard curve type (typically Iowa Curves) to retirement history. In this regard, we select the Iowa Curve (and ASL) which best predicts retirements given vintage additions and retirements.

We often encounter situations, such as with MGE's data, where reliable retirement history by vintage is not available. In many cases, where a detailed history of retirements is not available, we can develop a history of annual plant additions and balances. Following the simulated plant balance approach, we select the Iowa Curve (and ASL) which best predicts annual plant balances given vintage additions and annual plant balances.

Q. Does the simulated plant balance approach produce reliable results?

A. Not always, but then neither does retirement analysis. I do not consider simulated plant balance analyses to be as rigorous as retirement analysis. However, when

the extensive data requirements required by retirement analysis are not available, the simulated plant balance approach can provide valuable information. Further, I have found the SPB approach quite informative as a test of the reasonableness of the results of retirement analyses. The mere fact that the approach may not be as rigorous as another does not mean that it should be dismissed out of hand, especially if data necessary to perform other analyses are not available or are compromised.

Q. Did the simulated plant balance analysis you performed in connection with the June 2005 Black & Veatch Report produce reliable results for Services?

A. Yes, the analysis indicated a service life reasonably in line with what I expected based on my experience and other available information. In addition, depending on the data set used, the curve types that produced the best fits are unusually flat or steep. As shown in Tables 3-1 and 3-2 of Schedule TJS-2 (the June 2005 Report), the results of my simulated plant balance analysis showed that the ASL of Services was between 22 and 32 years.

Q. Have you performed any additional tests of the reasonableness of the 42-year ASL recommended by Staff?

A. Yes, I have. I tested the reasonableness of Staff's specific conclusion that the average of the three surrogate companies' ASL's "mitigates the differences

between MGE's plant, operations and management and that of the comparison"[10] companies.

Retirement Analysis

Q. Although you indicate that data are insufficient to perform a traditional retirement analysis, is the MGE data sufficient to perform an analysis using other approaches and other tools?

A. Yes, it is. Contrary to Mr. Macias' conclusion, existing data is more than sufficient to test the hypothesis of whether a specific ASL and curve shape lies within a range of reasonableness.

Q. If MGE's data does not provide sufficient information to perform traditional analyses, how can you use it to test the hypothesis of whether a specific curve shape and ASL is reasonable?

A. Retirement analysis requires two pieces of information. One is the original cost of additions by vintage. The other is retirements by vintage and transaction year. Mathematically, two independent variables (plant additions and retirements) are "combined" to predict the dependent variable (average service life).

MGE's data prior to 1994 is limited. However, beginning in 1994, MGE has maintained a complete continuing property record. This data includes information regarding additions and retirements (by vintage) for each year (beginning in 1994). Vintages retired include investment from 1900 to date. This

[10] Staff witness Gregory E. Macias Direct Testimony, Page 6

data is precisely the information required to perform retirement analyses. MGE data also include vintage year plant balances beginning in 1994.

From MGE's continuing property record, we can perform retirement analysis on retirements made subsequent to 1994 on property-installed subsequent to 1994. We cannot perform retirement analysis on retirements made subsequent to 1994 on property installed prior to 1994 because the continuing property record contains no information with regard to the original investment. For property installed prior to 1994, the only information we have available are plant balances by vintage for each year beginning with 1994.

If we can find a way to determine the level of original additions, we can evaluate the reasonableness of service lives based on retirements reported during the 1994 through 2004 period. Retirements so considered can include retirements related to property not only installed subsequent to 1994 but also for retirements during the period associated with vintages prior to 1994.

For a specified survivor curve, I can calculate the original investment based on plant balances by vintage (age). I have this information. MGE supplies me with the continuing property record and Mr. Macias supplies me with the ASL. Mr. Macias did not specify a survivor curve type, however according to his workpapers, the survivor curve that Staff found appropriate for Laclede, Ameren, and Aquila Services range from R1.5 to R4.

For example, the plant balance applicable to Services at the beginning of 1994, for the 1985 vintage, amounts to $4,472,684. Using an R1.5[11] 42-year Iowa Curve, survivors (plant balance) at the beginning of 1994 amount to 95.71 percent of 1985 additions. Thus, if retirements follow the R1.5 42-year dispersion, the original investment in 1985 amounts to $4,673,114 ($4,472,684 / 95.71 percent). I then divide the plant balance (1985 vintage) as of the end of 2004 ($4,080,796) by the 1985 additions to calculate that 87.32 percent ($4,080,796 / $4,673,114) of the original additions remain in service at the end of 2004. I have thus determined that if an R1.5 42-year Iowa Curve explains retirement history, actual survivors at the end of 2004 amount to 87.32 percent of the investment originally installed in 1985.

The age of property installed in 1985 is 19½ years at the end of 2004. An R1.5 42-year Iowa Curve predicts that 87.36 percent of original additions would survive at the age of 19½ years. By comparing the predicted percent surviving based on the selected Iowa Curve age at the end of 2004 (87.36 percent), with the percent actually surviving based on the plant balance at the end of 2004 (87.32 percent), I have determined definitively how well the R1.5 42-year curve predicts actual retirements for that vintage.

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[11] Through my analysis, I found the R1.5 curve to have the "best fit" of the curves used by Laclede, Ameren, and Aquila for the Staff's recommended ASL of 42 years.

Q. In the foregoing, predicted survivors are almost equal to what you term actual survivors. Doesn't this indicate that the R1.5 42-year curve is an effective predictor of actual service life?

A. Yes, for the 1985 vintage. However we are concerned with not how well the curve predicts retirements for an individual vintage, but for how well it fits over a wide range of vintages (ages). In order to evaluate how well this curve compares with actual, I compare actual survivors with predicted survivors for all surviving vintages.

Q. Have you prepared a summary of the results of your comparison?

A. Yes, I have. In Rebuttal Schedule TJS-4, I compare predicted survivors with actual survivors for all surviving vintages. Rebuttal Schedule TJS-4 consists of a graphical comparison of survivors based on a R1.5 42-year Iowa Curve and actual survivors at the end of 2004. In Rebuttal Schedule TJS-4, I clearly demonstrate that R1.5 42-Iowa Curve does not reasonably predict actual survivors reported on the books and records of MGE.

As I show in Schedule TJS-4, the R1.5 curve shape appears generally to reflect the shape of actual survivors. However, over a wide range of observations, the R1.5 42-year curve lies above and to the right of actual. This relationship indicates that the life predicted by Mr. Macias' use of a 42-year Iowa Curve (and my imputed R1.5 curve) exceeds that based on actual MGE's experience.

Q. In Schedule TJS-4, you show some information regarding correlation coefficients and retirements. What does this information indicate?

A. This information provides some statistical indication of how well the specified curve predicts actual experience. Correlation coefficients represent a measure of how well a change in the value of one set of values corresponds to a change in the value of another set. For example, the 93.88 percent correlation coefficient I show for survivors indicates that the R1.5 42-year curve predicts about 94 percent of the change in actual survivors associated with a change in age. Likewise, the 65.42 percent correlation coefficient I show for retirements indicates that the R1.5 42-year curve predicts about 65 percent of the change in retirements associated with a change in age.

The information regarding the dollar value of retirements provides another measure of how well the specified curve predicts actual. During the 11-year period, (1994 through 2004) MGE retired a total $26,716,428 of its investment in Services. The R1.5 42-year curve predicts that $19,315,206 would be retired. Thus, the R1.5 42-year curve understates actual retirements by over 25 percent.

Q. Based on the information set forth in Schedule TJS-4, do you reach any conclusion regarding the reasonableness of the 42-year ASL proposed by Staff?

A. Yes, I have. A simple visual inspection demonstrates that the 42-year ASL that Staff proposes does not reflect actual experience on MGE's system. The various

statistics shown in Schedule TJS-4 further demonstrate the unreasonableness of the 42-year ASL recommended by Staff.

Q. Have you examined how well other service lives compare with actual experience?

A. Yes, I have. I show these comparisons in Rebuttal Schedule TJS-5.

Q. Please explain Rebuttal Schedule TJS-5.

A. In Rebuttal Schedule TJS-5, I present four graphical comparisons that are identical to the one I show in Rebuttal Schedule TJS-4. In preparing Rebuttal Schedule TJS-5, I observe that in Schedule TJS-4 MGE's actual experience appears to have higher modal shape than the R1.5 curve used. I therefore develop my initial comparisons in Rebuttal Schedule TJS-5 based on the R2.5 curve shape.

Using the R2.5 curve, I vary ASL in order to predict actual retirements. In Sheet 1 of Rebuttal Schedule TJS-5, I show the comparison using a 29-year service life. As shown, using a 29-year service life, I over-predict actual retirements by about 4.6 percent. In Sheet 2, I use a 30-year service life and under-predict actual retirements by about 3 percent. Therefore, I conclude that the ASL will likely fall between 29 and 30 years. I also observe that the correlation coefficients for both survivors and retirements are considerably higher than for the 42-year service life shown in Rebuttal Schedule TJS-4. Based on visual inspection of Rebuttal Schedule TJS-5 Sheets 1 and 2, I find that an R2.5 curve shape with a service life of 29 to 30 years reasonably predicts actual experience.

However, while I have evaluated service life, I have not confirmed that the R2.5 curve shape represents the curve shape that best matches actual experience. I therefore examine whether a change in curve shape might affect my initial conclusion in Sheets 3 and 4. I again minimize the difference between actual and predicted retirements by varying age and using R2 and R3 curve shapes. As shown in these two sheets, the correlation coefficients using a R2 curve shape (Sheet 3-31 year ASL) are not quite as good as when a R2.5 (29-30 years) is used. The results using a R3 curve shape (Sheet 4-28 year ASL) are slightly better than using an R2.5 curve shape.

Based on my review of the information set forth in Rebuttal Schedule TJS-5, I find that based on actual data specific to MGE, an ASL for Services to be about 28 years.

Comparable Companies Analysis

Q. What was the ASL for Services based on the comparable company analysis in your June 2005 Report?

A. In the June 2005 Black & Veatch Report (Table 3-3), I show depreciation statistics for a number of Midwest gas distributors. Only 2 of the 10 Midwestern gas utilities had ASLs greater than 40 years for Services. Ironically, these two utilities are Aquila (Missouri Public Service) (45 years) and Laclede (44 years), which are two of the three utilities that Mr. Macias uses to develop the surrogate ASL for MGE and are both regulated by the Missouri PSC. The ASL for

Services of the comparable companies shown in Table 3-3 is 37 years and an average rate of 3.31 percent. While this information does not definitively support the Company's recommended 32-year life and 3.41 percent depreciation rate, it also casts doubt upon the reasonableness of Staff's recommended 42-year life and 3.05 percent depreciation rate.

Q. Did you perform any additional analysis of comparable companies?

A. Yes, I did. In Rebuttal Schedule TJS-6, I show the total composite depreciation rates (for all accounts) for the six companies that the Staff uses in this case to develop their recommended rate of return on equity. The average of those rates was 4.16 percent. This compares to the Company's proposed overall composite rate of 3.08 percent and the Staff's of 2.74 percent. When looked at on an overall composite basis, clearly the Staff's recommendation in this case is significantly below any reasonable comparison to the comparable companies that it uses in the development of its proposed ROE.

Other Considerations with Regard to Services

Q. In Case Nos. GR-2001-292 and GR-2004-0209, you raised a question regarding how the age of the housing stock has a bearing on ASL. Please explain how the age of the houses have a bearing on the expected ASL of Services for MGE.

A. A significant purpose of the MGE's safety line replacement program is to replace bare steel service lines installed prior to the early 1970's. Therefore, the newest houses in the program are at least 30 years old. Census tract data (2000) indicates that approximately 176,000 houses in Jackson County are older than 1970 vintage. The vast majority of MGE's service line replacements are in Jackson County. According to the census data, approximately 9 percent of these houses are vacant and another 27 percent of the occupied units are over 60 years old. To support a 42-year ASL, Staff must assume that on average, service lines to these 63,000 housing units (36 percent of 176,000) will remain in service on average for 42 years.

I have lived in Kansas City (Jackson County) my entire life and worked on volunteer projects for over 20 years in the inner City. I am intimately familiar with many areas in northern and eastern parts of the City (a significant part of Jackson County) where houses (with natural gas service) will be lucky to survive ten years. The economic life of the replacement Services on these houses is likely to be controlled by the mortality of the home to which the Services are attached rather than the physical life of the plastic pipe.

