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Witness: John C. Dunn
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BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

MISSOURI GAS ENERGY
CASE NO. GR-2004-0209

REBUTTAL TESTIMONY

OF

JOHN C. DUNN

ON BEHALF OF MISSOURI GAS ENERGY

May 2004

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Q. Please state your name and business address.

A. My name is John C. Dunn. My business address is 7400 West 110th Street, Suite 750, Overland Park, Kansas 66210.

Q. Are you the same John C. Dunn who filed direct testimony in this case before the Missouri Public Service Commission (``Commission'') on behalf of Missouri Gas Energy (``MGE''), a division of Southern Union Company (``Southern Union'')?

A. Yes sir, I am.

Q. What is the purpose of your rebuttal testimony?

A. To respond to the direct testimony of Mr. David Murray, a witness for the Commission Staff (``Staff''), and the direct testimony of Mr. Travis Allen, a witness for the Office of the Public Counsel (``Public Counsel''). Both filed testimony in this case recommending a return on equity, a regulatory capital structure and an overall cost of capital for MGE in this proceeding.

ORGANIZATION OF REBUTTAL

Q. How is your rebuttal testimony organized?

A. The testimony is organized into three major areas, each of which has sub-topics. The three major areas are:

1. The selection of the proper capital structure for the MGE cost of capital calculation, including the proper equity ratio.

2. The actual cost of debt for the MGE cost of capital calculation.

3. The required return on equity for MGE, including the proper discounted cash flow (``DCF'') calculations.

Both the Staff and Public Counsel witnesses have performed arbitrary and contrived calculations in the above three areas, producing an artificially low recommended cost of capital. These unreasonably low recommendations are not the product of genuine analytical effort because both witnesses lack the required expertise. Rather they are improper, strategic efforts designed to produce a specific desired result. Consequently, neither recommendation is helpful to the Commission in reaching a decision.

PRELIMINARY MATTERS

Q. Are there any preliminary matters to be addressed at this point?

A. Yes. Staff witness Murray's direct testimony contains a substantial amount of meaningless boilerplate. Mr. Murray admitted during depositions in both Case No. GR-2001-292 and Case No. GR-2004-0209 that his testimony is essentially a ``canned'' document modeled in excruciating detail after other testimonies previously filed by the Staff.

In both depositions, Mr. Murray confirmed that much of his testimony in this case contains the same language and supposed ``analysis'' as his testimony in 2001 regarding MGE in Case No. GR-2001-292 and as used by Staff witness Ronald

L. Bible submitted in 1998 in Case No. GR-98-140. Indeed, some parts of Mr. Bible's testimony were simply copied into Mr. Murray's testimony in this proceeding, even though there is no apparent relevance of the copied material to this case. (See Murray direct testimony, p. 5, lns. 28-34 and p. 6, lns. 1-11.)

The same is true of the direct testimony of Public Counsel witness Allen. Like Mr. Murray's use of ``utility division testimony,'' Mr. Allen has substantially adopted the prior testimony of Mr. Mark Burdette, formerly with the Public Counsel.

Both Mr. Murray's calculations and Mr. Allen's calculations are mechanistic and have simply been carried forward from previous rate proceedings with no meaningful analysis. In the case of Mr. Allen, the adoption of the testimony took place only weeks after his employment by the Public Counsel.

Q. If the policy portion of the testimony of these witnesses is on point and relevant in this proceeding, is it appropriate for the Commission to consider that testimony in this case?

A. If the testimony and the analysis is thoughtful, prepared by a qualified expert and based on a careful analysis and relevant, it is certainly appropriate to consider it in this proceeding.

Q. Do these testimonies meet this standard?

A. No. Neither Mr. Murray's testimony nor Mr. Allen's testimony meets this standard. Instead, their ``canned''

testimony from prior cases has been simply ``dumped into the record'' in this proceeding. As a result, there is no meaningful determination of the return on equity for MGE presented by the Staff or Public Counsel.

Further, the superficial analysis sponsored by both Mr. Allen and Mr. Murray demonstrates clearly that neither analysis is appropriate for determining a cost of capital recommendation for MGE in this case. Both are arbitrary, and both are designed to produce a recommendation which is low by any standards and extremely low by current standards of reasonableness.

Q. Are there objective criteria which can be used to determine whether the Staff and the Public Counsel return on equity and cost of capital recommendations in this case are outside the bounds of reasonableness such that they should not be accorded any weight by the Commission?

A. Yes. The recommendations of both witnesses can be compared to the findings of other regulatory bodies in similar rate proceedings around the country. These decisions bring together not only the recommendation of numerous parties, but also the wisdom of various commissions in reaching their decisions. It certainly is appropriate to compare such decisions of other commissions to recommendations being made in Missouri. This Commission cannot reasonably make decisions in a vacuum without any sense of context as to what other organizations are doing.

Q. Do you have any information concerning such decisions?

A. Yes. The table below the data for which came from Regulatory Research Associates, contains decisions made by regulatory authorities for natural gas utilities for the period from January 1, 2003 through the first quarter 2004:

Period	Return Equity	Equity Ratio	Cost of Capital
2002	11.03%	48.28%	8.80%
2003	10.99%	49.03%	8.75%
2004 Q 1	11.10%	45.51%	8.52%

Q. What does this information reveal?

A. Clearly, decisions made recently by other commissions are substantially higher in terms of return on equity and cost of capital than the recommendations made to this Commission by both its own Staff and the Public Counsel in this case. Here the Staff is recommending only a 9.02% return on equity on a 25.38% equity ratio resulting in a cost of capital of 6.68% to 6.94% and the Public Counsel is recommending a 9.34% return on equity on a 25.98% equity ratio resulting in a cost of capital of 7.38%. Furthermore, the decisions of the other commissions also have much higher equity ratios.

Q. What does this tell you?

A. This brings into sharp focus the fact that the recommendations of both the Public Counsel and the Staff in this proceeding are significantly out of step with decisions of other regulatory authorities, and should be rejected by the Commission on this basis alone.

Q. Public Counsel witness Allen argues at page 16, lines 12-17 of his direct testimony that his recommendation to use the upper limit of his range is adequate compensation to the

shareholders for the significant difference in the equity ratio between the comparative companies and the equity ratio which he recommends for MGE. How do you respond?

A. His assertion is unreasonable.

Q. Please explain.

A. The equity ratio proposed by witness Allen is 40% for his comparative companies and only 26% for MGE. As I will show later, the 40% equity ratio for the Allen comparative group may even be too low. The equity ratio he attributes to MGE is only two-thirds of the equity ratio of his comparative group before correction. His total adjustment to the return on equity to compensate for that differential is to move from the mid-point of his range of returns on equity to the upper limit, or from 9.17% return on equity to 9.34% return on equity, or 17 basis points (Allen direct testimony, p. 16, lns. 9-17).

Even with this adjustment, Mr. Allen's return on equity recommendation is significantly ``out of line'' with the findings of other commissions.

Q. Did the Staff witness make any such adjustment for the artificially low equity ratio he is recommending for MGE?

A. No. The Staff witness apparently made no such adjustment nor in any way recognized the huge difference in financial risk associated with the artificially contrived and arbitrarily low common equity ratio he recommends for MGE in comparison to the equity ratio of the comparative group.

PROPER CAPITAL STRUCTURE

Q. The first major area of your rebuttal is capital structure. How does capital structure fit into the regulatory determination?

A. The capital structure represents the mix of capital used in financing the assets of the utility. In other words, in the case of MGE, it is the capital used by the utility to finance the pipes, meters and service trucks used to provide natural gas distribution service to the customers. Each of the components of the capital structure has a different cost and some of the components' costs are taxable; therefore, it is necessary to determine the mix of capital so that the individual costs and related income tax can be applied in calculating the overall cost of capital.

Q. Does the capital structure play any other role in the determination of cost of capital?

A. Yes it does. The amount of debt employed in the capital structure is a key factor in determining the amount of financial risk which will be experienced by the common equity shareholder. Risk is a primary determinant of the required return on equity. Thus, the establishment of the mix of capital and the risk which results from that mix is extremely important.

Q. How does risk fit into the investor calculation?

A. As risk increases for individual investments, investors require a higher return. Conversely, if the risk is lower,

the return demanded by investors is lower. This concept is not subject to debate and it is not controversial. This is absolutely fundamental to financial analysis.

Q. What are the risks caused by the capital structure?

A. The capital structure specifically is associated with financial risk. In the analysis of total investor risk, there are two types of risk, financial risk and business risk. Financial risk refers to the amount of risk created by adding leverage or debt to the capital structure of the company. The more debt or leverage added to the capital structure, the greater the financial risk. Financing with 100% equity means there is no financial risk. As debt is added to the capital structure, financial risk is created and increases with the percentage of debt.

