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Witness:	*David Murray*
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

SURREBUTTAL TESTIMONY

OF

DAVID MURRAY

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

Jefferson City, Missouri
December 2006

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 DAVID MURRAY

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

David Murray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 27 pages to be presented in the above case; that the answers in the foregoing Surrebuttal 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.

David Murray

Subscribed and sworn to before me this 6th day of December 2006

Notary Public

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

ASHLEY M. HARRISON
My Commission Expires
August 31, 2010
Cole County
Commission #06899979

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Q. Please state your name.

A. My name is David Murray.

Q. Are you the same David Murray who filed direct and rebuttal testimony in this proceeding for the Staff of the Missouri Public Service Commission (Staff)?

A. Yes, I am.

Q. In your direct testimony, did you provide your expert opinion on what you considered to be a fair and reasonable rate of return on the Missouri jurisdictional natural gas utility rate base for Southern Union Company's (Southern Union) Missouri Gas Energy (MGE) division?

A. Yes, I did.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimonies of MGE witness Frank J. Hanley and the Office of Public Counsel (OPC) witness Russell W. Trippensee. Mr. Hanley sponsored rate-of-return (ROR) direct and rebuttal testimony in this case. Mr. Trippensee sponsored ROR rebuttal testimony in this case.

EXECUTIVE SUMMARY

Q. Please provide an executive summary of your surrebuttal testimony.

A. Mr. Hanley claims that because Southern Union is no longer predominately a natural gas distribution company its capital structure is not meaningful for estimating MGE's ROR. He also states that Southern Union's consolidated capital structure does not represent how natural gas distribution operations "should be" financed. This position might be credible if Southern Union had suddenly changed its strategy for capitalizing its operations when it started to transition into a diversified natural gas company. However, Southern Union current capitalization strategy appears to be consistent with its past capitalization strategy. One would expect that Southern Union will need to deleverage its capital structure as it incurs additional business risk in its midstream natural gas business.

Southern Union's consolidated capital structure is still the appropriate ratemaking capital structure for MGE. It represents how MGE has been and continues to be capitalized. Mr. Hanley has not provided any evidence to the contrary. Therefore, the Commission should adopt Southern Union's consolidated capital for ratemaking purposes as it did in MGE's last rate case, Case No. GR-2004-0209.

Mr. Hanley attacks my reliance on the DCF model for my recommendation. He claims that the DCF model currently understates natural gas distribution utility companies' cost of common equity because market-to-book ratios are currently significantly above one. The Commission should not accept Mr. Hanley's proposition that DCF results should be adjusted upward due to higher market-to-book ratio levels because this would only act to support higher valuation levels of natural gas utility stocks.

Mr. Hanley also claims that my use of geometric averages for risk premium estimation should be dismissed. Because investors buy and hold utility stocks, the geometric average makes the most intuitive sense and is supported by credible academic literature.

Mr. Hanley also believes that MGE's expected returns on pension assets are not reasonable to use for testing the reasonableness of ROE recommendations. He claims they are irrelevant because these expected returns are too short-term oriented and they are also based on portfolio theory. Expected returns on pension plan assets are not based on short-term expected returns. Regardless, I will show that Mr. Hanley uses short-term market return estimates and portfolio related models in his own analysis to estimate his cost of common equity.

I also address Mr. Trippensee's recommendation of a reduced ROE for Staff's recommended rate design. Mr. Trippensee suggests that MGE's ROE should be based on a risk premium over MGE's embedded cost of long-term debt. It is inappropriate to estimate a current cost of common equity based on historical costs of debt. Mr. Trippensee did not recognize that my comparable companies have many forms of rate designs that are very similar to what Staff has recommended in this case. The reduced risk from these rate designs is reflected in the price investors are willing to pay for the comparable companies' stock prices. Therefore, it is inappropriate to make any additional adjustments to my recommendation. It is important to focus on aggregate risk measurements, such as those reflected in credit ratings, rather than carving out individual risk characteristics.

RESPONSE TO MR. HANLEY'S REBUTTAL TESTIMONY

Q. On page 6, lines 7 through 10, of Mr. Hanley's rebuttal testimony, Mr. Hanley suggests that investors now view Southern Union as a midstream gas company rather than a natural gas distribution company. Therefore, the use of Southern Union's capital structure is no longer appropriate for estimating MGE's ROR. Do you agree?

A. No. While I agree that Southern Union's operations are no longer focused primarily on natural gas distribution, I do not believe that it is inappropriate to use Southern Union's capital structure for estimating MGE's ROR.

Q. Why is it still appropriate to use Southern Union's actual capital structure for estimating MGE's ROR?

A. Because Southern Union is entering the gathering and processing business, this increases Southern Union's business risk profile. As a company increases its business risk profile, it must offset this increased business risk by lowering its financial risk in order to maintain the same overall risk profile. This is documented in Standard & Poor's (S&P) ratings methodology in which it assigns business risk profiles (1 to 10 with one being the lowest business risk and ten being the highest business risk) to utility companies so it can determine how much financial risk a company may incur for a given credit rating.

Because Southern Union has increased its business risk, S&P may require Southern Union to reduce its financial risk by reducing the amount of leverage in its capital structure. Consequently, the use of Southern Union's capital structure to estimate MGE's ROR is actually conservative at this time because Southern Union would be able to use additional leverage if it was still predominately a natural gas distribution company.

Q. Did S&P recently downgrade Southern Union's credit rating because of its increased business risk and continued significant use of debt to finance its operations?

A. Yes. S&P downgraded Southern Union from BBB to BBB- on November 20, 2006, due to S&P's assessment of Southern Union's "movement toward riskier business segments, coupled with an aggressive financial policy that liberally uses debt leverage." Please see Schedule 1 for this full report.