Q. Please explain how a plastic Service line installed as part of the Company's SLRP would actually have a shorter expected life than an old steel Service or a plastic Service line installed on a new home?

A. That is probably best done through an example. Rebuttal Schedule TJS-7 is a photograph of a house at 2539 Bellefontaine in the inner city of Kansas City that was included as Schedule TJS-13 in Case No. GR-2004-0209. This home had its service line replaced in the late 1980's. This home has been condemned and was scheduled for demolition. The Company retired the service line for this home in late 2003 after about 15 years of service. The photo also shows an empty lot next to this home. This empty lot used to be a home at 2537 Bellefontaine, which had its service line replaced at the same time as 2539 Bellefontaine. Halfway down the block at 2509 Bellefontaine there is a similar story associated with this empty lot. In addition, there are several other empty lots on this block. All of these service lines were retired - not because of the physical life of the plastic pipe has expired, but because the service line has no economic value or use without the home being there.

Q. Did you revisit the house at 2539 Bellefontaine for this case?

A. Yes. I saw it on November 17, 2006. I found that the house had been demolished and it is now an empty lot.

Q. Are there are other instances and circumstances where MGE has had to retire plastic Service lines due to factors other than the physical life of the pipe?

A. Yes. Kansas City has thousands of examples similar to the one cited above. The primary reasons for these retirements are due to redevelopment and public improvement projects, in addition to the dangerous and/or demolished buildings cited above. For example, recent construction of a new downtown arena has also resulted in the demolition of buildings whose Service lines were replaced primarily in 1995-1996.

Q. Wouldn't these factors apply to other urban utilities like Laclede?

A. The forces at work in St. Louis may not be that dissimilar. However, the critical differentiating fact is that in MGE's urban core, the buildings that are being torn down are old buildings with very young Service lines that were installed as part of MGE's SLRP. As previously discussed, the magnitude of Laclede and Aquila's SLRP has been a fraction of MGE's. Simply put, MGE had to put in brand new plastic pipe to serve old buildings and homes, and as the homes and buildings are being torn down these relatively young service lines must be retired. To the extent that these factors are occurring in St. Louis (Laclede's service territory), old buildings and homes are being torn down and relatively old service lines are being retired. The fact that the new plastic pipe would otherwise last for decades is irrelevant. The fact the new plastic pipe might last longer than bare steel is also irrelevant. The controlling factor in very many cases for MGE is not the physical

life of the pipe, nor the fact that plastic pipe may last longer than bare steel, but the fact that the premise has a much shorter remaining life while the gas service facilities to the premise are relatively new.

Q. Please summarize you rebuttal testimony with regards to Mr. Macias' recommended average service life for Services?

A. Mr. Macias' recommended average service life for Services fails to take into consideration known factors that differentiate MGE from the other utilities in the state. Based on MGE-specific data and information, the ASL for Services should be 32 years.

Mains Net Salvage Allowance

Q. What is Mr. Macias' recommendation with regard to net salvage for Mains?

A. Mr. Macias recommends a net salvage ratio of 5 percent for Mains. He states "Staff finds the trend for the net salvage of this account (Mains) to be declining rapidly."[12]

Q. How does Mr. Macias calculate net salvage for Mains?

A. On Page 8, Line 1 of his direct testimony, Mr. Macias says that he calculates net salvage percent as "(Gross Salvage – Cost of Removal)/Original Cost of Plant Retired".

[12] Staff witness Gregory E. Macias Schedule GEM 3-2.

Q. Is this how he calculated his net salvage allowance?

A. No, it is not. For Mains in particular, he appears to have calculated his net salvage percentage as: (Gross Salvage plus Reimbursements minus Cost of Removal)/Original Cost of Plant Retired.

Q. Is Mr. Macias' calculation correct?

A. No. Despite what he says in his testimony, reimbursements should be considered in determining MGE's net salvage allowance. However, Mr. Macias has failed to use common sense in the application of the calculation. MGE received substantial reimbursements for Mains during the 1994 through 2002 period for relocations primarily related to large highway relocation projects in the Kansas City area (Grandview triangle, for example).

Q, What do you mean by a reimbursement?

A. If MGE is required to move or relocate facilities at the request of a government body, they are reimbursed for the cost of relocating the line under certain circumstances. This is can be an extraordinary item. The following is an example of how a reimbursement may be booked by MGE:

1. MGE has to remove certain facilities, let's say a Main. This results in a retirement of say $100,000 (the original cost of the main removed).
2. MGE has to construct the new Main for a cost of $500,000. An addition is made to plant for the $500,000.

3. The Missouri Department of Transportation reimburses MGE for the cost of the new mains, i.e. $500,000. MGE credits (increases) reserve to reflect this reimbursement.

4. Net plant is unchanged by the sum of these three accounting entries.

Q. In this example, how is the net salvage impacted by such a transaction if one applies Mr. Macias' approach?

A. Based on Mr. Macias' approach, the net salvage allowance would be a positive 500 percent. Net salvage is a positive $500,000, reflecting the reimbursement, and the original cost of the plant retired is $100,000.

Q. Isn't this an extreme example?

A. Yes, however it is presented to make the point that one needs to be very careful in applying a non-recurring item to the total plant balance. Further, it demonstrates the problem with developing a percentage based on very limited annual retirement activity and applying that percentage to the entire plant balance.

Q. Please discuss the recent history of MGE's reimbursements for Mains.

A. I show this in Rebuttal Schedule TJS-8. Reimbursements for the period 1994 through 2002 ranged from about $300,000 to $1.5 million (which occurred in 2000 and was included in Mr. Macias' calculation). Prior to 1994, the reimbursements were lower than they were during the period 1994 through 2002. By including these extraordinary reimbursements in his calculation of net salvage,

Mr. Macias fails to recognize that reimbursements at this level are not normal. In fact, reimbursements during the 2003 and 2004 have essentially been nearly zero, $89,000 and $69,000, respectively. The net salvage allowance should be based on what the Company can expect going forward. If he were to exclude reimbursements, as he should, from the five and ten-year average, his net salvage allowance would be in the range of negative 15 to negative 19 percent.

I also show Services in Rebuttal Schedule TJS-8 for comparison purposes. Reimbursements have a negligible affect on the average net salvage allowance for Services.

Q. What is the percentage allowance for reimbursements that is implied in Mr. Macias' net salvage allowance for Mains?

A. Based on the discussion in the prior question, his positive net salvage allowance of 5 percent for Mains implies a 15 to 20 percent salvage allowance for reimbursements.

Q. What would be the impact of this 15 to 20 percent?

A. Mr. Macias is recommending that this reimbursement allowance that was developed on a very small percentage of MGE's total plant and is, as I have indicated above, a non-recurring item be applied to MGE's total plant investment. MGE's plant investment in Mains is currently on the order of $340 million dollars. Therefore, Mr. Macias' approach, if applied over the whole life of the plant, would reserve between $50 and $65 million for reimbursements. Mr. Macias' approach would reduce depreciation expense by this amount over the life

of the asset. Stated differently, this would represent the amount of investment that MGE would probably never recover through depreciation expense.

Q. What net salvage allowance did you use for Mains?

A. I did not include a net salvage allowance for Mains. As shown in Rebuttal Exhibit TJS-8, and consistent with Mr. Macias' observation, net salvage has declined rapidly in the most recent years. The amount of salvage (positive), cost of removal (negative), and reimbursement (positive) are netting to a very small number in recent years. I believe this to be the case in the near future (the five year time horizon of my study), therefore I recommend a net salvage allowance of zero for Mains.

Q. Does the following discussion highlight another issue with regards to how net salvage should be determined?

A. Yes, it does. As I indicated earlier in my testimony, Mr. Adam and I believe that using an annual dollar allowance for net salvage is superior to using a percentage of plant approach based on limited plant activity. The approach used by Mr. Macias would have one believe that very limited interim activity (retirements) is reflected of all and final retirements. This conclusion is not reasonable and can result in net salvage allowances that significantly exceed any current reasonable estimates of final net salvage.

Q. Please summarize your rebuttal with regard to Mr. Macias' recommended deprecation rate for Mains.

A. Mr. Macias has grossly overstated the net salvage allowance that should be used for Mains because he has misapplied the reimbursements that were received by MGE in the past. If one were to follow Mr. Macias' approach to determining net salvage with a proper recognition of reimbursements, a net salvage allowance of negative 15 percent would be more appropriate.

Q. What are the other companies regulated by the Missouri PSC using for a net salvage allowance for Mains?

A. Mr. Macias' workpapers indicate that the Staff recommended the following net salvages for LaClede's Mains:

	Net Salvage
Steel	-15%
Cast Iron	-165%
Plastic Copper	-10%

In the Atmos case, Staff implicitly accepts a negative 10 percent salvage for Mains. It appears that Aquila and Ameren still accrue net salvage outside of the depreciation reserve. Given these examples, Mr. Macias' proposed net salvage of positive 5 percent for MGE is, once again, obviously incorrect. The use of a negative 15 percent is far more reasonable.

Other Issues

Q. Did Mr. Macias perform a depreciation reserve analysis?

A. No, he did not. Mr. Macias states that "[b]ecause a plant specific analysis could not be performed, a true theoretical reserve cannot be calculated."[13] Mr. Macias believes that an Iowa type curve, which is the result of actuarial analyses, is an "essential element of the theoretical reserve calculation."[14]

Q. Did you perform a depreciation reserve analysis?

A. Yes, I did. You do not need Iowa type curves to evaluate the adequacy of the depreciation reserve balance. I further discuss my depreciation reserve analysis on Pages 18 and 19 of Schedule TJS-2, the June 2005 Depreciation Report. I reflect the reserve deficiency in my recommended rates.

Recommendations

Q. What is your recommendation with regard to Staff's recommended ASL of 42-years for Account 380 - Services?

A. The Commission should reject Staff's recommendation because:

- Staff has performed no study of MGE or conditions specific to MGE's operation.

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[13] Staff witness Gregory E. Macias Direct Testimony, Page 9, Lines 4-5.

[14] Staff witness Gregory E. Macias Direct Testimony, Page 9, Lines 8-9.

- Staff's recommendations are based on a methodology that is too narrow, circular in reasoning, and inconsistent with the approach the Staff uses for ROE, return of capital.
- Staff's results are clearly unreasonable when compared to other utilities..
- Staff has ignored MGE-specific data and has overlooked significant differences between MGE and Laclede, Ameren, and Aquila.
- Staff is applying a different standard to MGE than it is to Atmos under similar circumstances.

Q. What is your recommendation with regard to Staff's recommended net salvage allowance of five percent for Account 376 - Mains?

A. The Commission should reject Staff's recommendation because Mr. Macias clearly did not understand the implications of including reimbursements in his net salvage allowance for Mains.

Q. What depreciation rates are you recommending that the Commission adopt?

A. I am recommending that the Commission adopt the depreciation rates recommended in Black & Veatch's June 2005 Report, excluding the cost of removal allowance. These rates are summarized in Revised Table 4-1 of Schedule TJS-2 that I have included with my rebuttal testimony. Earlier in my testimony, I separated the net salvage allowance from the ASL component for the depreciation rates where I have included a net salvage allowance.

Q. Why should the Commission accept the rates you are recommending for MGE -- specifically in regard to Account 380 – Services and Account 376 - Mains?

A. With regard to Services, the Commission should accept my recommendations because:

- The rates I am recommending for Services and all accounts are based on the June 2005 Report based on a study of actual MGE experience and data, consideration of experience of 10 Midwest utilities, engineering judgment, and consideration of circumstances specific to MGE.
- The retirement analysis performed in connection with this rebuttal testimony clearly shows that a 32 year ASL for Services is much more reasonable than the 42 year ASL Staff is recommending.
- I have provided information in this rebuttal testimony that clearly demonstrates significant differences between MGE and the surrogate companies that Staff uses and the inappropriateness of basing ASL's for Services on these surrogate companies.
- I have provided information in this rebuttal testimony that clearly demonstrates that MGE's SLRP significantly impacts the ASL for Services on the MGE system.
- The comparable company analyses provided in connection with my rebuttal testimony clearly show that Staff's recommendation for Services is unreasonable and my recommendation is reasonable.

With regard to Mains, the Commission should reject Mr. Macias' net salvage allowance of five percent. Mr. Macias clearly did not understand the implications of including reimbursements in his net salvage allowance. The correct net salvage allowance is negative 15 percent, excluding reimbursements. This value is also consistent with Staff's proposed and accepted net salvage for Laclede and Atmos.