Q. What about business risk?

A. Business risk is entirely different than financial risk. Business risk is the risk associated with the operation of the entity. It is risk which rises up from the operation of the assets and it is related to weather, customer mix, the fact that revenues - for any number of reasons - may be lower than planned, returns may be different than expected, and overall operating results may be different than reasonably anticipated. Business risk also encompasses the risk of regulation, the risk of service obligations and the risk of general legal liability. These business risks are substantially unrelated to financial risk but add to the

total risk of the company. Total risk or shareholder risk is the sum of business risk and financial risk.

Capital Structure proposed by the Staff and Public Counsel is Unusual and Arbitrary

Q. What capital structure did the Staff and Public Counsel witnesses use in their calculations of rate of return for MGE?

A. Both used the consolidated capital structure of Southern Union, including the impact of its Panhandle Eastern Pipeline Company (``Panhandle Eastern'') subsidiary.

Q. What equity ratio did the Staff witness use in his calculation of rate of return?

A. As shown on Schedule 25 to Mr. Murray's testimony, the equity ratio is 25.38%.

Q. What was the equity ratio used by the Public Counsel witness in his calculation of rate of return?

A. The equity ratio was 25.98%.

Q. Is the consolidated capital structure the proper capital structure to use in calculating the rate of return for MGE?

A. Absolutely not.

Q. What is the proper capital structure to be used in this analysis?

A. The proper capital structure is the stand alone capital structure of Southern Union after removing short-term debt and the impact of its Panhandle Eastern subsidiary.

Q. Why?

A. There are three overriding reasons. One is specific to the circumstances of MGE. The second is financial and practical and a matter of the proper application of finance theory. The third is simply the application of basic reasonableness analysis.

Q. Please explain.

A. MGE is a division of Southern Union. Southern Union is a New York Stock Exchange publicly traded company which, until it acquired Panhandle Eastern, was primarily a natural gas distribution company with several individual divisions providing natural gas distribution service in multiple states and jurisdictions.

In 2003, Southern Union entered into an agreement to acquire Panhandle Eastern. To make that acquisition, Southern Union applied to the Commission for approval. To obtain that approval, Southern Union entered into a stipulation and agreement with the Staff, Public Counsel and other parties which was subsequently approved and so ordered by the Commission. This stipulation and agreement contained a number of conditions which were required by the Staff, Public Counsel and other parties and were designed to insulate MGE from the impact of Panhandle Eastern's operations.

Q. What do you mean by the use of the term ``insulate''?

A. As is plain from reading the stipulation and agreement, ``insulation'' relates to isolating financially, operationally and in every other possible way a subsidiary

from other entities within the corporation, including the parent corporation. An essential ingredient of this ``insulation'' is that the parent corporation not guarantee or recourse the subsidiary's debt, or stand behind the subsidiary in any financial matter.

Q. Please continue.

A. The stipulation and agreement required the insulation of the MGE operation from Panhandle Eastern. It expressly prohibited funds flowing from Southern Union, the parent, into its Panhandle Eastern subsidiary.

Q. How have the Staff and Public Counsel applied that stipulation and agreement in this case?

A. The Staff and Public Counsel's use of the consolidated capital structure completely violates this fundamental tenet of the stipulation and agreement. It brings the Southern Union distribution properties, including MGE, together with the pipeline into a single entity.

Q. Why did the Staff and Public Counsel witnesses do this?

A. The Staff and Public Counsel witnesses do so in this case, in my opinion, to take advantage of a lower equity ratio and Panhandle Eastern's lower cost of debt.

Q. How do you respond?

A. For the Staff and Public Counsel to demand insulation of MGE from Panhandle Eastern prior to the acquisition and then little more then a year later to propose that rates be set for MGE using a consolidated capital structure, including the impact of Panhandle Eastern, is the height of

inconsistency and arbitrariness that should not be sanctioned by the Commission.

Q. Did the Panhandle Eastern acquisition make Southern Union's consolidated capital structure unusual and temporarily distorted?

A. Yes. The acquisition made the consolidated capital structure appear to have a lower equity ratio for all of the investments of Southern Union rather than only for the pipeline investment. The acquisition of Panhandle Eastern was a major event for Southern Union. It has caused the equity ratio on a consolidated basis to be lower than had been the case prior to the acquisition. Even the Public Counsel witness admits that the current capital structure is unusual.

This anomalous capital structure will be changed and Southern Union is working diligently to cause the equity ratio to return to a normal range. However, a normal range for the consolidated company may not be a normal capital structure for the distribution properties.

Q. Why is that?

A. The consolidated capital structure is an accounting artifact created by adding together the individual capital structures of the individual entities in Southern Union. Thus, the consolidated capital structure would be a proper fit for the distribution properties only by accident.

Q. Is the consolidated capital structure in any way appropriate for the determination of rate of return in this proceeding?

A. It is not because, in addition to the two factors just discussed, attributing the consolidated capital structure including Panhandle Eastern to MGE fails to pass a basic reasonableness test when compared to capital structures maintained, on average, by other companies within the distribution industry and when compared to Standard & Poor's (``S&P'') utility financial target ratios of total debt to total capital. Southern Union's consolidated capital structure ratios at December 31, 2003 are not consistent with S&P's financial targets for a utility with bonds in the BBB bond rating category and which is assigned a business position of ``4'', such as Southern Union. S&P's Utility Group Financial Target benchmark ratios, revised June 21, 1999, indicate that the total debt to total capital ratio required by S&P of a public utility with bonds rated in the BBB bond rating category and a business position of ``4'' ranges from 49.5% to 57%, implying a total equity to total capital ratio of 43.0% to 50.5%. Mr. Murray's recommended capital structure contains a total debt ratio of 68.45% and a total equity ratio of 31.55% which fall far above and far below S&P's ranges of total debt to total capital and implied total equity to total capital ratios for public utilities, such as Southern Union, with bonds rated in the BBB bond rating category and which are assigned a business position of ``4''.

Q. Is the capital structure recommended by Mr. Murray representative of the anticipated capital structure of the company in question and investor expectations of same?

A. No. In an April 6, 2004, research summary for Southern Union, S&P, which is investor influencing, expects that Southern Union will significantly decrease the leverage in its capital structure, recognizing that its current level of debt is not appropriate for the BBB bond rating. S&P states: ``By the end of 2005, Standard & Poor's expects that the total debt to total capitalization ratio will be appropriate for the `BBB' rating target benchmark of 56%. Moreover, in 2006, the conversion of $125 million of debt to equity will lower that ratio to around 50%.''

Q. Is there another MGE witness who will discuss the capital structure and explain how, consistent with generally accepted accounting principles, to properly exclude the impact of Panhandle Eastern from Southern Union's capitalization?

A. Yes, Mr. John Gillen.

Q. When you said that the capital structure was proposed by the Staff and Public Counsel was designed to reduce the equity ratio, what specifically did you mean?

A. The equity ratio of the consolidated capital structure is lower than the equity ratio of the capital involved in supporting the natural gas distribution properties of MGE. This is primarily because the consolidated capital

structureincludes approximately $1.2 billion in Panhandle Eastern long term debt.

Q. What are the specific steps that Southern Union has taken to improve its equity ratio?

A. Southern Union pays no common stock dividend. This means that 100% of the earnings of Southern Union are retained by Southern Union and are available to repay indebtedness and improve the equity ratio.

Q. What other steps has Southern Union taken?

A. Southern Union has publicly announced that it will achieve a 55% debt ratio as quickly as possible. This most likely will involve a further issuance of common equity. In fact, Southern Union currently has an outstanding petition with the Massachusetts Department of Telecommunications and Energy seeking approval to issue up to $130 million of common equity. Approval is expected during the week of May 24, 2004. Southern Union has already received approval to issue up to $150 million of common equity from the Pennsylvania Public Utility Commission, the only other regulatory body from which approval is required. It should also be noted that none of the proceeds from Southern Union's planned common equity offering will be used to invest in Panhandle Eastern, which is consistent with the terms and conditions of the aforementioned stipulation and agreement among Southern Union, the Staff, Public Counsel and other parties.

In addition, Southern Union issued a hybrid security in 2003, that currently appears in its long term debt balance but will convert to common equity in 2006. This will also contribute to a higher equity ratio.