Q. Are there adjustments that should be made to Mr. Macias' recommended depreciation rates that would make his recommendation more reasonable?

A. Yes. If the following two corrections are made to Mr. Macias' analysis, a significantly more reasonable result is produced:

1. Use an Average Service Life of 32 years for Services. This would incorporate known and measurable differences between MGE and the three companies sampled by Mr. Macias.
2. Use a net salvage allowance of negative 15 percent for Mains. This would correct for Mr. Macias' misapplication or MGE's past reimbursement experience and result in an allowance more comparable to the other Missouri utilities.

Q. Have you prepared an exhibit showing these changes?

A. Yes, I have. I have presented the results of these recommended changes in Rebuttal Schedule TJS-9.

Q. Please discuss Rebuttal Schedule TJS-9.

A. Once again, I use Mr. Macias' Schedule GEM-4 (similar to Rebuttal Schedule TJS-1) to present the results of these recommended changes. The use of a 32 year ASL increases Mr. Macias' proposed annual depreciation expense by $2.80 million. The use of a net salvage allowance of negative 15 percent for Mains increases Mr. Macias' proposed annual depreciation by $1.53 million for a total increase of $4.33 million. The Company's proposed increase, based on plant in service at June 30, 2006, is $2.87 million.

Q. Please summarize your rebuttal testimony.

A I recommend that the Commission adopt the depreciation rates contained in my June 2005 Report as corrected in my rebuttal testimony. If the Commission wishes to consider Mr. Macias' approach, his approach must be corrected as shown in my Rebuttal Schedule TJS-9.

Q. Does this conclude your rebuttal testimony?

A. Yes, at this time.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Tariff Sheets Designed to Increase Rates for Gas Service in the Company's Missouri Service Area.	))))	Case No. GR-2006-0422

AFFIDAVIT OF THOMAS J. SULLIVAN

STATE OF KANSAS)
) ss.
COUNTY OF JOHNSON)

Thomas J. Sullivan, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, to be presented in the above case; that the answers in the foregoing 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.

Thomas J. Sullivan
THOMAS J. SULLIVAN

Subscribed and sworn to before me this 20th day of November 2006.

Deborah A. Butler
Notary Public

My Commission Expires: 8/10/08

DEBORAH A. BUTLER
Notary Public - State of Kansas
Appointed in Johnson County
My Appt. Expires 8/10/08

DEBORAH A BUTLER NOTARY PUBLIC STATE OF KANSAS JOHNSON COUNTY

Expert Witness Testimony of Thomas J. Sullivan

- *Peoples Natural Gas Company of South Carolina, South Carolina Public Service Commission Docket No. 88-52-G (1988).* Natural gas utility revenue requirements and rate design.

- *Peoples Natural Gas (UtiliCorp United, Inc.), Iowa Utilities Board Docket No. RPU-92-6 (1992).* Natural gas utility class cost of service study and peak day demand requirements.

- *Peoples Natural Gas (UtiliCorp United, Inc.), Kansas Corporation Commission Docket No. 193,787-U (1996).* Natural gas utility class cost of service study, rate design, and peak day demand requirements.

- *Southern Union Gas Company, Railroad Commission of Texas Gas Utilities Docket No. 8878 (1998).* Natural gas utility depreciation rates.

- *Southern Union Gas Company, City of El Paso (1999).* Natural Gas utility depreciation rates.

- *UtiliCorp United, Inc., Kansas Corporation Commission Docket No. 00-UTCG-336-RTS (1999).* Natural gas utility weather normalization, class cost of service, and rate design.

- *Philadelphia Gas Works, Pennsylvania Public Utility Commission Docket No. R-00006042 (2001).* Natural gas utility revenue requirements.

- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2001-292 (2001).* Natural gas utility depreciation rates.

- *Aquila Networks, Iowa Utilities Board Docket No. RPU-02-5 (2002).* Natural gas utility class cost of service study, rate design, and weather normalization adjustment.

- *Aquila Networks, Michigan Gas Utilities, Michigan Public Service Commission Case No. U-13470 (2002).* Natural gas utility class cost of service study, rate design, and weather normalization adjustment.

- *Aquila Networks, Nebraska Public Service Commission Docket No. NG-0001, NG0002, NG0003 (2003).* Natural gas utility weather normalization adjustment.

- *Aquila Networks, Missouri Public Service Commission Docket No. GR-2003 (2003).* Natural gas utility class cost of service study, rate design, annualization adjustment, and weather normalization adjustment.

- *North Carolina Natural Gas, North Carolina Utilities Commission Docket No. G-21-Sub 442 (2003).* Filed intervenor testimony on behalf of the municipal customers regarding natural gas cost of service and rates related to intrastate transmission service.

- *Texas Gas Service Company, Division of ONEOK, Railroad Commission of Texas Gas Utilities Docket No. 9465 (2004).* Natural gas utility depreciation rates.

- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2004-0209 (2004).* Natural gas utility depreciation rates.

- *Aquila Networks, Kansas Corporation Commission Docket No. 05-AQLG-367-RTS (2004).* Natural gas utility class cost of service study, rate design, and weather normalization adjustment.

- *Aquila Networks, Iowa Utilities Board Docket No. RPU-05-02 (2005).* Natural gas utility class cost of service study, rate design, grain drying adjustment and weather normalization adjustment.

- *PJM Interconnection, LLC, Federal Energy Regulatory Commission Docket No. ER05-1181 (2005).* Operating cash reserve requirements.

- *Kinder Morgan, Inc., Wyoming Public Service Commission Docket No. 30022-GR-6-73 (2006).* Natural gas utility weather normalization adjustment, development of load factors, billing cycle adjustment, determination of test year billing units and revenue, and depreciation rates.

- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2006-0422 (2006).* Natural gas utility depreciation rates.

- *Kinder Morgan, Inc., Nebraska Public Service Commission Docket No. NG-0036 (2006).* Natural gas utility weather normalization adjustment, test year billing determinants and revenue under existing rates, customer and usage trends, and rate design.

- *Aquila Networks, Kansas Corporation Commission Docket No. 07-AQLG-431-RTS (2006).* Natural gas utility class cost of service study, rate design, irrigation adjustment, and weather normalization adjustment.

- *Aquila Networks, Nebraska Public Service Commission Docket No. NG-0041 (2006).* Natural gas utility jurisdictional class cost of service study, rate design, and synchronization adjustment.

Table 3-4

Page 1 of 3

Missouri Gas Energy

Summary of Regional Gas Depreciation Rate Survey

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	[O]
		MidAmerican Energy							KS Gas Svc		Ameren (Union Electric)			
		Iowa							Kansas		Missouri		Illinois	
Account Description	FERC Account	Estimated Average Service Life	Net Salvage	Applied Depreciation Rate %	Mortality Curve Type	Avg Remaining Life (Years)	Type of Analysis	Life Basis	Estimated Average Service Life	Applied Depreciation Rate %	Estimated Average Service Life	Applied Depreciation Rate %	Estimated Average Service Life	Applied Depreciation Rate %
Distribution														
Land and Land Rights	374	50.00	0.00	2.04%	R3	35.29	SPB	Remaining Life	69	1.44%				
Structures and Improvements	375	50.00	(5.00)	1.82%	R2	27.81	SPB	Remaining Life	21	4.66%	51	1.98%	50	2.00%
Mains	376	50.00	(25.00)	2.45%	R3	33.75	SPB	Remaining Life	41	2.42%	42	2.40%	46	2.18%
Measuring and Regulating Equip	378	35.00	(35.00)	3.75%	R1	24.38	SPB	Remaining Life	44	2.27%	42	2.38%	31	3.26%
Meas & Reg Equip - City Gate	379	36.00	(40.00)	4.09%	R3	21.35	SPB	Remaining Life	49	2.06%	44	2.27%	31	3.26%
Services	380	40.00	(55.00)	3.68%	R3	25.75	SPB	Remaining Life	22	4.53%	36	2.79%	34	2.90%
Meters	381	35.00	0.00	3.03%	S1	24.13	SPB	Remaining Life	32	3.13%	52	1.91%	40	2.50%
Meter Installations	382								31	3.23%				
House Regulators	383	50.00	0.00	1.91%	S3	34.93	SPB	Remaining Life	46	2.17%	45	2.21%	43	2.32%
Industrial Meas and Reg Equipment	385	25.00	0.00	3.81%	S1	12.86	SPB	Remaining Life			41	2.45%	35	2.86%
Other Equipment	387								10	10.20%	30	3.36%		
General														
Land and Land Rights	389	50.00	0.00	1.92%	R3	39.51	SPB	Remaining Life						
Structures and Improvements	390	45.00	0.00	2.24%	R2	30.93	SPB	Remaining Life	32	3.09%	79	1.27%		
Office Furn and Equipment	391	15.00	5.00	7.54%	SQ	6.50	SPB	Remaining Life	30	3.38%	13	7.75%	5	20.00%
Computers	391.1	5.00	0.00	11.82%	SL	3.69	SPB	Remaining Life	5	18.30%	9	11.11%	5	20.00%
Transportation Equipment	392								10	9.56%	14	7.28%		
Stores Equipment	393	20.00	5.00	7.47%	SQ	5.43	SPB	Remaining Life	66	1.52%	15	6.67%		
Tool, Shop, and Garage Equipment	394	25.00	5.00	4.00%	SQ	14.63	SPB	Remaining Life	42	2.38%	19	5.18%	10	10.00%
Lab Equipment	395	25.00	0.00	4.32%	SQ	12.57	SPB	Remaining Life	44	2.27%	20	4.90%	15	6.67%
Power Operated Equipment	396								9	11.72%	21	4.76%		
Communication Equipment	397	15.00	0.00	7.43%	SQ	6.34	SPB	Remaining Life	23	4.29%	17	6.06%	10	10.00%
Miscellaneous Equipment	398	15.00	0.00	8.58%	SQ	2.46	SPB	Remaining Life	21	4.72%				

Table 3-4

Page 2 of 3

Missouri Gas Energy

Summary of Regional Gas Depreciation Rate Survey

[A]	[B]	[P]	[Q]	[R]	[S]	[T]	[U]	[V]	[W]	[X]	[Y]	[Z]	[AA]	[AB]	[AC]
		Aquila											LaClede		
		Missouri Public Service			NMU - Minnesota			Peoples Natural Gas - Iowa					Missouri		
Account Description	FERC Account	Estimated Average Service Life	Applied Depreciation Rate %	Iowa Curve Type	Estimated Average Service Life	Net Salvage %	Applied Depreciation Rate %	Estimated Average Service Life	Net Salvage %	Applied Depreciation Rate %	Curve Type	Average Remaining Life	Estimated Average Service Life	Applied Depreciation Rate %	Mortality Curve Type
Distribution															
Land and Land Rights	374														
Structures and Improvements	375	45	2.22%	R 4				45	0.0%	3.48%	S 4	26.55	61	1.64%	
Mains	376	45	2.22%	R 1, R 4	50	-35.00%	2.73%	40	-70.0%	3.48%	R 4	26.55	79	1.27%	
Measuring and Regulating Equip	378	44	2.27%	R 1.5	33	-5.00%	3.23%	27	-5.0%	3.48%	R 2	26.55	45	2.22%	
Meas & Reg Equip - City Gate	379	44	2.27%	R 1.5	28	-5.00%	3.08%						45	2.20%	
Services	380	45	2.22%	R 3, R 4	35	-60.00%	4.60%	38	-125.0%	3.48%	S 2	26.55	44	2.27%	
Meters	381	40	2.50%	S 0.5	38	5.00%	2.52%	35	5.0%	3.48%	S 4	26.55	38	2.63%	
Meter Installations	382				41	-60.00%	3.94%	38	-30.0%	3.48%	R 2	26.55			
House Regulators	383	40	2.50%	S 2	35	-15.00%	3.14%	29	0.0%	3.48%	S 3	26.55	47	2.13%	
Industrial Meas and Reg Equipment	385	44	2.27%	R 1.5				30	15.0%	3.48%	R 2	26.55	40	2.50%	
Other Equipment	387							12	-20.0%	3.48%	R 1	26.55	32	3.13%	
General															
Land and Land Rights	389														
Structures and Improvements	390	45	2.22%	R 1.5				29		3.48%			40	2.50%	
Office Furn and Equipment	391	22	4.55%	L 4	20	5.00%	6.31%	29		3.44%			37	2.70%	
Computers	391.1	7	14.29%	S 2	8		18.98%	8		12.30%			5	20.00%	
Transportation Equipment	392	12	8.33%	S 5	7	30.00%	94.80%						12	8.33%	
Stores Equipment	393	27	3.70%	L 1									45	2.22%	
Tool, Shop, and Garage Equipment	394	27	3.70%	L 0	23		5.00%	31		3.20%			38	2.63%	
Lab Equipment	395	29	3.45%	R 2.5				31		3.20%			28	3.57%	
Power Operated Equipment	396	16	6.25%	S 6	13	25.00%	1.47%						14	7.14%	
Communication Equipment	397	29	3.45%	S 2	18		2.15%	29		3.48%			18	5.56%	
Miscellaneous Equipment	398	23	4.35%	L 4	20		5.00%						29	3.45%	