Q. Mr. Dunn, what are the capital structures proposed by the Staff and Public Counsel witnesses?

A. The capital structures proposed by the Staff and Public Counsel witnesses are as follows:

	Recommended Capital Ratios	
Component	Staff	Public Counsel
Common Stock Equity	25.38%	25.98%
Preferred Stock	6.17	6.14
Long Term Debt	61.10	59.42
Short Term Debt	7.35	7.35
Total	100.00%	100.00%

Q. What do you believe is the appropriate capital structure for MGE in this case?

A. The appropriate capital structure for MGE in this case, as I proposed in my direct testimony, is the use of the Southern Union capital structure excluding the impact of Panhandle Eastern. This is consistent with the Commission's Order approving the Panhandle Eastern acquisition. At June 30, 2003, that capital structure was simply the consolidated capital structure reduced by the Panhandle Eastern long term debt. I also made adjustments to the capital structure for a new issue of preferred stock. Since that time, Panhandle Eastern has produced approximately $49 million in retained earnings. Those retained earnings are a part of the Panhandle capital structure and should be eliminated from

the consolidated capital structure at December 31, 2003. A similar adjustment should be made at the true up date for the then accrued and recorded pipeline retained earnings. As was the case with the capital structure at June 30, 2003, the Panhandle Eastern debt should be eliminated from the consolidated capital structure in calculating the capital ratios for the MGE distribution properties at the true up date. As shown in the rebuttal testimony of MGE witness John Gillen, removing the impact of Panhandle Eastern from the consolidated capital structure in a manner consistent with generally accepted accounting principles - results in a capital structure as follows:

Rate of Return
December 31, 2003

	Amount (000)	Ratio	Cost	Weighted Cost
Common Equity	$900,247	42.1%	12.00%	5.05%
Preferred Stock	230,000	10.7	7.860	.84
Long Term Debt	1,008,635	47.2	7.2895	3.44
Total	$2,138,882	100.0%		9.33%

This is the appropriate capital and rate of return structure to use to set rates for MGE in this case.

The Consolidated Capital Structure is Wrong in Any Event

Q. You said there was a second reason why the consolidated capital structure should not be used in this proceeding. What is that reason?

A. Southern Union is a complicated company with different capital demands by different divisions and subsidiaries. It is comprised of two major business activities. The first is the distribution business, which in turn is comprised of a series of divisions operating in different states and jurisdictions. The second major business of Southern Union, the Panhandle Eastern pipeline operation, is entirely different. The Panhandle Eastern operations have different risks and, consequently, different capital mix requirements. The consolidated capital structure approach assumes that those responsible for financial decisions at Southern Union do not use contemporary financial theories and do not approach the matter seriously, a view which is beyond a doubt inappropriate and incorrect.

Q. Please explain.

A. It is simply wrong to say that companies do not allocate different types of capital to their various enterprises, divisions, subsidiaries and investments based upon management's appraisal of the risk of the various entities. In reality, companies do make this allocation, which results in different capital structures and different capital costs for different activities. As a consequence of the allocation, each of the activities of a complicated company would have a unique and specific operation for its capital structure.

Q. What does all of this mean for this case?

A. In this case, Southern Union management allocates capital to MGE and makes its investment decisions for MGE based on Missouri risk and opportunity. Southern Union makes similar decisions for its other distribution operations and its pipeline operations based on their risks and opportunities. The risks and opportunities are clearly different. To say that all entities are financed with simply the average capital mix of the parent company is inaccurate, and in no way reflects the reality of the company.

Q. Would the allocation of different capital mixes to the various distribution operations and to the Panhandle Eastern entities be consistent with the current theory of finance?

A. Yes it would.

Q. Can you provide a reference to an accepted financial text that demonstrates this process?

A. Yes. In the text book *Managerial Finance*, Lawrence J. Gittman, Michael D. Joehnk and George E. Pinches include the following statement:

> ``Because of the vast differences in business and financial risk among various lines of business and because of the growth of conglomerates and other diversified firms, many companies have begun to use risk adjusted divisional costs of capital. By division, we mean some sub-unit of the firm whether it is an actual division, a subsidiary, a project or a line of business. If the capital expenditure projects undertaken by the division are essentially similar with respect to risk (but differ in general risk level from projects of other divisions), the use of divisional screening rates which are the division-specific MCCs (marginal costs of capital) should be used.

> Those divisions with greater risk than that of the firm as a whole will have higher MCCs, whereas those with below average risk will have lower costs of capital than the firm-wide MCC.
>
> The concepts discussed earlier in the chapter apply as well to divisional screening rates; that is, we must concern ourselves with the appropriate target capital structure for each division, and then calculate the explicit costs for each source of financing. The explicit cost of debt and preferred stock should be adjusted from those for the firm as a whole, but typically they are not. However, the cost of common equity, which reflects economic conditions in the exposure to business risk for a firm with no debt or preferred stock must be determined for each division. In calculating divisional costs of capital, the important elements are the division's target capital structure (reflecting primarily financial risk) and its cost of equity capital (reflecting primarily business risk.'' *Managerial Finance*, Lawrence J. Gittman, Michael D. Joehnk and George E. Pinches, Harper and Lowe Publishers, New York 1985. (Emphasis supplied.)

Clearly, this is not a new concept since it appears in an introductory text book in 1985.

Q. Are there other academic references that support this concept?

A. Yes. Roger A. Morin, in his book Regulatory Finance Utilities Cost of Capital, states a widely accepted principle of finance which parallels that which was stated by Professor Gittman. At page 344, Dr. Morin says:

> Incidentally, Figure 14-4 bears a crucial message: The cost of capital for a division investment project or specific asset investment depends on the riskiness of that investment and not the identity of the company undertaking the

> project. The cost of capital depends on the use of funds and not the source of funds. This is because the cost of capital is fundamentally the opportunity cost of the industry. That is, the foregone return on comparable risk investments.

Q. Are the theories described in these two books actually applied in the practice of finance?

A. Yes, they are. In the spring-summer 1998 issue of the Journal of Financial Practice and Education (``FPE''), a survey is reported in an article by Robert F. Bruner, Keith M. Eades, Robert S. Harris, and Robert C. Higgins on ``Best Practices in Estimating the Cost of Capital: Survey and Synthesis.'' In this article, the authors report on a survey which they conducted concerning the cost of capital of 27 highly regarded corporations, 10 leading financial advisors, and 7 best-selling text and trade books. One of the survey questions bears directly on the issue of capital structure and the determination of which capital structure is appropriate.

Q. What was that survey question?

A. The authors asked the financial advisors and reviewed the textbooks trade books to determine an answer to the following question:

> In valuing a multi-divisional company, do you aggregate the values of the individual divisions or just value the firm as a whole? If you value each division separately, do you use a different cost of capital for each one?

Q. What was the response to this survey question?

A. Of the financial advisors surveyed, 100 percent indicated that they valued the different parts of a corporation separately, and, that they used a different weighted average cost of capital for each of the valuations.

In addition, 100 percent of the textbooks/trade books reviewed by the authors indicated the use of a distinct weighted average cost of capital for each division was appropriate.

Q. What does this demonstrate?

A. It demonstrates that the consolidated capital structure is not used in either theoretical finance or the practice of finance.

Q. Is it possible that the consolidated capital structure is appropriate to determine the rate of return for MGE in this proceeding?

A. No. It is not even a possibility.

Q. Why not?

A. We know at this point exactly the mix of capital used by Southern Union to acquire Panhandle Eastern. That mix of capital is the capital which currently stands behind Southern Union's investment in Panhandle Eastern. It is reasonable to exclude that mix of capital from the consolidated capital structure and treat the residual Southern Union as the capital structure of the distribution entities, and the capital structure I have recommended follows this approach. This approach also complies with the order of the Commission in approving the acquisition of

Panhandle Eastern while the use of the consolidated capital structure, including the impact of Panhandle Eastern, does not.

Q. Have you followed this approach in your initial recommendation to the Commission in this case?

A. Yes I have. As I indicated, minor refinements have been made as a consequence of retained earnings in the pipeline operation, but the concept has not changed.

ACTUAL COST OF LONG TERM DEBT

Q. Mr. Dunn, how did the Staff witness calculate the cost of long term debt for MGE?

A. The Staff witness used the average cost of long term debt for the entire corporation, including the impact of Panhandle Eastern long term debt.

Q. How would you characterize this calculation?

A. It is not appropriate.

Q. Why not?

A. As indicated previously, Southern Union entered into a stipulation and agreement with the Staff, Public Counsel and other parties in connection with the acquisition of Panhandle Eastern by Southern Union in Case No. GM-2003-0238. That stipulation and agreement was subsequently approved by the Commission and currently is in force.

The main thrust of that stipulation and agreement is to insulate the Southern Union or MGE cost of service in Missouri from the impact of that acquisition. The Staff

approach violates both the spirit and the letter of that stipulation and agreement.

Q. Please explain.

A. Panhandle Eastern has approximately $1.2 billion in long term debt. This long term debt was raised by Panhandle Eastern prior to its acquisition by Southern Union in 2003. In fact, some of the Panhandle Eastern long-term debt was raised as early as 1994. Those funds could not have been used in the development or financing of facilities to serve MGE's customers.

Furthermore, the insulation sought by the Staff, Public Counsel and other parties in the acquisition proceeding and ordered by the Commission means that MGE is to be insulated from the impact of Panhandle Eastern. The Staff, however, adds the Panhandle Eastern long term debt in the calculation of the imbedded cost of debt and in the determination of the capital structure of MGE for no purpose other than to reduce the equity ratio and to reduce the cost of debt. This of course decreases the overall cost of capital for MGE. I believe the Staff's action is arbitrary and capricious, contrived, transparent, and wrong.

Q. Where do these calculations appear in Mr. Murray's schedules?

A. Schedule 10 of Mr. Murray's direct testimony shows the calculation of the cost of long term debt.

Q. Please describe the calculation.

A. The Southern Union cost of long term debt is 7.17% as shown on the top half of the schedule. That cost is related to One Billion, Fifty-nine Million of long term debt. The additional One Billion, One Hundred Eighty-five Million of long term debt associated with Panhandle Eastern has an average cost of 5.698%. That cost, when combined with the Southern Union cost, reduces the Southern Union imbedded cost of debt from 7.17% to 6.38%.

Q. Is Panhandle Eastern a corporation?

A. Yes it is.

Q. Was the Panhandle Eastern debt raised by that corporation?

A. Yes it was.

Q. Is Panhandle Eastern debt rated separately by the rating agencies?

A. Yes it is.

Q. Has the Staff ever said that it would use the capital structure of the company for ratemaking purposes if the company raised its own long term debt?

A. Yes. In the past, the Staff has said that in its view an important criteria in deciding whether or not to use the ``company only'' capital structure rather than the consolidated capital structure is whether the company or division raised its own debt from the public. See for example the direct testimony of David Murray in Aquila, Inc., Case Nos. ER-2004-0034 and HR-2004-0024, page 20, lines 16-20, attached hereto as Rebuttal Schedule JCD-1.

Q. How does that apply here?

A. Panhandle Eastern raises its own long term debt, which is separately rated and non-recourse to Southern Union. That debt should be isolated from Southern Union's MGE distribution operations, together with the appropriate amount of Panhandle Eastern common equity. When that is done, a Southern Union only capital structure (with the impact of Panhandle Eastern removed) is the result, which is the only appropriate capital structure to use for purposes of this case.

SHORT TERM DEBT IN THE CAPITAL STRUCTURE

Q. Did Staff witness Murray include short term debt in the capital structure?

A. Yes he did.

Q. Did Public Counsel witness Allen include short term debt in the capital structure?

A. Yes he did.

Q. Is that appropriate?

A. It is not.

Q. Why not?

A. Short term debt is just what the name implies - short term. Southern Union typically uses short term debt to finance utility plant additions and other capital requirements for short periods of time until permanent, long term financing is put in place in conformity with the principle of finance which suggests that assets should be financed with obligations that have a maturity which is similar to the

life of the asset being financed. As such, it is inappropriate to include short-term debt balances in the capital structure for permanent rates.

Furthermore, Southern Union, including MGE, utilized short-term debt over the past year to finance temporary working capital needs such as under-collected gas costs and high levels of customer receivables caused by increasing purchase gas costs. Southern Union has repaid a significant portion of its short-term debt over the past several months with (i) proceeds from the sale of its 7.55% preferred stock in October 2003, (ii) free cash flow generated as a result of the continuance of its stock dividend policy, which allows the Company to retain its earnings for such purposes, and (iii) proceeds from the collection of receivables and previously under-recovered gas costs. As of April 30, 2004, Southern Union had no outstanding short-term debt.

REQUIRED RETURN ON EQUITY

Contrived and Mechanical DCF Calculations

Q. Your third major criticism was the fact that both the Staff and the Public Counsel witnesses used arbitrary, contrived and mechanistic DCF calculations. Please describe this criticism in greater detail.

A. For at least the last three testimonies sponsored by different members of the Staff in connection with the

determination of MGE's cost of capital, including this case, the Staff witness has processed a series of numbers through a set of schedules, with no apparent comprehension of the meaning of the numbers or the implications of the data. This processing of numbers is not an analytical determination of the return on equity for MGE. It is simply an arithmetic exercise which produces anomalies that are averaged and subsequently disguised in further averaging calculations.

Dividend Per Share Growth Should not be used in the DCF Calculations

Q. Please explain.

A. One of the major problems associated with the mechanistic analysis that begins on Schedule 15 of Staff witness Murray's direct testimony is the fact that there has been a change in dividend policy in the utility industry. That change in dividend policy means that a somewhat different approach to the determination of the DCF return on equity is required. It appears that the Staff witness either so mechanistically calculates and processes the numbers that he does not recognize the problem with the data and the distortion the bad data causes in the end result, or he recognizes the problem and ignores it. It should also be noted that to a lesser degree, the same is true with respect to book value per share growth. As many companies work to clear extraneous items from their balance sheets charges are

made directly to book value which distorts the growth calculation.

Q. Please explain.

A. The historic policy of utility companies was to pay high dividends (as a percent of earnings) and increase the underlying dividends frequently, usually every year. Recently, utility companies in general and gas distribution companies in particular have been striving to improve equity ratios and decrease the need for repeated equity offerings by reducing the increases in dividends while improving the tax efficiency of their return to shareholders. Consequently, dividend payments per share have not been increasing as rapidly as either earnings per share or book value per share.

Since the unadjusted older form of the DCF model focused on dividend growth as the driving force behind the shareholders' return, some modification is required because dividends are not now growing apace with earnings.

Q. Is this obvious from Mr. Murray's schedules?

A. It is. For example, Schedule 15-1 to Mr. Murray's direct testimony contains a calculation of dividend per share growth and earnings per share growth for the period 1992 through 2002. The dividend per share growth is 1.66% and the earnings per share growth is 4.38%, or two and one-half times as great. His Schedule 15-2 shows that the dividend growth has remained about the same in the five-year period

as in the ten-year period at 1.69%, but a corrected earnings per share growth rate is much higher.

Q. What do you mean ``corrected''?

A. The Staff witness calculates on his Schedule 15-2 earnings per share growth at 1.72%. This number is substantially influenced by two factors. The first factor is the fact that the data is terminated artificially in 2002, it is simply old data. Secondly, of the eight companies, three have negative growth in earnings per share, one in the amount of negative 9.23%. This negative growth should not be included in the calculations of average historic growth since it is not a factor that would influence a potential investor making a calculation of this type. Put simply, investors do not seek to invest in a company that has a negative growth future. In fact, even the Public Counsel witness has rejected including negative growth rates in the DCF calculation.

Q. Is there any further evidence that the dividend per share growth is much lower than the earnings per share growth?

A. Yes. The Staff witness has included three projected growth rates in earnings developed by professional analysts for his comparative group on his Schedule 16. Those three projected growth rates in earnings range from 4.81% to 5.75%. This compares to the dividend growth rate of 1.69% and 1.66% calculated on Mr. Murray's Schedules 15-1 and 15-2. Clearly, the dividend growth rate is out of line and a proper analysis would seek the explanation as to why it is

out of line and adjust the calculations appropriately. The Staff witness has not done so and consequently he has grossly understated the cost of common equity.

Q. Do the assumptions of the DCF model have anything to say about this difference?

A. Yes. The DCF model assumes that earnings, dividends and book value grow in tandem. Clearly, that is no longer the case. Staff witness Murray's continuous use of dividends, when their growth rate is out of step with earnings and book value, is a poor analytic technique and, in this case, apparently is done for no reason other than to reduce the recommended return on equity.

Q. How much does the use of this historic data in Mr. Murray's calculations affect his growth calculation?

A. The projected growth rates, which are the most relevant growth rates, range from 4.8 to 5.75% on his Schedule 16. After including in that calculation the historic growth rates, the growth used in the DCF analysis is lowered to 3.93%. The effect is between 1 and 1.75 percentage points. Adjusting Mr. Murray's DCF result for this change alone would produce an indicated return on equity of 9.52 to 10.22.

Q. Why in the face of this information would Mr. Murray continue to include the historic dividend per share growth in his calculation?

A. Mr. Murray continues to include this dividend growth either because the calculation is an unthinking, mechanistic

processing of numbers, or because he intentionally desires to reduce the number to produce the lowest possible return on equity. The evidence is abundant that including dividends per share growth in the calculation, at least on the historic basis, is wrong. To do so obviously is the result of ignoring reality or attempting to produce a desired end result.

Age of Data

Q. What is your comment with respect to the age of the data?

A. Mr. Murray used 2002 as an end point for the growth rates in his analysis even though his direct testimony was not filed until April, 2004, after publication of the March 2004 issue of the Value Line Survey on the natural gas distribution industry which included 2003 data. He indicated in his deposition that even if there were significant differences as a result of updating his data, he would not make the adjustments for this case. (Deposition, p.89, ln.2.)

Q. Have you compared Mr. Murray's 2002 data to newer 2003 data available from the Value Line Investment Service?

A. Yes I have.

Q. And what is the result of that analysis?

A. The way Mr. Murray's schedules work is that on Schedule 15-1, he derives the ten-year dividends, earnings and book value per share growth, and on Schedule 15-2, he derives the five-year dividends, earnings and book value per share growth. Then on Schedule 15-3, he takes the three ten-year

data points, adds them together and averages them, and the three five-year data points, again adds them together and averages them, and then averages those averages to produce a growth rate of 2.76%. That 2.76% is then carried forward to Schedule 16 and averaged with the analyst's forecasts.