Table 3-4

Page 3 of 3

Missouri Gas Energy

Summary of Regional Gas Depreciation Rate Survey

[A]	[B]	[AD]	[AE]	[AF]	[AG]	[AH]	[AI]	[AJ]	[AK]	[AL]	[AM]	[AN]	[AO]	[AP]	[AQ]
		Atmos Energy Iowa			Kinder Morgan Kansas			Regional Range				Regional Average		MGE Existing Rates	
								Service Life		Depreciation Rate					
Account Description	FERC Account	Estimated Average Service Life	Applied Depreciation Rate %	Type of Analysis	Estimated Average Service Life	Applied Depreciation Rate %	Net Salvage	Low	High	Low	High	Estimated Average Service Life	Applied Depreciation Rate %	Estimated Average Service Life	Applied Depreciation Rate %
Distribution															
Land and Land Rights	374							50	69	1.44%	2.04%	60	1.74%	48	2.09%
Structures and Improvements	375	38	2.64%	actuarial	33	3.00%		21	61	1.64%	4.66%	46	2.54%	61	1.65%
Mains	376		2.64%	actuarial	33	3.00%		33	79	1.27%	3.48%	49	2.39%	44	2.27%
Measuring and Regulating Equip	378	38	2.64%	actuarial	33	3.00%		27	45	2.22%	3.75%	38	2.86%	35	2.86%
Meas & Reg Equip - City Gate	379	38	2.64%	actuarial	33	3.00%		28	49	2.06%	4.09%	40	2.75%	47	2.13%
Services	380	38	2.64%	actuarial	33	3.00%		22	45	2.22%	4.60%	37	3.31%	37	2.70%
Meters	381	38	2.64%	actuarial	33	3.00%		32	52	1.91%	3.48%	39	2.71%	35	2.86%
Meter Installations	382	38	2.64%	actuarial	33	3.00%		31	41	2.64%	3.94%	37	3.55%	35	2.86%
House Regulators	383	38	2.64%	actuarial	33	3.00%		29	50	1.91%	3.48%	42	2.48%	41	2.44%
Industrial Meas and Reg Equipment	385	38	2.64%	actuarial	33	3.00%		25	44	2.27%	3.81%	36	2.90%	30	3.33%
Other Equipment	387	38	2.64%	actuarial	33	3.00%		10	38	2.64%	10.20%	21	5.04%	16	6.33%
General															
Land and Land Rights	389							50	50	1.92%	1.92%	50	1.92%		
Structures and Improvements	390	8	12.12%	actuarial	40	2.50%		8	79	1.27%	12.12%	44	2.47%	50	2.00%
Office Furn and Equipment	391	8	12.12%	actuarial	13	7.50%		5	37	2.70%	20.00%	20	7.02%	12	8.06%
Computers	391.1	8	12.12%	actuarial	13	7.50%		5	13	7.50%	20.00%	7	14.92%	12	8.06%
Transportation Equipment	392	8	12.12%	actuarial	10	10.00%	20%	7	14	7.28%	94.80%	11	23.05%	11	8.70%
Stores Equipment	393	8	12.12%	actuarial	13	7.50%		8	66	1.52%	12.12%	31	4.85%	37	2.70%
Tool, Shop, and Garage Equipment	394	8	12.12%	actuarial	13	7.50%		8	42	2.38%	12.12%	25	4.84%	19	5.30%
Lab Equipment	395	8	12.12%	actuarial	13	7.50%		8	44	2.27%	12.12%	26	4.49%		
Power Operated Equipment	396	8	12.12%	actuarial	10	10.00%	10%	8	21	1.47%	12.12%	14	6.89%	12	8.33%
Communication Equipment	397	8	12.12%	actuarial	13	7.50%		8	29	2.15%	12.12%	19	5.55%	16	6.25%
Miscellaneous Equipment	398	8	12.12%	actuarial	13	7.50%		8	29	3.45%	12.12%	20	5.60%	26	3.85%

REVISED
Table 3-5
Missouri Gas Energy
Recommended Average Service Lives

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Acct. No.	Account	Existing Average Service Life	Existing Annual Accrual Rate	Depreciable Plant 12/31/2004	Existing Annual Depreciation Expense	Recommended Average Service Life	Indicated Accrual Rate	Indicated Depreciation Expense
		Years	%	$	$	Years	%	$
	Distribution Plant							
3742	Land Rights	48	2.09%	1,568,071	32,773	50	2.00%	31,361
3751	Structures	61	1.65%	5,303,297	87,610	45	2.22%	117,733
3760	Mains	44	2.27%	317,114,685	7,201,675	44	2.27%	7,198,503
3780	Measuring & Regulating Stations	35	2.86%	11,340,602	324,341	35	2.86%	324,341
3790	City Gate Stations	47	2.13%	3,225,472	68,670	40	2.50%	80,637
3800	Services	37	2.70%	284,133,633	7,671,608	32	3.13%	8,893,383
3810	Meters	35	2.86%	30,234,961	864,720	35	2.86%	864,720
3820	Meter/Regulator Installations	35	2.86%	63,517,434	1,816,599	35	2.86%	1,816,599
3830	Regulators	41	2.44%	10,874,553	265,339	42	2.38%	258,814
3850	EGM-Meas/Reg Equip	30	3.33%	349,644	11,643	30	3.33%	11,643
3870	Other Equipment	16	6.33%	0	0	16	6.25%	-
	Total Distribution Plant		2.52%	727,662,351	18,344,978		2.69%	19,597,735
	General Plant							
3901	Structures & Improvements	50	2.00%	1,999,518	39,990	45	2.22%	44,389
3910	Furniture & Equipment	12	8.06%	5,958,115	480,224	11	9.09%	541,593
3920	Transportation Equipment	11	8.70%	5,105,489	444,178	11	9.09%	464,089
3930	Stores Equipment	37	2.70%	507,444	13,701	30	3.33%	16,898
3940	Tools	19	5.30%	4,883,622	258,832	20	5.00%	244,181
3960	Power Operated Equipment	12	8.33%	243,807	20,309	15	6.67%	16,262
3970	Communication Equipment	16	6.25%	3,016,045	188,503	16	6.25%	188,503
3971	Electronic Reading-ERT	20	5.00%	35,104,368	1,755,218	20	5.00%	1,755,218
3980	Miscellaneous Equipment	26	3.85%	416,204	16,024	20	5.00%	20,810
	Total General Plant		5.62%	57,234,611	3,216,979		5.75%	3,291,943
	Total Depreciable Plant		2.75%	784,896,963	21,561,957		2.92%	22,889,678

(1) $/year salvage allowance.
(2) Recommended service life of 11 years for Account 391 is based on service life determined in weighting study for Acct. 391, Table 3-6.

REVISED
Table 4-1
Missouri Gas Energy
Analysis of Accumulated Depreciation Reserve

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]
Acct. No.	Account	Existing Annual Accrual Rate	Depreciable Plant 12/31/2004	Existing Annual Depreciation Expense	Accumulated Depreciation Reserve	Reserve Ratio	Net Salvage Allowance	Recommended Average Service Life	Indicated Accrual Rate	Indicated Depreciation Expense
		%	$	$	$	%	$	Years	%	$
				[C] * [D]		[F] / [D]			(1 / [I]) - ([H] / [D]	[D] * [J]
	Distribution Plant									
3742	Land Rights	2.09%	1,568,071	32,773	342,553	21.85%		50	2.00%	31,361
3751	Structures	1.65%	5,303,297	87,610	309,222	5.83%		45	2.22%	117,733
3760	Mains	2.27%	317,114,685	7,201,675	97,058,811	30.61%		44	2.27%	7,196,503
3780	Measuring & Regulating Stations	2.86%	11,340,602	324,341	3,187,532	28.11%		35	2.86%	324,341
3790	City Gate Stations	2.13%	3,225,472	68,670	723,671	22.44%		40	2.50%	80,637
3800	Services	2.70%	284,133,633	7,671,608	124,691,479	43.88%	(800,000)	32	3.41%	9,688,957
3810	Meters	2.86%	30,234,961	864,720	2,876,110	9.51%		35	2.86%	864,720
3820	Meter/Regulator Installations	2.86%	63,517,434	1,816,599	12,039,627	18.95%		35	2.86%	1,816,599
3830	Regulators	2.44%	10,874,553	265,339	1,819,229	16.73%		42	2.38%	258,814
3850	EGM-Meas/Reg Equip	3.33%	349,644	11,643	86,249	24.67%		30	3.33%	11,643
3870	Other Equipment	6.33%	0	0	0	0.00%		16	6.25%	0
	Total Distribution Plant	2.52%	727,562,351	18,344,978	243,134,483	33.41%	(800,000)		2.80%	20,393,309
	General Plant									
3901	Structures & Improvements	2.00%	1,999,518	39,990	123,618	6.18%	40%	45	1.33%	26,660
3910	Furniture & Equipment	8.06%	5,958,115	480,224	329,059	5.52%	0%	11	9.09%	541,647
3920	Transportation Equipment	8.70%	5,105,489	444,178	2,022,624	39.62%	10%	11	8.18%	417,722
3930	Stores Equipment	2.70%	507,444	13,701	149,136	29.39%	0%	30	3.33%	16,915
3940	Tools	5.30%	4,883,622	258,832	646,342	13.23%	0%	20	5.00%	244,181
3960	Power Operated Equipment	8.33%	243,807	20,309	(452,017)	-185.40%	20%	15	5.33%	13,003
3970	Communication Equipment	6.25%	3,016,045	188,503	(1,800,321)	-59.69%	0%	16	6.25%	188,503
3971	Electronic Reading-ERT	5.00%	35,104,368	1,755,218	10,892,791	31.03%	0%	20	5.00%	1,755,218
3980	Miscellaneous Equipment	3.85%	416,204	16,024	262,851	63.11%	0%	20	5.00%	20,810
	Total General Plant	5.62%	57,234,611	3,216,979	12,173,883	21.27%			5.63%	3,224,659
	Total Depreciable Plant	2.75%	784,896,963	21,561,957	255,308,366	32.53%			3.01%	23,617,968