Q. What would the result have been if he used new data?

A. The calculation which I have made shows that had he used the new data available to him at the time his testimony was filed, rather than the old data actually used, the growth rate which he would have included in the calculation on Schedule 16 is 3.85% rather than 2.76%. That derivation is as follows:

	Murray Old Data	Murray New Data
Growth		
DPS		
5 yr.	1.69%	1.79%
10 yr.	1.66	1.72
EPS		
5 yr.	1.72%	7.69%
10 yr.	4.38	3.96
BYPS		
5 yr.	3.75%	4.45%
10 yr.	3.38	3.54
Average	2.76%	3.85%

Q. Mr. Dunn, you indicated that you believe that the dividend per share growth should not be included in this calculation under the current circumstances and policies being employed by natural gas distribution companies. What would have been the effect if the dividend per share growth is not included in the calculation?

A. Simply substituting the current data would have increased the result of the calculation by more than one percentage point. Similarly, eliminating the dividend per share growth - - which is clearly an anomaly - - results in an increase from the original 2.76% employed by Mr. Murray to ~~4.16%~~ 3.32% -- for an increase of 1.40 percentage points. In summary, if Mr. Murray used new data and did not include the dividends per share historic growths, he would have calculated a value line growth of ~~6.07%~~ 4.91% rather than 2.76%. This is a huge difference. Reflecting this change in Mr. Murray's analysis would produce a DCF indicated return on equity of ~~11.09~~ 11.17%.

Disregard of CAPM/Risk-Premium

Q. Are there any other examples of the improper application of a mechanistic calculation process to reach a desired result?

A. Yes. The Staff witness in his analysis has made three separate calculations of the required return on equity, a DCF calculation, a CAPM calculation, and a Risk Premium calculation. The results of the DCF calculation ranged from 8.2% to 9.2%. The CAPM calculation result was 9.29%, and the Risk Premium calculation result was 10.41%.

There is a significant difference between the indication of the DCF model and the indication of the other two calculations. The Staff witness, however, made no comment or change as a consequence of this dramatic difference in results. It would appear that the Staff

witness had an end result in mind and was not in any way swayed by the facts related to the analysis.

Q. *Why do you say this?*

A. The Staff witness simply ignored the results of the other calculations and used the DCF as the sole basis for his recommendation. If the other analyses were of no value in the calculations or in the determination of the required return, they should not have been included in the testimony. Staff's failure to utilize these alternative analyses merely emphasizes that Mr. Murray's calculations are arbitrary, contrived and end-result oriented, as opposed to the best estimate of the return on equity.

Wrong Form of DCF Model

Q. How is the wrong form of the DCF model used in the Staff analysis?

A. On page 24, commencing at line 9 and carrying on for several pages, the DCF model is discussed in Mr. Murray's testimony. At line 17 of page 24, Mr. Murray states that he will use the continuous growth form of the DCF model. This continuous growth form assumes that the dividends are paid continuously rather than periodically. The use of this assumption causes the DCF result to be lower than it would have been had an appropriate form of the model been used.

Later in the testimony he uses the annual form of the model (P25L1-20), and finally in his calculations he uses a mix of data.

Q. Do you have a reference describing the different forms of the DCF model?

A. Yes, I do. In The Cost of Capital - Practitioner's Guide, by David C. Parcell, the various forms of the DCF model are shown commencing at page 8-7 and carrying through 8-17. I have included as Rebuttal Schedule JCD-2 those pages and the cover of the 1997 edition.

Problems with Comparable Group

Q. Are there any other problems with the data and calculations which appear on Mr. Murray's Schedules 15-1, 15-2 and 15-3?

A. Yes. I believe they demonstrate that Mr. Murray has not selected a comparable group.

Q. Please explain.

A. In order to develop an indication of an appropriate statistical standard by analyzing some data and using averages as the statistical standard, the data should have a central tendency. This means that the data should tend to cluster around a number, in this case, the average. Mr. Murray's data does not do that.

Q. Can you demonstrate that fact from the schedules?

A. Yes. Schedule 15-2 contains Mr. Murray's calculation of annual compound growth rates for the five-year period 1997 through 2002. In the dividend per share column where his calculations have been made, you will note that the percentages vary from zero in two cases, to 5.75% in a third case. The average of the series - - which is supposed to be

the central tendency - - is 1.69% but the standard deviation is greater than the average at 1.73%.

Moving to the next column to the right, earnings per share growth, the results of the calculations vary from a minus 9.23% to a plus 7.28% and average 1.72%. Clearly there is no central tendency among this group of numbers as the standard deviation is 5.23%, or about three times the average.

Q. What do you conclude from this review?

A. The averages that Mr. Murray uses are not statistics from which valid conclusions can be drawn.

Equity Ratio Adjustment

Q. What is the problem related to the equity ratio adjustment?

A. As risk increases, investor demand for return increases, all other things equal. The theory of economic finance says that investors are rational and that they are risk averse. As investors' levels of risk increases, the required return on equity increases.

It is also well established that shareholder risk is comprised of two separate risks, business risk and financial risk. Finally, it is absolutely non-controversial to say that as the equity ratio decreases, all other things equal, the amount of financial risk increases and, therefore, the requirement for return on equity also increases.

Q. How does this relate to Mr. Murray's testimony?

A. Mr. Murray did an analysis of a ``comparative group of companies which had an equity ratio of 49.68%'' (Murray Schedule 22). His contrived capital structure for MGE has an equity ratio of only 25.38%. This substantial difference in the equity ratio between the comparative group and the capital structure attributed to MGE by Mr. Murray requires a substantial adjustment in the return on equity to compensate for the much higher financial risk associated with the lower equity ratio of his proposed capital structure. In other words, it is necessary to increase the return on equity from the results of his analysis based on his comparative group to a new and higher level that reflects the difference in risk between the MGE capital structure he has calculated and the capital structure of his comparative group.

Q. What is the magnitude of that adjustment?

A. Mr. Murray's recommended return on equity mid-point is 9.02%. If that return were properly adjusted for the significant difference in leverage between his proposed capital structure and his comparative group, the correct return on equity would be 13.94%.

Q. Would increasing the return on equity from 9% to 13.94% result in an increase in the cost of capital because of the lower leverage?

A. No it would not. The cost of capital or rate of return would be exactly the same on a before tax basis for the 9.02% return on the 49.68% equity ratio and the 13.94%

return on the 25.38% equity ratio. In other words, the before tax cost of capital is precisely the same.

Q. Do you believe that this is in conformity with the stipulation and agreement approved by the Commission in connection with the acquisition of Panhandle Eastern?

A. I do.

Economic Environment

Q. What use did Mr. Murray make of the economic data which he discusses in his testimony?

A. None, although there is a great deal of his testimony directed to general economic circumstances.

Q. Please explain.

A. Most of Mr. Murray's testimony and schedules relate to economic environment. Clearly, the economic environment is presently at a transition point with the next likely move in the cycle being up as opposed to down from an interest rate and capital cost perspective. This suggests that during the period the rates authorized in this proceeding will be in effect, capital costs will be higher than those indicated by an historic analysis such as Mr. Murray's. Nonetheless, Mr. Murray has not considered this factor nor has he adjusted his result to account for the likely change in the environment from the older data that he used in making his analysis to the probable new environment.

Failure to Adjust DCF Appropriately

Q. Did Mr. Murray leave out of his DCF analysis any adjustments?

A. Yes. There are two customary adjustments that should have been included in his analysis. One of those adjustments is for preoffering pressure and flotation expense, and the second adjustment is to annualize the dividend to the first full year of ownership after the date of the analysis.

Q. What is the adjustment for preoffering pressure and flotation expense?

A. Common stock, when sold to the public, has expenses associated with the sale which are not collected from the customers. It is appropriate and customary that those expenses be included in a calculation of the cost of common equity. Failure to do so means that the company cannot, if common stock is issued, earn the authorized return.

In addition to the expenses associated with the sale, there is often preoffering pressure related to the sale of new securities that results in a decline in the stock price. This pressure causes the realization of proceeds by the company to be less than that which would have been generated by the stock price before the offering was announced and the volume or supply of securities increased.

Essentially, preoffering pressure is a supply/demand phenomena. As the supply of the common stock increases at any point in time, an equilibrium market price will respond to that increase in supply by declining.

Q. Is it appropriate to make these two adjustments to the cost of common equity for this case?

A. Yes it is, because Southern Union has indicated that there will be a sale of common stock in the relatively near future in order to maintain its bond rating.

Q. Will MGE customers benefit from this offering?

A. Yes, they will.

Q. How will MGE customers benefit from this offering?

A. They will benefit in two ways. First, the bond rating of Southern Union will be preserved and because lower bond ratings lead to higher costs of debt, a savings will be realized. Second, the proceeds of the sale represent new capital available to Southern Union, some of which may be used to add facilities to MGE's infrastructure to provide service to its customers.

Q. Will Panhandle Eastern customers benefit from this offering?

A. No.

Q. Why not?

A. Because Southern Union under the terms of the approval granted by MPSC to acquire the Panhandle Eastern corporation is prohibited from investing new capital in Panhandle either directly or indirectly.