[A]	[B]	[L]	[M]	[N]	[O]	[P]	[Q]	[R]	[S]	[T]	[U]
Acct. No.	Account	Weighted Age	Calculated Reserve Ratio Based On Weighted Age	Calculated Depreciation Reserve	Reserve Deficiency	Redistribute Major Reserve Deficiency	Restated Reserve Deficiency	Average Remaining Life	Annual $ To Amortize over Remaining Life	Change in Accrual Rate	Recommended Accrual Rate
		Years	%	$	$	$	$	Years	$	%	%
			[L] / [I]	[M] * [D]	[N] - [F]		[O] + [P]	[I] - [L]	[Q] / [R]	[S] / [D]	[J] + [T]
	Distribution Plant										
3742	Land Rights	12.86	25.72%	403,308	60,755		60,755	37.14	1,636	0.10%	2.10%
3751	Structures	10.60	23.56%	1,249,221	939,999	(1,000,000)	(60,001)	34.40	(1,744)	-0.03%	2.19%
3760	Mains	15.92	36.18%	114,737,859	17,679,048	(3,400,000)	14,279,048	28.08	508,513	0.16%	2.43%
3780	Measuring & Regulating Stations	13.12	37.49%	4,251,106	1,063,573	(1,000,000)	63,573	21.88	2,906	0.03%	2.89%
3790	City Gate Stations	10.59	26.48%	853,944	130,273		130,273	29.41	4,430	0.14%	2.64%
3800	Services	10.75	33.59%	95,451,142	(29,240,337)	29,000,000	(240,337)	21.25	(11,310)	0.00%	3.41%
3810	Meters	14.77	42.20%	12,759,154	9,883,043	(9,245,000)	638,043	20.23	31,539	0.10%	2.96%
3820	Meter/Regulator Installations	9.42	26.91%	17,095,264	5,055,637	(4,000,000)	1,055,637	25.58	41,268	0.06%	2.92%
3830	Regulators	10.32	24.57%	2,672,033	852,804	(1,000,000)	(147,196)	31.68	(4,646)	-0.04%	2.34%
3850	EGM-Meas/Reg Equip	6.27	20.90%	73,076	(13,174)	10,000	(3,174)	23.73	(134)	-0.04%	3.29%
3870	Other Equipment		0.00%	0	0		0	16.00	0	0.00%	6.25%
	Total Distribution Plant			249,546,105	6,411,622	9,365,000	15,776,622				
	General Plant										
3901	Structures & Improvements	17.90	39.78%	795,364	671,746	(740,000)	(68,254)	27.10	(2,519)	-0.13%	1.21%
3910	Furniture & Equipment	7.22	65.64%	3,910,690	3,581,631	(3,580,000)	1,631	3.78	432	0.01%	9.10%
3920	Transportation Equipment	4.75	43.18%	2,204,643	182,019	(180,000)	2,019	6.25	323	0.01%	8.19%
3930	Stores Equipment	13.63	45.43%	230,549	81,413	(80,000)	1,413	16.37	86	0.02%	3.35%
3940	Tools	9.99	49.95%	2,439,369	1,793,028	(1,790,000)	3,028	10.01	302	0.01%	5.01%
3960	Power Operated Equipment	11.27	75.13%	183,180	635,197	(635,000)	197	3.73	53	0.02%	5.35%
3970	Communication Equipment	3.96	24.75%	746,471	2,546,792	(2,540,000)	6,792	12.04	564	0.02%	6.27%
3971	Electronic Reading-ERT	6.17	30.85%	10,829,697	(63,094)	60,000	(3,094)	13.83	(224)	0.00%	5.00%
3980	Miscellaneous Equipment	6.67	33.35%	138,804	(123,847)	120,000	(3,847)	13.33	(289)	-0.07%	4.93%
	Total General Plant			21,478,767	9,304,885	(9,365,000)	(60,115)				
	Total Depreciable Plant			271,024,873	15,716,506	0	15,716,506				

REVISED
Table 4-2
Missouri Gas Energy
Summary of Recommended Depreciation Accrual Rates

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]
Acct. No.	Account	Depreciable Plant 12/31/2004	Existing Average Service Life	Existing Accrual Rate	Existing Depreciation Expense	Proposed Average Service Life	Recommended Accrual Rate	Proposed Depreciation Expense	Change in Accrual Rate	Change in Depreciation Expense
		$								
	Distribution Plant									
3742	Land Rights	1,568,071	48	2.09%	32,773	50	2.10%	32,929	0.01%	157
3751	Structures	5,303,297	61	1.65%	87,610	45	2.19%	116,142	0.54%	28,532
3760	Mains	317,114,685	44	2.27%	7,201,675	44	2.43%	7,705,887	0.16%	504,212
3780	Measuring & Regulating Stations	11,340,602	35	2.86%	324,341	35	2.89%	327,743	0.03%	3,402
3790	City Gate Stations	3,225,472	47	2.13%	68,670	40	2.64%	85,152	0.51%	16,482
3800	Services	284,133,633	37	2.70%	7,671,608	32	3.41%	9,688,957	0.71%	2,017,349
3810	Meters	30,234,961	35	2.86%	864,720	35	2.96%	894,955	0.10%	30,235
3820	Meter/Regulator Installations	63,517,434	35	2.86%	1,816,599	35	2.92%	1,854,709	0.06%	38,110
3830	Regulators	10,874,553	41	2.44%	265,339	42	2.34%	254,465	-0.10%	(10,875)
3850	EGM-Meas/Reg Equip	349,644	30	3.33%	11,643	30	3.29%	11,503	-0.04%	(140)
3870	Other Equipment	0	16	6.33%	0	16	6.25%	0	-0.08%	0
		727,662,351		2.52%	18,344,978			20,972,443		2,627,465
	General Plant									
3901	Structures & Improvements	592,142	50	2.00%	11,843	45	1.21%	7,165	-0.79%	(4,678)
3910	Furniture & Equipment	5,958,115	12	8.06%	480,224	11	9.10%	542,188	1.04%	61,964
3920	Transportation Equipment	5,105,489	11	8.70%	444,178	11	8.19%	418,140	-0.51%	(26,038)
3930	Stores Equipment	507,444	37	2.70%	13,701	30	3.35%	16,999	0.65%	3,298
3940	Tools	4,883,622	19	5.30%	258,832	20	5.01%	244,669	-0.29%	(14,163)
3960	Power Operated Equipment	243,807	12	8.33%	20,309	15	5.36%	13,068	-2.97%	(7,241)
3970	Communication Equipment	3,016,045	16	6.25%	188,503	16	6.27%	189,106	0.02%	603
3971	Electronic Reading-ERT	35,104,368	20	5.00%	1,755,218	20	5.00%	1,755,218	0.00%	0
3980	Miscellaneous Equipment	416,204	26	3.85%	16,024	20	4.93%	20,519	1.08%	4,495
		55,827,235		5.71%	3,188,832			3,207,073		18,242
		783,489,587		2.75%	21,533,810		3.09%	24,179,516		2,645,707
	Difference from filed report									149,150

Comparison of Macias' and Company Proposed Rates
Using Schedule GEM-4

GR-2006-0422
Missouri Gas Energy
SCHEDULE 4, Depreciation Rate Determination and Corresponding Annual Accrual

			Existing Ordered				Staff Proposal					Company Proposal					Difference
Account Number	Description	Original Cost 6/30/2006	ASL (Years)	Net Salvage	Depreciation Rate	Annual Accrual	ASL (Years)	Net Salvage	Depreciation Rate	Annual Accrual	Difference Compared to Existing	ASL (Years)	Net Salvage	Depreciation Rate	Annual Accrual	Difference Compared to Existing	Between Macias and Company Proposed
	DISTRIBUTION																
375.00	Structures and Improvements	5,584,956	61	0%	1.65%	92,152	45	10%	2.00%	111,699	19,547	45	-	2.19%	122,311	30,159	10,611
376.00	Mains	339,684,706	44	0%	2.27%	7,715,383	45	5%	2.11%	7,171,567	(543,816)	44	-	2.43%	8,259,198	543,815	1,087,631
378.00	Measuring and Regulating Equip.	11,634,249	35	0%	2.86%	332,740	41	0%	2.44%	283,876	(48,864)	35	-	2.89%	336,230	3,490	52,354
379.00	Meas & Reg Equip - City Gate	3,058,251	47	0%	2.13%	65,141	41	0%	2.44%	74,621	9,480	40	-	2.64%	80,738	15,597	6,117
380.00	Services	294,362,067	37	0%	2.70%	7,947,776	42	-28%	3.05%	8,978,043	1,030,267	32	(800,000)	3.41%	10,037,746	2,089,970	1,059,703
381.00	Meters	31,036,775	35	0%	2.86%	887,652	41	-1%	2.46%	763,505	(124,147)	35	-	2.96%	918,689	31,037	155,184
382.00	Meter Installations	68,835,673	35	0%	2.86%	1,968,700	41	0%	2.44%	1,679,590	(289,110)	35	-	2.92%	2,010,002	41,302	330,411
383.00	House Regulators	11,556,045	41	0%	2.44%	282,016	45	0%	2.22%	256,589	(25,427)	42	-	2.34%	270,458	(11,558)	13,870
385.00	Industrial Meas and Reg Equipment	372,505	30	0%	3.33%	12,404	43	0%	2.33%	8,679	(3,725)	30	-	3.29%	12,255	(149)	3,576
	TOTAL DISTRIBUTION	766,327,228				19,303,964				19,328,170	24,206				22,047,827	2,743,863	2,719,457
	GENERAL																
390.00	Structures and Improvements	661,193	50	0%	2.00%	13,224	41	0%	2.44%	16,133	2,909	45	40.00%	1.21%	8,000	(5,224)	(8,133)
391.00	Office Furniture and Equipment	6,970,421	12	0%	8.06%	561,816	11	0%	9.09%	633,611	71,795	11	0.00%	9.10%	634,308	72,492	697
392.00	Transportation Equipment	5,043,979	11	0%	8.70%	438,626	12	10%	7.50%	378,298	(60,328)	11	10.00%	8.19%	413,102	(25,724)	34,803
393.00	Stores Equipment	538,350	37	0%	2.70%	14,535	32	0%	3.13%	16,850	2,315	30	0.00%	3.35%	18,035	3,500	1,184
394.00	Tool, Shop, and Garage Equipment	5,154,470	19	0%	5.30%	273,187	27	0%	3.70%	190,715	(82,472)	20	0.00%	5.01%	258,239	(14,948)	67,524
396.00	Power Operated Equipment	243,807	12	0%	8.33%	20,309	17	25%	4.41%	10,752	(9,557)	15	20.00%	5.36%	13,068	(7,241)	2,316
397.10	Electronic Reading - ERT	36,324,861	20	0%	5.00%	1,816,243	20	0%	5.00%	1,816,243	0	20	0.00%	5.00%	1,816,243	0	-
397.20	Communication Equipment	3,289,347	18	0%	6.25%	205,584	21	0%	4.76%	156,573	(49,011)	18	0.00%	6.27%	206,242	658	49,669
398.00	Miscellaneous Equipment	431,485	26	0%	3.85%	16,612	26	0%	3.85%	16,612	0	20	0.00%	4.93%	21,272	4,660	4,660
	TOTAL GENERAL	58,657,913				3,360,336				3,235,789	(124,547)				3,388,510	28,174	152,721
	GRAND TOTAL	824,985,141			2.75%	22,664,300			2.74%	22,563,958	(100,342)			3.08%	25,436,137	2,771,837	2,872,178

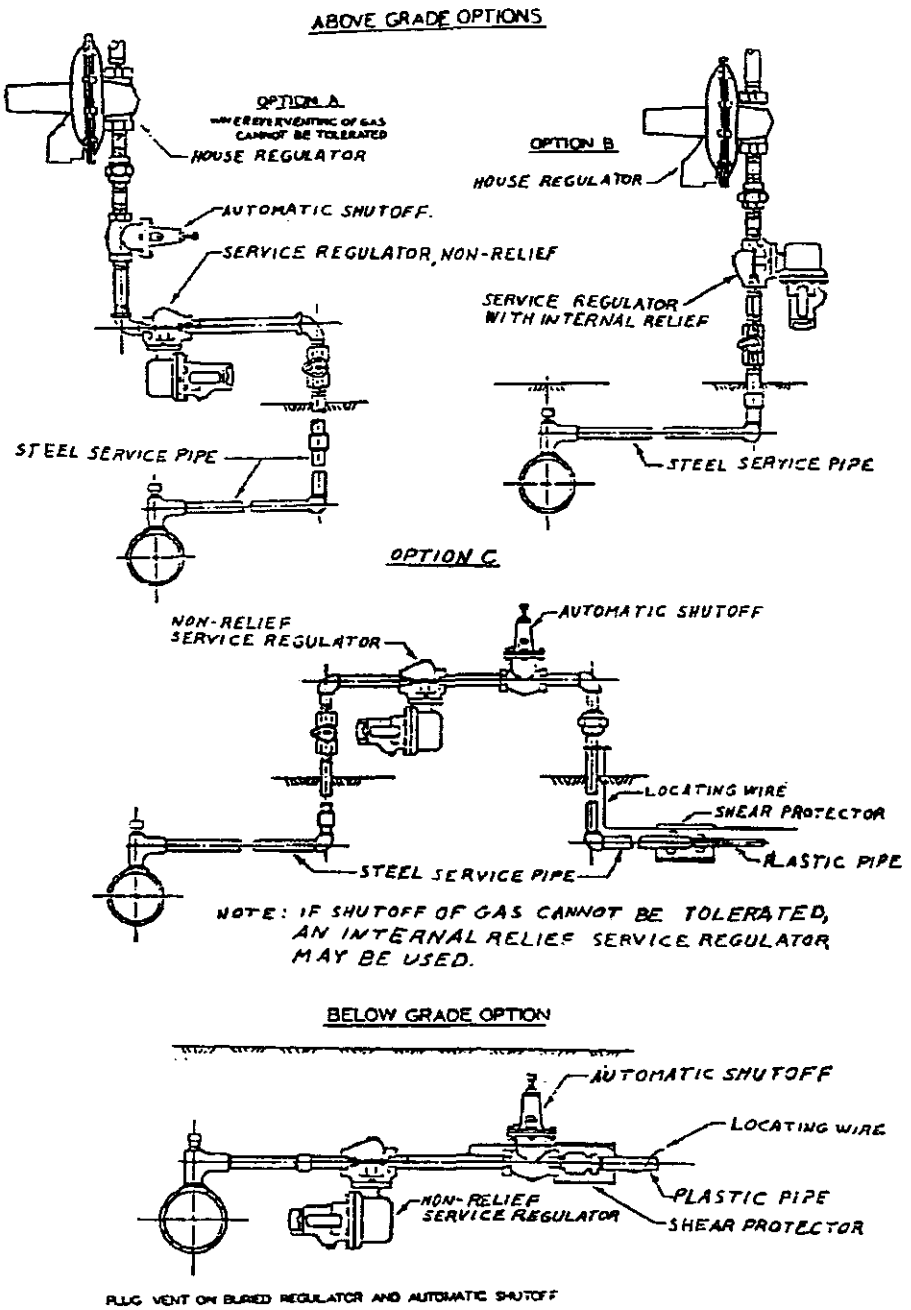


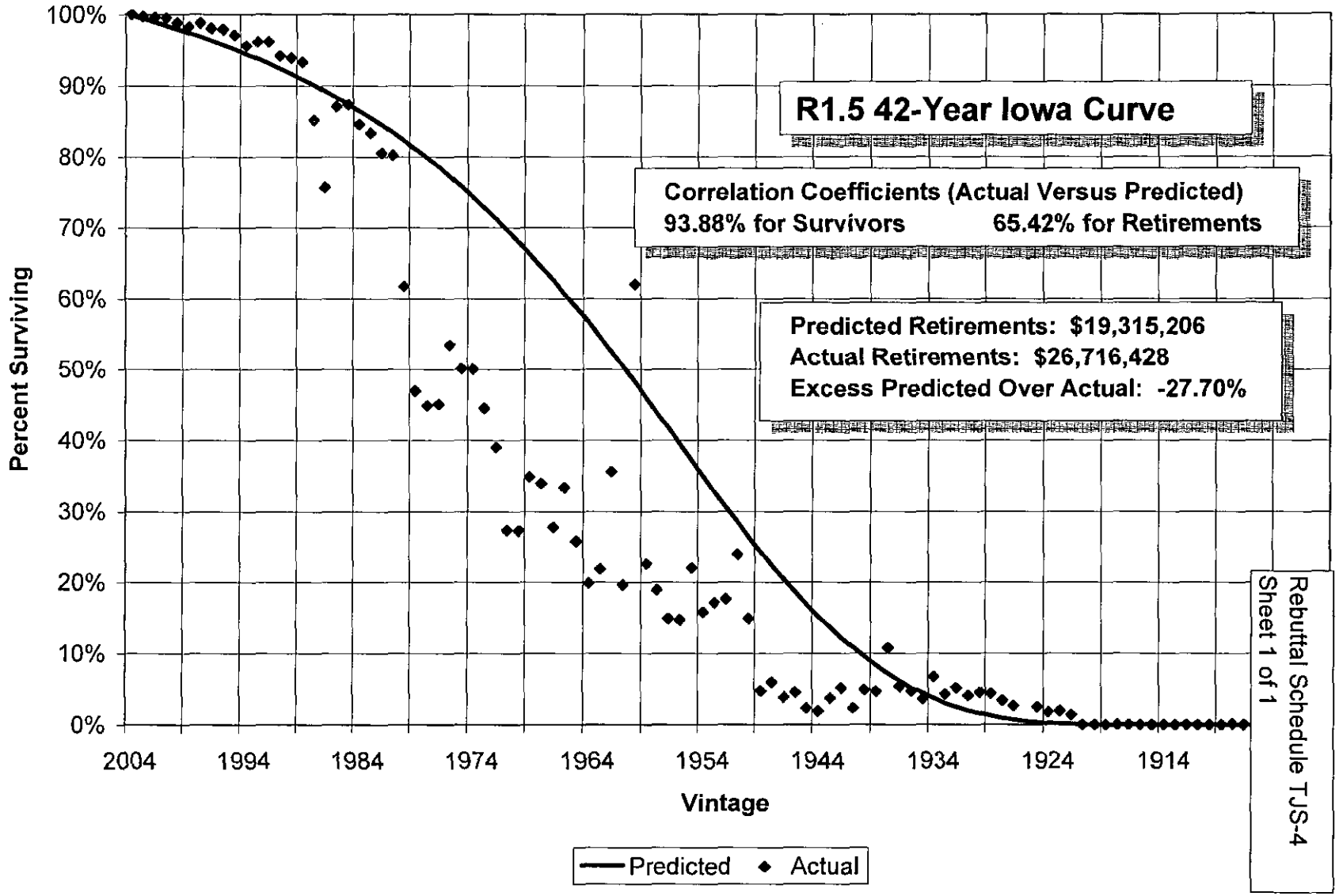
Figure 37. **Typical small-volume high-pressure service installations**

Source American Gas Association, Gas Engineering and Operating Practices Series, Volume III Distribution, Book D-2, Mains and Services, Operating Considerations,

Missouri Gas Energy
Comparison of MGE's Account 380 Investment to Laclede Gas Company, Ameren UE, and Aquila-MPS

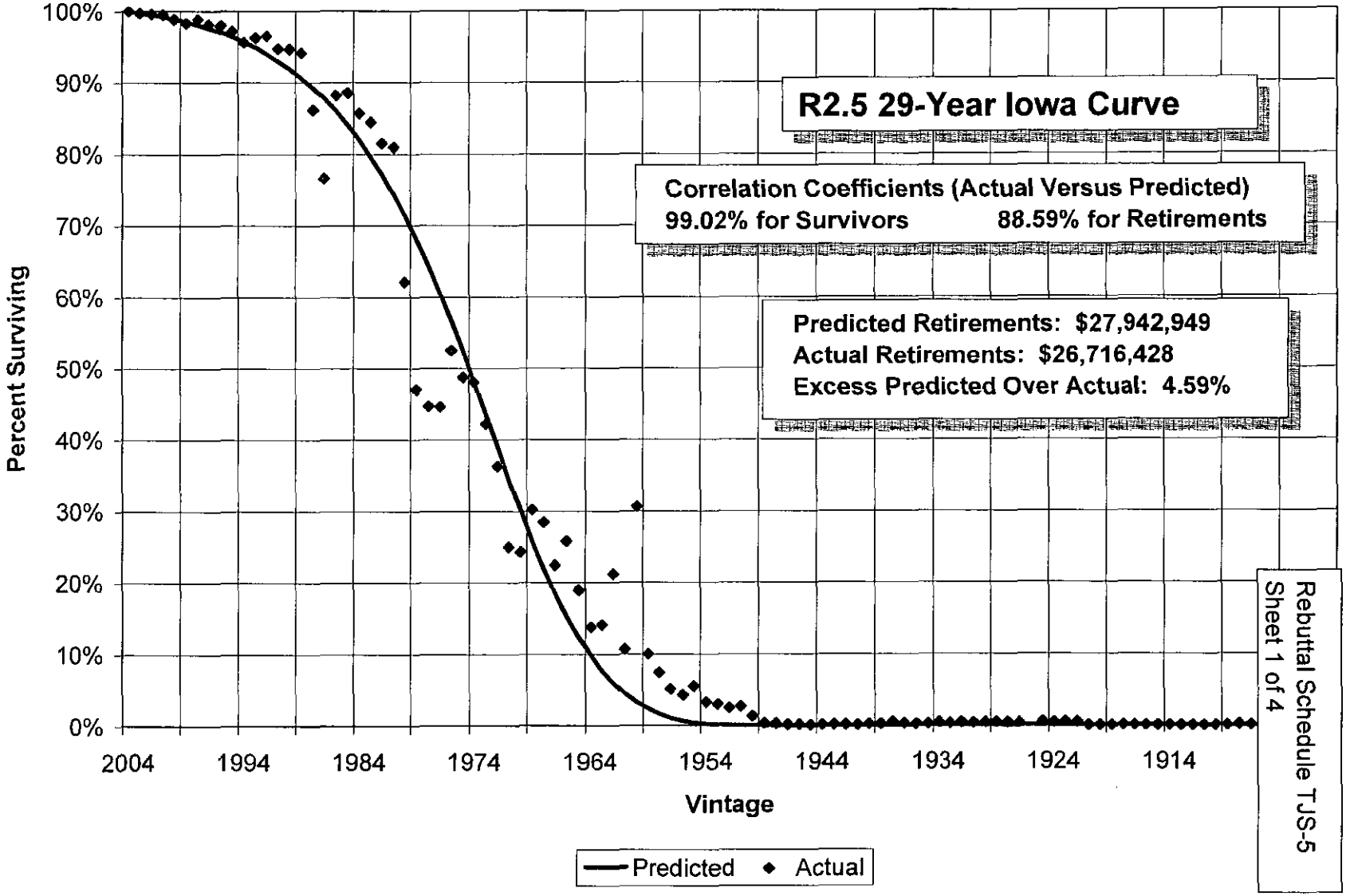
Line No.	Year	Beginning Balance	Additions	Retirements	Transfers/ Adjustments	Ending Balance	Laclede	AmerenUE	Aquila-MPS
		$	$	$	$	$	$	$	$
1	1987	71,233,796	5,232,196	1,082,965	(2,412)	75,380,615			
2	1988	75,380,615	5,974,783	224,688	(18,639)	81,112,071			
3	1989	81,112,071	19,552,514	3,109,855	(34,589)	97,520,141	161,871,193	32,709,051	13,795,492
4	1990	97,520,141	16,471,586	1,918,419	(541,803)	111,531,505			
5	1991	111,531,505	17,312,702	2,247,798	(758,768)	125,837,641			
6	1992	125,837,641	15,531,128	1,799,170	(27,963)	139,541,636			
7	1993	139,541,636	17,318,472	1,141,206	(238,083)	155,480,819			
8	1994	155,480,819	18,214,631	2,064,532	(1,509,987)	170,120,931			
9	1995	170,120,931	16,487,207	3,098,103	501	183,510,535			
10	1996	183,510,535	16,767,115	5,666,727	(56,492)	194,554,431			
11	1997	194,554,431	19,921,220	3,696,469	(18,926)	210,760,256			
12	1998	210,760,256	16,123,650	3,867,327	551	223,017,129			
13	1999	223,017,129	16,262,389	4,494,754	(24,901)	234,759,863			
14	2000	234,759,863	14,664,704	401,272	16,594	249,039,889			
15	2001	249,039,889	8,199,829	970,691	31,737	256,300,764			
16	2002	256,300,764	9,110,139	1,183,034	21,158	264,249,027			
17	2003	264,249,027	9,783,163	1,090,504	1,198	272,942,884			
18	2004	272,942,884	10,083,909	954,810	(11,196)	282,060,787	375,026,399	86,223,000	21,473,457
19	Total Since 1988		241,804,357	37,704,671	(3,150,969)				
20	Percent of 1988 Ending Balance		298%	46%	-4%				
21	Percent Change in Plant Balance from 1989 to 2004					189%	132%	164%	56%

Missouri Gas Energy
Comparison of Predicted and Actual Survivor Curves
Account 380 - Services