Q. What is the adjustment for growth in dividends?

A. The DCF model anticipates that during the first year of ownership, investors will expect to receive not the historic dividend but rather the historic dividend plus any increases in dividend which they anticipate will take place during the

course of the year. Mr. Murray has not adjusted for that circumstance in his continuous DCF model and consequently has understated the cost of common equity.

Mr. Murray's Selection of Companies

Q. Mr. Dunn, are there any problems with Mr. Murray's selection criteria for his so-called comparable companies?

A. Yes. Mr. Murray's selection criteria are laid out on Schedule 13 to his testimony. The criteria are as follows:

1. Publicly traded stock.
2. Distribution revenues greater than 90% of total revenues.
3. Information printed in Value Line.
4. Positive dividend per share annualized compound growth rate 1992-2002.
5. No Missouri operations.
6. Ten years of data available.
7. Total capitalization less than Five Billion Dollars.

The majority of these criteria, as Mr. Murray has previously admitted, are not true risk criteria. For example, the fact that the information is printed in Value Line is not a risk criteria. Furthermore, the first criteria, the fact that the stock is publicly traded, is redundant with the third criteria, the Value Line appearance. Value Line only reports on publicly traded stocks.

In addition, it is clear that having ten years of data available is not a risk criteria, but rather a criteria that has to do with analyst convenience. Also, there is no special risk criteria that I am aware of related to the fact that a company may have Missouri operations. MGE is a Missouri company and, if the DCF model is being used, it is appropriate to use Missouri companies if they are in fact comparable. The DCF model will eliminate any possibility of circularity.

Comparison of Public Counsel and Staff End Results

Q. Is there an end result problem with Mr. Murray's analysis?

A. Yes.

Q. Please explain.

A. I compared the DCF result produced by Mr. Murray with the DCF result produced by the Public Counsel's witness as a result of his analysis. The differences between the two end results for the same companies are striking.

Q. What is unusual about the fact that there are differences in the end result of the two analyses?

A. Both parties, the Public Counsel witness and the Staff witness, are trying to develop an estimate of the return on common equity for MGE. Both used many of the same ``comparable'' companies and both used data specific to those companies. Both claimed to have the same objective, i.e. analyze a risk similar group of companies to estimate the return on equity for MGE.

Q. What would this similarity of objective and process lead you to believe?

A. If a risk similar group of companies were selected, it is reasonable to expect that the return on equity for each of the companies in the group would be very similar to the return on equity for all of the companies, i.e. that the return on equity for each member of the group would be very tightly clustered since they are all expected to be similar in risk. Also each company return should be close to the average. Moreover, it is reasonable to expect that since both analysts had the same objective and both used similar procedures, their cost of equity would be similar and for the same company should be virtually identical. For example, both calculated a DCF return on equity requirement for AGL Resources. Under the circumstances, it is reasonable to expect both indications would be similar.

Q. Was that the result of the two separate analyses?

A. No.

Q. Please explain.

A. For example, both witnesses analyzed AGL Resources and estimated by way of the DCF model the required return on common equity for the company. It is reasonable to expect that the analysis of the same company using the same data, using the same time period and the same methodology for the same target company would produce a reasonably similar result. In fact, there is 29% difference in the two results, with the Staff indicated return on equity at 8.03%

and the Public Counsel indicated return on common equity at 10.34%.

Q. Is the difference between the two results unique for AGL Resources?

A. No. All of the results are substantially different. In the attached Rebuttal Schedule JCD-3 I have compared the Staff DCF indicated return on common equity and the Public Counsel estimated equity using the DCF model, and calculated the percent difference between the two.

The reasonable correspondence or similarity in end result which one should expect is clearly not present. Since these differences are not explained or explainable, I believe both studies should be rejected. It is simply not reasonable for two analyst to make the same calculation with the same formula and the same data and produce radically different answers.

Data Problems in the Analysis

Q. What is the data problem that you refer to with respect to the Staff analysis?

A. Frankly, I am not sure if the data problem is one of the Staff's making or related to the Public Counsel's analysis.

Q. What is the nature of the problem?

A. An example of the problem is the equity ratio reported by the Staff witness for his comparative company group as compared to the equity ratio reported by the Public Counsel witness for its comparative group. Mr. Murray derives his

equity ratios on Schedule 22 to his testimony, whereas the Public Counsel witness derives his equity ratios on Schedules TA-2. In some cases, there is a significant difference between the equity ratio reported by the Staff witness and that reported by the Public Counsel witness.

Q. How substantial is the difference?

A. In the case of AGL Resources, for example, the difference amounts to almost 15 percentage points with the Staff witness reporting an equity ratio of 41.7% and the Public Counsel witness reporting an equity ratio of 27.0%.

Q. Have you compared all of the equity ratios reported by the Staff and the Public Counsel witnesses?

A. Yes I have. My Rebuttal Schedule JCD-4 compares the equity ratios from Mr. Murray's Schedule 22, with the equity ratios for the comparative companies from Mr. Allen's Schedule TA-2.

Q. Are all of the differences as extreme as the AGL equity ratio differences?

A. No. There are substantial differences such as AGL and South Jersey Resources and some reasonably close correspondence such as Northwest Natural where Staff witness Murray reports 51.5 and Public Counsel witness Allen reports 48.0.

Q. What do you conclude from these differences?

A. I would conclude that one or the other is incorrect or that the data reported are not the same.

Q. Did you attempt to verify the AGL Resources data?

A. I did, and I was unable to confirm the 27 percent equity ratio produced by the Public Counsel witness calculations. The results of my calculations were more similar to the calculations of the Staff witness.

Q. What was the basis for your calculation of the AGL equity ratio?

A. I used data taken from the AGL 10Q as of December 31, 2002, and December 31, 2003.

Q. Does short term debt explain the difference?

A. It may explain part of the difference but not all of the difference.

Q. What is the cumulative effect of these differences?

A. The Staff calculated the comparative group equity ratio at almost 50% and the Public Counsel calculated the comparative group capital structure at 40%.

Business Risk Adjustment

Q. Please explain how both the Public Counsel and the Staff witnesses failed to adjust their recommendations for the business risk of MGE.

A. We have established that the financial risk of MGE or Southern Union is much greater than the financial risk of the comparative companies used by the Staff and Public Counsel witnesses. The business risk is also different and, in my opinion, it is higher for MGE than it is for the Staff and Public Counsel comparative companies. Neither the Staff nor the Public Counsel witnesses adjusted for that

difference in business risk and, as a consequence, neither has made a recommendation which is relevant for either Southern Union or MGE. I believe that the Staff and the Public Counsel witnesses both have incomplete analyses and those analyses, since they lack this required risk adjustment, should not be used by the Commission in reaching a decision as to the appropriate rate of return in this case.

COMMENTS ON THE PUBLIC COUNSEL TESTIMONY

Q. Have you reviewed the Public Counsel rate of return testimony in this proceeding?

A. Yes, I have.

Q. Do you have any comments with respect to that testimony?

A. Yes, I do. There are four major comments which I believe require discussion. In addition to these four comments, the testimony does suffer from the problems previously enumerated with respect to both the Staff testimony filed in this proceeding in connection with the use of the consolidated capital structure and the mechanistic analysis associated with the calculation of an estimated return on equity requirement and failure to include appropriate DCF adjustments. Specifically, however, the testimony of the Public Counsel witness has the following deficiencies:

- It includes dividend per share growth in the calculation even though the way the data is presented,

the dividend per share growth is clearly an anomaly which makes the inclusion arbitrary.

- It calculates the growth rate for the primary thrust of its analysis based entirely on a retention rate calculation which is both circular and could lead to a death spiral in indicated returns on equity.
- There is an unexplained adjustment in the rate of growth for four companies in the analysis.
- The Public Counsel witness used an inappropriate source for selection of companies and capital structure comparison.

Dividend Growth Rate Included in Analysis

Q. How did the Public Counsel witness incorporate dividend per share growth in his analysis?

A. In determining the growth rate for the comparable companies, the Public Counsel witness established three cases, a low growth case, a midpoint and a high growth case. For the low growth case, the witness averaged together a series of growth rates which included three individual dividend per share growth calculations. These averaged rates are summarized on page 13 beginning at line 10 of his testimony. It is clear from the tabular array of historic growth rates, projected growth rates, and the averages of those rates that the dividend per share growth rate is totally anomalous, and completely different from the other growth rates. Its inclusion in the calculation is entirely arbitrary and

wrong. It clearly does nothing other than significantly reduce the average and offset the true earnings per share growth.

Q. How does this differ from the Staff approach?

A. The primary difference is the fact that this tabular array clearly, and beyond any doubt, cries out for explanation and yet the Public Counsel witness, because of the mechanistic approach of processing the data through a series of schedules, disregards the anomaly and rolls it through the calculation thus arbitrarily reducing the indicated return on equity. Both did in fact include dividend growth which is inappropriate. Incidentally, the reason the matter is so clear from the Public Counsel's schedules is that the Public Counsel did not include negatives in the average growth rate calculation.