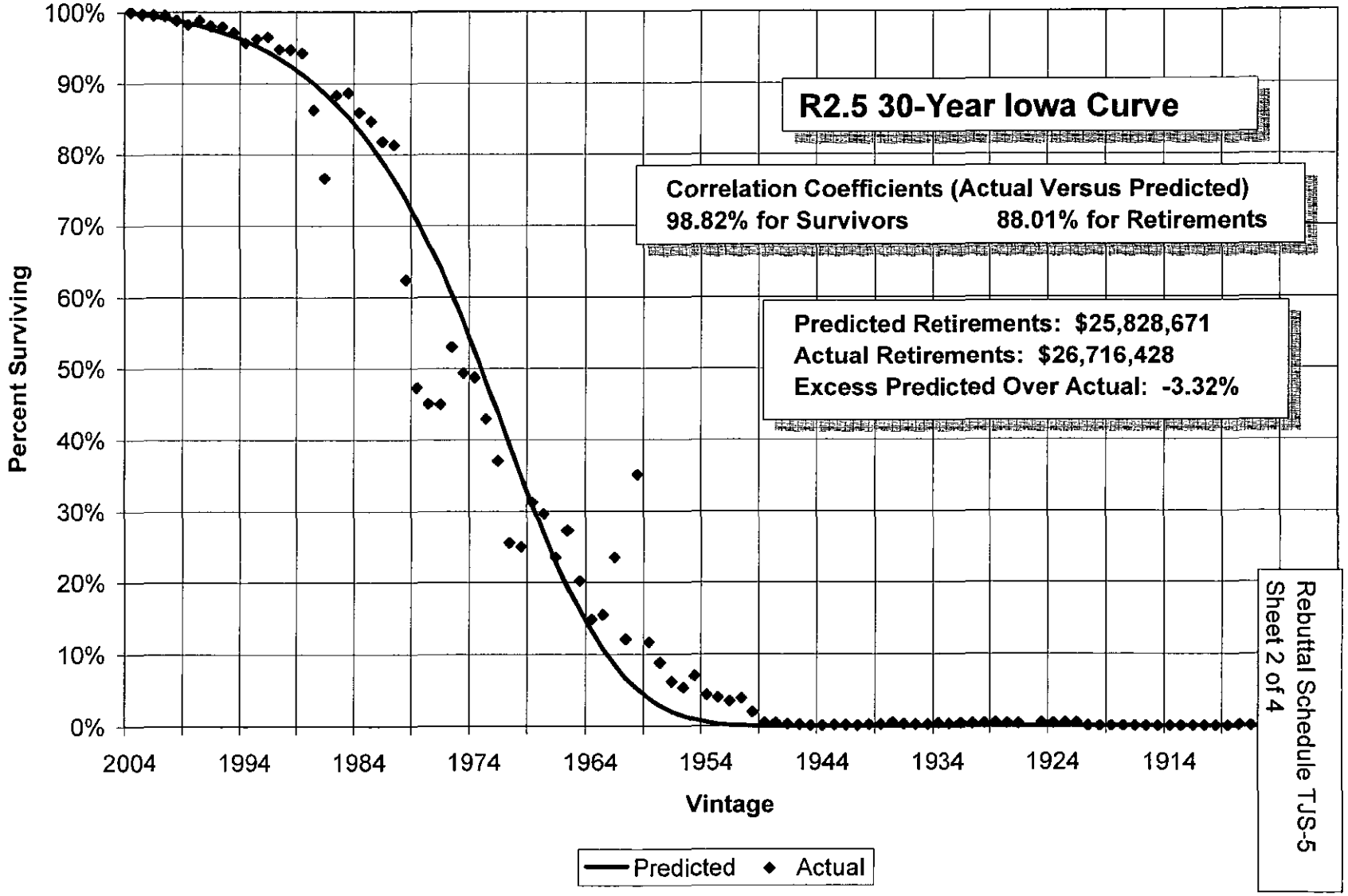
Rebuttal Schedule TJS-4
Sheet 1 of 1

Missouri Gas Energy
Comparison of Predicted and Actual Survivor Curves
Account 380 - Services



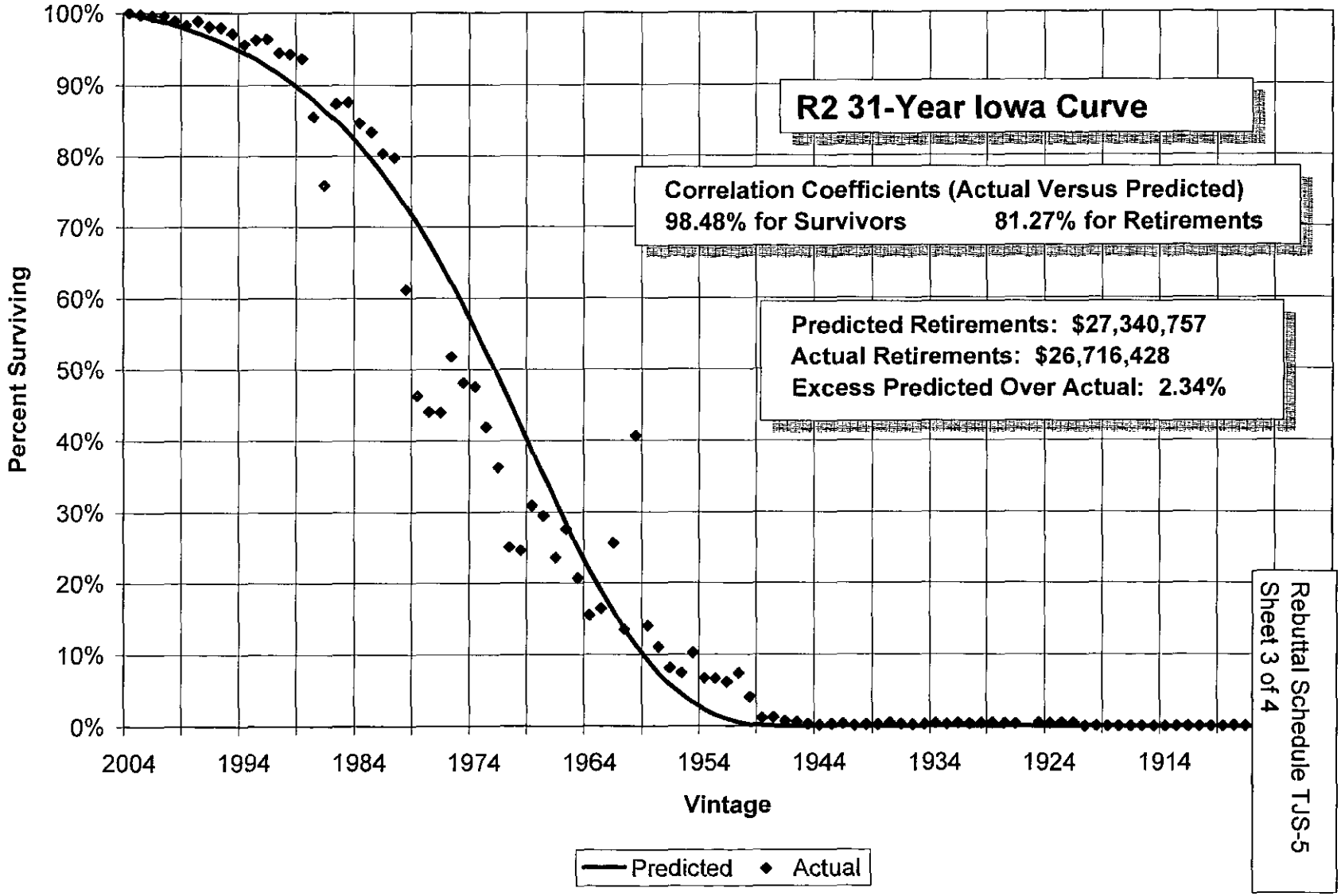
Rebuttal Schedule TJS-5
Sheet 1 of 4

Missouri Gas Energy
Comparison of Predicted and Actual Survivor Curves
Account 380 - Services



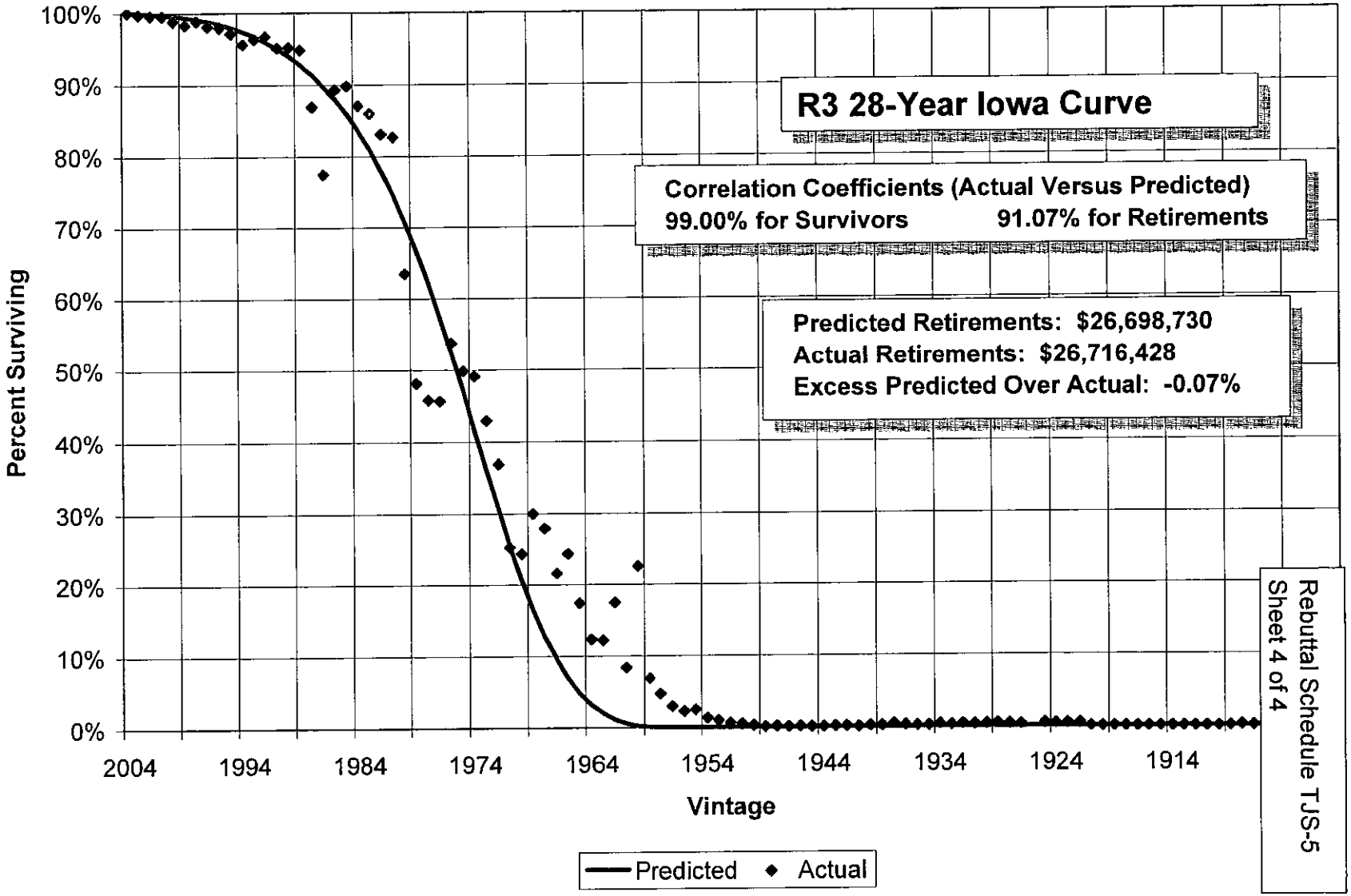
Rebuttal Schedule TJS-5
Sheet 2 of 4

Missouri Gas Energy
Comparison of Predicted and Actual Survivor Curves
Account 380 - Services



Rebuttal Schedule TJS-5
Sheet 3 of 4

Missouri Gas Energy
Comparison of Predicted and Actual Survivor Curves
Account 380 - Services