Q. How much difference is there between the dividend per share growth rate and the earnings per share growth rate?

A. From the table on page 13, the average earnings per share growth rate can be calculated at 5.32%. The dividend per share growth per share growth rate can be calculated from the data on the table at 1.46%. The earnings per share growth rate is 3.5 times the dividend per share growth rate and that substantial difference to a true analysis would cause either rejection or real efforts to explain and understand the difference. Since the difference is as I have indicated a result of the industry changing its dividend payout policies, these low numbers should be

excluded from the calculation because they serve no purpose other than to arbitrarily reduce the growth rate in the DCF calculation, thus arbitrarily reducing the indicated required return on common equity.

Use of the Sustainable Growth Rate

Q. What is the sustainable growth rate method?

A. The sustainable growth rate method is based on the notion that future growth in a company's earnings is dependent upon retained earnings and the rate earned on those retained earnings. If the retained earnings in the calculation are usually stated as a percentage and if the retained earnings are relatively low in the calculation, then the future growth derived from the calculation is likewise relatively low. It is widely understood in the analysis of cost of capital that the use of the sustainable growth rate methodology is both circular and can lead to a death spiral if a company has a bad year and that bad year is rolled through a sustainable growth rate calculation two or three times.

Q. How important is the sustainable growth rate calculation to the Public Counsel's determination of the required return on common equity?

A. The Public Counsel witness produced three separate estimates of growth. For the first or low expected growth rate, the witness used the overall average of all calculated growth rates for the company, including the incorrect dividend per

share growth rate. This means that the dividend per share growth rate was included in the calculation of the low expected growth rate at least three times. Next, the Public Counsel witness came up with a mid-point growth rate by using the sustainable or retention growth rate method. Finally, he developed a high range growth rate where he used the sustainable growth rate result again unless there was some reason to use a different rate.

Unexplained Adjustments

Q. Did the Public Counsel witness use a different growth rate in any calculation?

A. Yes, he substituted his judgment for the calculations for four of the eight companies in his comparative group.

Q. What is the explanation for the substitution?

A. There is none given.

Use of an Inappropriate Sources

Q. What source did the Public Counsel witness use for selection of companies and equity rates?

A. The C.W. Turner Reports.

Q. Do you believe that this is an appropriate source?

A. No.

Q. Why?

A. First, it is not recognized as a data source for this type of analysis. Second, all of the necessary data for the analysis was available in Value Line. In fact, the Public Counsel witness used Value Line for most of his data.

Q. Was the information taken from the Turner Reports available from Value Line?

A. Yes.

Q. Does this conclude your testimony at this time?

A. Yes.

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.	))))	GR-2004-0209

AFFIDAVIT OF JOHN C. DUNN

STATE OF KANSAS)
) ss.
COUNTY OF JOHNSON)

John C. Dunn, 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.

JOHN C. DUNN

Subscribed and sworn to before me this 21st day of May 2004.

Peggy A. Ernst
Notary Public

My ~~Commission~~ Appointment Expires: April 21, 2008

NOTARY PUBLIC STATE OF KANSAS
PEGGY A. ERNST
My Appt. Exp. 4-21-08

Exhibit No.:	
Issues:	*Economic & Legal Rationale for Regulation; Historical Economic Conditions; Economic Projections; Business Operations of Aquila, Inc.; Capital Structure & Embedded Costs; Cost of Equity; DCF Model; and Rate of Return for MPS and L&P*
Witness:	*David Murray*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Direct Testimony*
Case Nos.:	*ER-2004-0034 and HR-2004-0024 (Consolidated)*
Date Testimony Prepared:	*December 9, 2003*

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

DIRECT TESTIMONY

OF

DAVID MURRAY

AQUILA, INC.
d/b/a AQUILA NETWORKS-MPS-ELECTRIC AND AQUILA NETWORKS-L&P-ELECTRIC AND STEAM

CASE NOS. ER-2004-0034 and HR-2004-0024
(Consolidated)

Jefferson City, Missouri
December 2003

capital ratios. The resulting capital structure consists of 35.31 percent common stock equity, .38 percent short-term debt and 64.31 percent long-term debt.

The amount of long-term debt outstanding on December 31, 2002 includes current maturities due within one year. The amount of long-term debt in the capital structure is the amount of long-term debt indicated on the December 31, 2002 Balance Sheet provided by Aquila in response to Staff Data Request MPSC-222.

As of December 31, 2002, Aquila had $300,963,000 of short-term debt outstanding with $283,431,000 of Construction Work In Progress (CWIP) outstanding. Therefore, I included a short-term debt balance of $17,532,000 in the capital structure, which is the difference between the amount of short-term debt outstanding and the CWIP outstanding. The difference between actual short-term debt outstanding and CWIP was used for the short-term debt balance because it is assumed that CWIP will eventually be funded by long-term debt.

Q. Why did you use Aquila's capital structure as of the test year, December 31, 2002?

A. MPS and L&P are divisions of Aquila. Because the debt and equity are generated from the parent company, Aquila, MPS and L&P rely on Aquila to finance their investment in MPS and L&P assets. Because MPS and L&P do not issue their own debt or equity, Aquila's actual capital structure as of December 31, 2002 was used for MPS and L&P.

In addition, Aquila's consolidated capital structure as of the test year is not extraordinary for a comparable electric utility. According to Schedule 20, Aquila's year-end

THE COST OF CAPITAL –

A PRACTITIONER'S GUIDE

BY

DAVID C. PARCELL

PREPARED FOR THE SOCIETY OF UTILITY
AND REGULATORY FINANCIAL ANALYSTS

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Author's Note: This manual has been prepared as an educational reference on cost of capital concepts. Its purpose is to describe a broad array of cost of capital models and techniques. No cost of equity model or other concept is recommended or emphasized, nor is any procedure for employing any model recommended. Furthermore, no opinions or preferences are expressed by either the author or the Society of Utility And Regulatory Financial Analysts.

Dividend Yield

Several functional forms of the DCF method have been developed. They differ mainly in the way the dividend yield is calculated.

Continuous Model

This method assumes dividends are paid continuously at the current dividend rate. Its form is:

$$(8.7)\ K = \frac{D_o}{P_o} + g$$

where: K = cost of equity

D_o = annual dividends per share in period o (i.e., current DPS)

P_o = current stock price

g = constant growth rate in DPS in future

Annual Compounding Model

This method differs from the continuous model since it recognizes that dividends are paid in a discrete manner rather than in a continuous manner and the expected dividend rate is utilized. This form is:

$$(8.8)\ K = \frac{D_1}{P_o} + g$$

where: K = cost of equity

D_1 = annual dividends per share in period 1

P_o = current stock price

g = constant growth rate in DPS in future

This is sometimes alternately be stated as:

$$(8.9)\ K = \frac{D_o(1+g)}{P_o} + g$$

or

$$(8.10)\ K = \frac{d_1+d_2+d_3(1+g)+d_4(1+g)}{P_o} + g$$

where: d_i = quarterly dividends (and the quarterly dividend is projected to increase by the value of g in the quarter when the utility normally increases the dividend rate - the third quarter in the example here).

It should also be noted that the interpretation of the D_1 term is not universally accepted as a full year. Gordon, for example, has maintained that D_1 is the next quarterly dividend on an annualized basis (Gordon, 1974, 81).

The interpretation of D_1, or $D_o(1+g)$, can take two alternative forms. First, D_1 can be viewed as the dividends paid <u>during</u> the next period (Morin, 1984; Brealey and Myers, 1984; Reilly, 1985).

Second, D_1 can be viewed as the dividend rate at the end of the next period (Linke and Zumwalt, 1984; Brigham, 1989; Bonbright, Danielsen and Kammerschen, 1988). Gordon summarized this issue by concluding "the (end of period D_1) poses problems of implementation that are not worth the effort in view of the fact that (during period D_1) and (end of period D_1) typically differ by a very small amount" (Gordon, 1974, 81).

Quarterly Compounding Model

The annual compounding model can be further modified to recognize quarterly dividend payments. This form is:

$$(8.11)\ K = \frac{d_1(1+K)^{.75} + d_2(1+K)^{.50} + d_3(1+K)^{.25} + d_4}{P_o} + g$$

where: d_1 = dividends per share paid in first quarter
d_2 = dividends per share paid in second quarter
d_3 = dividends per share paid in third quarter
d_4 = dividends per share paid in fourth quarter
P_o = current stock price
g = constant growth in DPS in future

Since "K" is in both sides of equation (8.11), it must be solved interactively.

Two alternative quarterly DCF models can be expressed as follows:

$$(8.12)\quad K = \frac{\sum_{q=1}^{4} D_{oq}(1+g)(1+K)^{1-(x+0.25(q-1))}}{P_o} + g$$

and

$$(8.13)\quad K = \left[\frac{D_o(1+g)^{.25}}{P_o} + (1+g)^{.25}\right]^4 - 1 = \left[1+\frac{D_o}{P_o}\right]^4 (1+g) - 1$$

Appendix 8.2 shows the derivation of these quarterly DCF formulas.

The quarterly DCF model can also be implemented by "compounding" the "g" factor, rather than the yield component. This will be described in the "Growth Rate" section of this chapter.

Semi-Annual Compounding Model

Another version of the DCF model represents a compromise between the annual compounding model and the continuous compounding model. This model is the semi-annual model and has also been referred to as the FERC model, since the Federal Energy Regulatory Commission utilized this version in its generic rate of return measure for electric utilities. This form is:

$$(8.14)\ K = \frac{D_o(1+0.5g)}{P_o} + g$$

where: D_o = dividends per share in period o (i.e., current DPS)

P_o = current stock price

g = constant growth rate in DPS in future

This DCF model recognizes the timing of dividend payments and dividend increases. If the investment is made between the time that a new dividend per share has been announced and the ex-dividend date, the expected yield will equal D_1/P_0 (i.e., continuous compounding model). If the investment is made after four quarterly dividends have been paid at the current rate and before a dividend increase is announced, the expected yield will equal D_1/P_0 or $D_0(1+G)/P_0$ (i.e., annual compounding model). There are actually five possible expected annual dividends to be received within one year depending on the timing of the investment. They are expressed in terms of D_0 as follows:

Number	Expected Annual Dividend
1	$4\ (D_0/4)$
2	$3\ (D_0/4) + [D_0(1-G)/4]$
3	$2\ (D_0/4) + 2\ [D_0(1+G)/4]$
4	$(D_0/4) + 3\ [D_0(1+G)/4]$
5	$4\ [D_0(1+G)/4]$

The sum of the five possible expected dividends is 10 ($D_0/4$) + 10 $[D_0(1+G)/4]$ or 2.5 $[D_0(2+G)]$. The average expected annual dividend is equal to the sum of all possible annual dividends divided by five. The average expected annual dividend is .5 $[D_0(2+G)]$ or $D_0(1+.5G)$.

This formula can also be justified when a DCF is performed on a group of comparison companies. At any point during a twelve-month period, some companies will increase dividends during the next few weeks, others at some time much later during the next year, and the remainder spread rather uniformly over the year. Therefore, for any one-year period, the investor can expect, on average, dividends to increase at the midpoint of the year. The implication is that the current dividend must be adjusted by one-half the annual growth rate to arrive at the expected dividend payment during the first year.

An alternative formulation of the semi-annual compounding model is:

$$(8.15)\quad K = \frac{D_0(1+n/4\ g)}{P_0} + g$$

where: D_0 = dividends per share in period 0

P_0 = current stock price

g = constant growth rate in DPS in future

n = number of quarters since last dividend increase (assuming annual increases in DPS take place during same quarter).

This model specifically recognizes the timing of dividends, as well as the timing of dividend increases.

Comparison of Yields in Various Models

Each of these four models produce somewhat different yield estimates. Table 8.1 shows a set of hypothetical input values which can be used to show the yields from each model.

Table 8.1
Input Values

Variable	Value
D_o	$0.80
$d_1 = d_2 = d_3 = d_4$	$0.20
P_o	$10.00
g	5.00%

Use of these values results in the following yields:

Continuous Compounding Model

$$(8.7)\ Yield = \frac{D_o}{P_o} = \frac{\$.80}{\$10.00} = 8.00\%$$

Annual Compounding Model

$$(8.9)\quad Yield = \frac{D_o(1+g)}{P_o} = \frac{\$0.80(1.05)}{\$10.00} = 8.40\%$$

Quarterly Compounding Model

$$(8.11)\quad Yield = \frac{d_1(1+K)^{.75}+d_2(1+K)^{.50}+d_3(1+K)^{.25}+d_4}{P_o} =$$

$$\frac{.20(1+K)^{.75}+.20(1+K)^{.50}+.20(1+K)^{.25}+.20}{10} = 8.67\%$$

Semi-Annual Compounding Model

$$(8.14)\ Yield = \frac{D_o(1+0.5g)}{P_o} = \frac{\$.80(1.025)}{\$10.00} = 8.20\%$$

Annual Versus Quarterly Models

A frequent DCF issue in rate proceedings concerns whether it is appropriate to utilize the annual or quarterly versions of the DCF model. Advocates of the quarterly model maintain that the existence of quarterly payments of dividends (and investor recognition of these payments) requires that the quarterly model be employed in order to properly match the "D" and "P" components of dividend yield (Cicchetti and Makholm, 1987; Linke and Zumwalt, 1984; 1987; Cargill and Wendel, 1994). Advocates of the annual

model maintain, on the other hand, that use of a quarterly model over-compensates investors because the ratemaking process (through the practice of monthly customer payments and use of average or year-end rate base) already recognizes this factor (Nyegaard, 1987; Rosenberg and Lafferty, 1988).

A third viewpoint is offered by Cicchetti, who maintains that the required return should be determined using a quarterly DCF model, but the effective rate of return should be adjusted to a nominal rate of return for use in determining revenue requirements (Cicchetti, 1989). This method is designed to recognize and balance the respective time value of money to investors (i.e., the quarterly receipt of dividends) and ratepayers (i.e., through the company's monthly accrual of earnings). A similar proposal is advocated by Siegel (1985) who maintains that quarterly DCF rates be determined and then discounted at the continuously compounded rate of return rather than the discrete, per period return.

Estimation of Yield Components

The previous analysis has identified three components which require input values. These are

D_0 - current annual dividends per share

D_1 - dividends per share in period 1

P_0 - current stock price.

The first term - D_0 - is straightforward and represents the current annualized level of dividends per share. For example, if the current dividend per share rate is $0.20, D_0 is $0.80 ($0.20 X 4, reflecting four quarterly payments).

The second term - D_1 - can be determined in two alternative ways. First, as shown in equation (8.9), D_1 can be estimated by increasing D_0 by the growth rate, or $D_1 = D_0(1+g)$. Second, analysts' forecasts of dividends per share for the next period can be utilized for D_1. Sources such as Value Line and Salomon Brothers provide annual dividends per share estimates for most public utilities.

The third term - P_0 - is technically the current (spot) price of a utility's stock. Two basic approaches are normally used to estimate P_0: use of the latest closing price, or (2) use of an average of recent prices. Advocates of the use of the latest spot price note that the spot price reflects all known information about the company and its stock, and thus that the spot price is most consistent with the efficient market hypothesis, which is a basic assumption of the DCF approach. Therefore, the latest closing price is theoretically the best one to use.

On the other hand, advocates of average prices note that stocks are subject to random fluctuations as buy or sell orders flow in, so the price at any moment can represent a temporary

disequilibrium. For this reason, they recommend the use of an average of recent prices.

Growth Rate

The growth rate component of the DCF equation - g - is usually the most crucial, and controversial, element in the use of this methodology. In estimating the appropriate growth rate, it is important to recognize two factors. First, the proper growth rate reflects the growth expectations of investors embodied in the price (i.e., yield component) of the company's stock. Analysts should recognize that individual investors have different expectations regarding growth and therefore no single indicator captures the growth expectations of all investors. Second, since the DCF model combines price (i.e., yield) and growth, the focus on growth expectations should target estimates of growth within a consistent time frame of the stock price contained in the yield component. Each of these factors relate to a "matching" of the yield and growth components of the DCF model.

An almost limitless array of techniques have been used in rate proceedings to estimate the constant growth rate component. Since the dividend discount model is technically concerned with growth in dividends, many methods are concerned directly with dividend growth. On the other hand, other methods examine factors other than dividend growth to estimate g. The objective of each of these

Rebuttal Schedule JCD-3

COMPARISON
STAFF DCF RESULT WITH
PUBLIC COUNSEL DCF RESULT

Company	Staff DCF Cost of Equity[1]	Public Counsel DCF Cost of Equity[2]	Percent Difference
AGL Resources	8.03%	10.34%	28.7%
Cascade Natural Gas	7.70	8.76	13.8
New Jersey Resources	8.94		
Northwest Natural Gas	7.80	8.64	10.8
Peoples Energy Corp.	8.80	8.09	8.1
Piedmont Natural Gas	9.89		
South Jersey Industries	8.90	9.67	8.7
WGL Holdings	6.70	8.06	20.3

1 Murry Exhibit Schedule 18.

2 Allen Exhibit Schedule TA8.

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COMPARISON
STAFF REPORTED COMMON EQUITY RATION WITH
PUBLIC COUNSEL REPORTED COMMON EQUITY RATIO

Company	Staff Equity Ratio[3]	Public Counsel Equity Ratio[4]
AGL Resources	41.7%	27.0%
Cascade Natural Gas	40.9	40.0
New Jersey Resources	49.4	
Northwest Natural Gas	51.5	48.0
Peoples Energy Corp.	59.3	47.0
Piedmont Natural Gas	56.1	
South Jersey Industries	46.1	37.0
WGL Holdings	52.4	49.0

3 Murry Exhibit Schedule 22.

4 Allen Exhibit Schedule TA2.