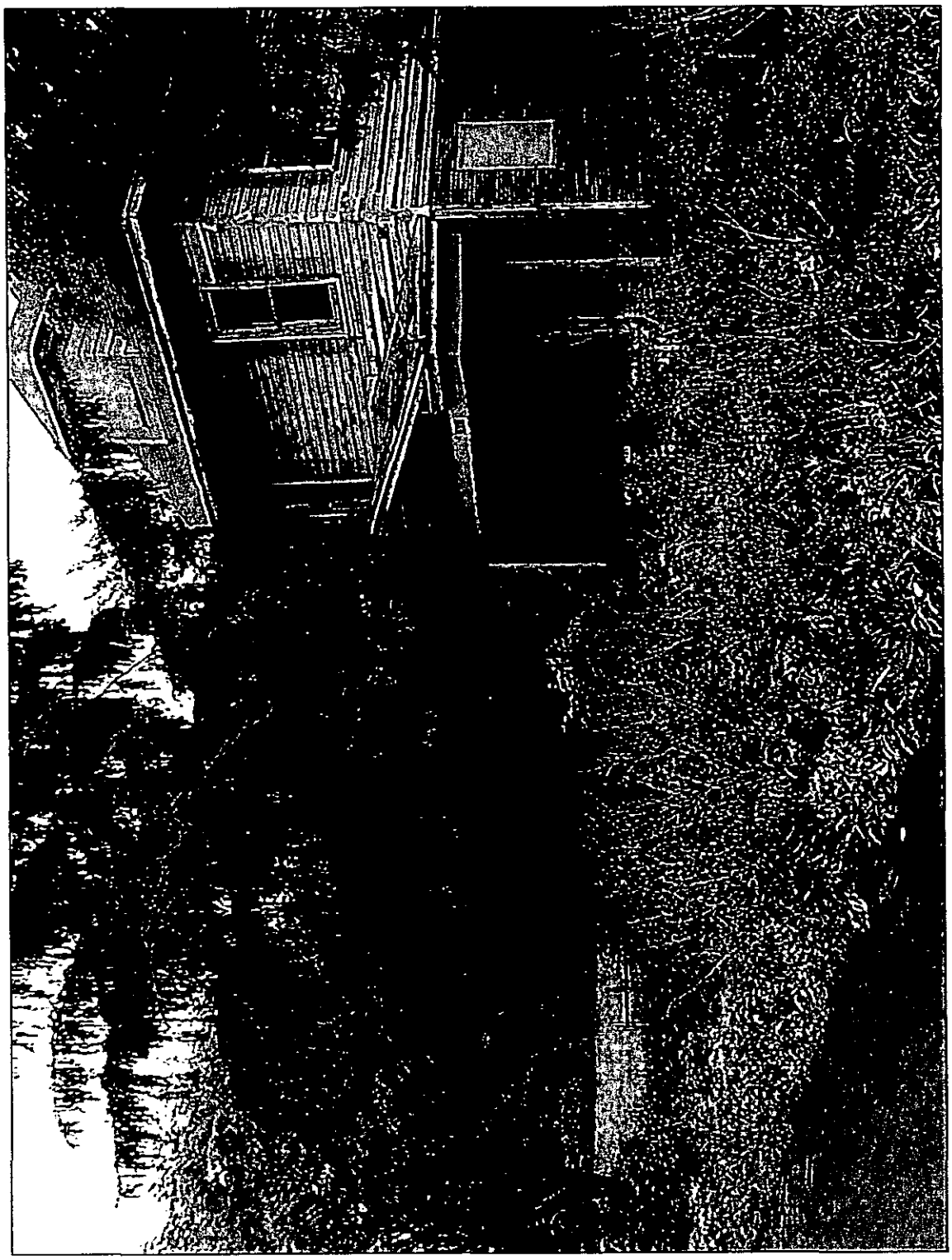


Rebuttal Schedule TJS-5
Sheet 4 of 4

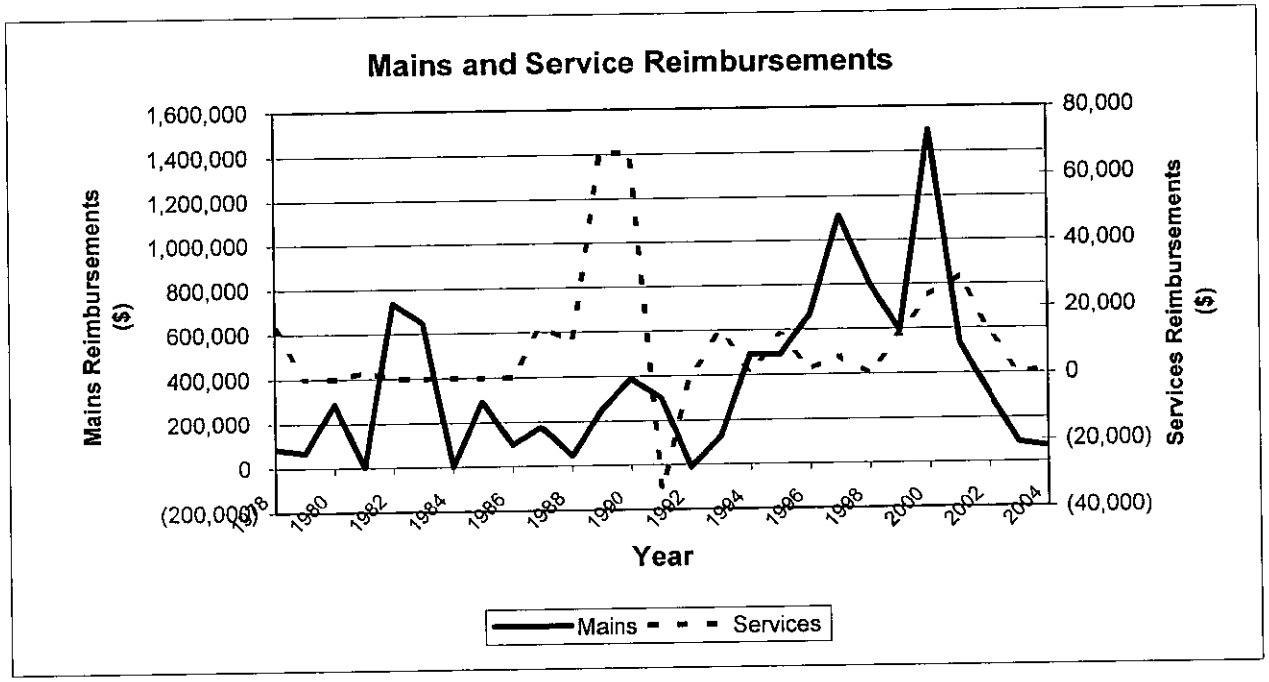
Missouri Gas Energy
Comparison of Depreciation Rates
of Comparable Companies Used in Staff's Recommended ROE

Reference	Company Name	Location	12 Months Ended	Property/Plant/ Equipment and Intangibles $ million	Depreciation/ Amortization Expense $ million	Indicated Depreciation Rate
(1)	AGL Resources	Tennessee, Georgia, Virginia	12/31/2005	3,271.00	133.00	4.07%
(1)	New Jersey Resources Corp.	Gulf Coast to New England	9/30/2005	905.13	35.23	3.89%
(1)	Northwest Natural Gas	Washington and Oregon	12/31/2005	1,373.42	61.65	4.49%
(1)	Piedmont Natural Gas Co.	North and South Carolina, Tennessee	10/31/2005	1,939.81	91.14	4.70%
(1)	South Jersey Industries	New Jersey	12/31/2005	877.35	26.84	3.06%
(1)	WGL Holdings	Washington, D.C., Virginia, Maryland	9/30/2005	1,969.68	93.73	4.76%
	Average					4.16%
	Missouri Gas Energy					
(2)	Existing Rates	Missouri	6/30/2006	824.99	22.66	2.75%
(2), (3)	Staff Recommendation	Missouri	6/30/2006	824.99	22.56	2.74%
(2)	B&V Recommendation	Missouri	6/30/2006	824.99	25.44	3.08%

(1) Source: finance.yahoo.com
(2) Rebuttal Schedule TJS-1
(3) Schedule GEM 4, GR-2006-0422



Missouri Gas Energy
Comparison of Mains and Services Historical Reimbursements and Effect on Recommended Net Salvage Allowance



	Net Salvage Allowance					
	Macia's Analysis-Including Reimbursements			Excluding Reimbursements		
	1995-2004 10 Year Avg.	2000-2004 5 Year Avg.	Recommended	1995-2004 10 Year Avg.	2000-2004 5 Year Avg.	Recommended
Account 376	19.52%	6.22%	5.00%	-14.83%	-18.58%	-15.00%
Account 380	-27.86%	-70.63%	-28.00%	-28.24%	-72.05%	-28.00%

GR-2006-0422
Missouri Gas Energy
SCHEDULE 4. Depreciation Rate Determination and Corresponding Annual Accrual

Account Number	Description	Original Cost 6/30/2006	Existing Ordered ASL (Years)	Existing Ordered Net Salvage	Existing Ordered Depreciation Rate	Existing Ordered Annual Accrual	Corrected Staff Proposal ASL (Years)	Corrected Staff Proposal Net Salvage	Corrected Staff Proposal Depreciation Rate	Corrected Staff Proposal Annual Accrual	Company Proposal ASL (Years)	Company Proposal Net Salvage	Company Proposal Depreciation Rate	Company Proposal Annual Accrual	Difference Between Corrected Macias and Company Proposed
	DISTRIBUTION														
375.00	Structures and Improvements	5,584,958	61	0%	1.65%	92,152	45	10%	2.00%	111,699	45	-	2.19%	122,311	10,611
376.00	Mains	339,884,706	44	0%	2.27%	7,715,383	45	-15%	2.56%	8,701,048	44	-	2.43%	8,259,198	(441,850)
378.00	Measuring and Regulating Equip.	11,634,249	35	0%	2.86%	332,740	41	0%	2.44%	283,876	35	-	2.89%	336,230	52,354
379.00	Meas & Reg Equip - City Gate	3,058,251	47	0%	2.13%	65,141	41	0%	2.44%	74,621	40	-	2.64%	80,738	6,117
380.00	Services	294,362,067	37	0%	2.70%	7,947,776	32	-28%	4.00%	11,774,483	32	(800,000)	3.41%	10,037,746	(1,736,736)
381.00	Meters	31,036,775	35	0%	2.86%	887,652	41	-1%	2.46%	763,505	35	-	2.96%	918,689	155,184
382.00	Meter Installations	68,835,673	35	0%	2.86%	1,968,700	41	0%	2.44%	1,679,590	35	-	2.92%	2,010,002	330,411
383.00	House Regulators	11,558,045	41	0%	2.44%	282,016	45	0%	2.22%	256,589	42	-	2.34%	270,458	13,870
385.00	Industrial Meas and Reg Equipment	372,505	30	0%	3.33%	12,404	43	0%	2.33%	8,679	30	-	3.29%	12,255	3,576
	TOTAL DISTRIBUTION	766,327,228				19,303,964				23,654,090				22,047,627	(1,606,463)
	GENERAL														
390.00	Structures and Improvements	661,193	50	0%	2.00%	13,224	41	0%	2.44%	16,133	45	40.00%	1.21%	8,000	(8,133)
391.00	Office Furniture and Equipment	6,970,421	12	0%	8.06%	561,816	11	0%	9.09%	633,811	11	0.00%	9.10%	634,308	697
392.00	Transportation Equipment	5,043,979	11	0%	8.70%	438,826	12	10%	7.50%	378,298	11	10.00%	8.18%	413,102	34,803
393.00	Stores Equipment	538,350	37	0%	2.70%	14,535	32	0%	3.13%	16,850	30	0.00%	3.35%	18,035	1,184
394.00	Tool, Shop, and Garage Equipment	5,154,470	19	0%	5.30%	273,187	27	0%	3.70%	190,715	20	0.00%	5.01%	258,239	67,524
396.00	Power Operated Equipment	243,807	12	0%	8.33%	20,309	17	25%	4.41%	10,752	15	20.00%	5.36%	13,068	2,316
397.10	Electronic Reading - ERT	36,324,861	20	0%	5.00%	1,816,243	20	0%	5.00%	1,816,243	20	0.00%	5.00%	1,816,243	-
397.20	Communication Equipment	3,289,347	16	0%	6.25%	205,584	21	0%	4.76%	156,573	16	0.00%	6.27%	206,242	49,669
398.00	Miscellaneous Equipment	431,485	26	0%	3.85%	16,612	26	0%	3.85%	16,612	20	0.00%	4.93%	21,272	4,660
	TOTAL GENERAL	58,657,913				3,360,336				3,235,789				3,388,510	152,721
	GRAND TOTAL	824,985,141			2.75%	22,664,300			3.26%	26,889,879			3.08%	25,436,137	(1,453,742)
	SCHEDULE GEM-4									22,563,958				25,436,137	2,872,179
	DIFFERENCE ATTRIBUTABLE TO MAINS SALVAGE									1,529,482					
	DIFFERENCE ATTRIBUTABLE TO SERVICES ASL									2,796,440					
	TOTAL DIFFERENCE BETWEEN COMPANY PROPOSED AND MACIAS AFTER CORRECTION OF MAINS SALVAGE AND SERVICES ASL									4,325,921					