Q. Did you illustrate in your rebuttal testimony that Southern Union has always been a highly leveraged company even before it entered the natural gas gathering and processing business?

A. Yes. On page 5, line 4 through page 6, line 7, I discussed Southern Union's average common equity ratios since 1994. For the most recent five years Southern Union's average annual common equity ratio was 30.86 percent. However, the most recent five years included three years in which Southern Union commenced its transition into a diversified natural gas company. Therefore, I also reviewed Southern Union's average annual common equity ratios during the period it was predominately a natural gas distribution company and it owned MGE. The average annual common equity ratio for the period 1994 through 2002 was only 29.36 percent.

Q. What common equity ratio did you use to estimate MGE's ROR?

A. 36.31 percent. Consequently, my capital structure recommendation is actually less leveraged than Southern Union's historical capital structures. Southern Union has demonstrated that it prefers to use more leverage than its peers and I have no reason to believe that Southern Union would have changed its financial strategy if it had continued its course as a natural gas distribution company.

Q. On page 8, lines 6 through 8, of Mr. Hanley's rebuttal testimony, Mr. Hanley believes that because investors no longer look at Southern Union as a natural gas distribution company, they will no longer look at Southern Union as a "meaningful indicator of how gas distribution assets are, or should be, financed." Is this a valid reason to discard the use of Southern Union's consolidated capital structure for estimating MGE's ROR?

A. No. Southern Union's financial strategy has been very clear based on how it has chosen to capitalize itself in the past. I do not believe that investors would ignore the past and suddenly pretend that MGE "should be" capitalized the same way as its peers. If this is the way the MGE "should be" capitalized, then Southern Union has not capitalized its assets appropriately during the period it has owned MGE.

Q. On page 11, line 14 through page 12, line 21, of his rebuttal testimony, Mr. Hanley claims that your recommended cost of common equity is a "mismatch" when applied to Southern Union's more leveraged capital structure. Do you agree?

A. No. As I explained on page 37, lines 9 through 23, of my direct testimony, I made a 30 basis point upward adjustment to my proxy group cost of common equity estimate to account for Southern Union's lower credit rating, which considers Southern Union's more leveraged capital structure.

Q. On page 12, line 23 through page 13, line 10 of his rebuttal testimony, Mr. Hanley claims that including the amount of debt from the Panhandle Energy without including the carrying costs of this debt is "blatantly incorrect." How do you respond?

A. As I indicated on page 20, lines 17 through 23, of my direct testimony, the embedded cost of long-term debt I included in my ROR recommendation is based on the Commission's decision in the last MGE rate case (Case No. GR-2004-0209) to exclude the cost of the Panhandle Energy debt, but to include the amount for the purposes of the capital structure.

I actually agree with Mr. Hanley that this is a mismatch of capital costs and capital structure weights. In the last MGE rate case I argued against the approach of not including Panhandle Energy costs in the cost of debt while at the same time including this debt in the

capital structure recommendation (Case No. GR-2004-0209, Murray Rebuttal, p.41, l.10 – p. 44, l. 5; Murray Surrebuttal, p.50, ll. 1-18).

Q. Considering the testimony you sponsored in the last rate case in support of including all Panhandle Energy debt issuances in the overall cost of debt recommendation, why didn't you do the same in this case?

A. The facts and circumstances haven't changed from the last rate case and I do not have any new evidence to provide to the Commission to convince it to include the Panhandle Energy debt in the cost of debt. Consequently, I chose to calculate the cost of debt consistent with the Commission's decision in the last rate case.

Q. What would be the effect on your cost of long-term debt recommendation if you included the Panhandle Energy debt?

A. It would reduce the cost of debt considerably. According to Southern Union's response to Staff Data Request No. 0065.1, the consolidated cost of long-term debt would have been 6.039 percent.

Q. Page 13, line 13, through page 14, line 20, of Mr. Hanley's rebuttal testimony, he criticizes your preference of making your recommendation based on your analysis using the DCF model. How do you respond?

A. First, I think it is important to reiterate that I did use the CAPM to verify the reasonableness of my recommendation derived from my analysis using the DCF model. My CAPM results based on geometric averages of realized risk premiums from 1926 through 2005 support my recommendation in this case.

Second, as I indicated in my direct testimony, I believe that the DCF model is the most reliable model for estimating a utility company's cost of common equity. The DCF model, as

it is used in utility regulatory proceedings, was derived by Myron J. Gordon and introduced for cost-of-common-equity determinations in 1962.[1] The original use of this model was for purposes of valuing cash flows to determine the inherent value of an asset, security and/or enterprise. However, in order to value these cash flows, investors had to determine a discount rate they believed was appropriate for the risk associated with the cash flows. Considering that when the DCF model is used to estimate the discount rate; i.e. cost of common equity, in utility rate case proceedings, if the inputs are reasonable, then the estimated cost of common equity will represent the average of all discount rates (whether determined by the CAPM or some other model) investors have used to determine a fair price for the stock. Therefore, a proper application of the DCF indirectly incorporates investors' use of all models for discount rate estimation.

Q. On page 15, of his rebuttal testimony, Mr. Hanley compared authorized ROEs for natural gas distribution companies to Moody's A-rated public utility bond yields. Do you agree with this type of analysis?

A. No. Mr. Hanley claims that the average difference between authorized ROEs and A-rated utility bond yields measures the equity risk premium. This would only be true if one were to accept that that all authorized ROEs reflect utility companies' cost of common equity. I don't believe that recent average authorized ROEs reflect the utility industries' cost of common equity or else I wouldn't make recommendations much lower than these authorized ROEs. Therefore, I do not believe that this is a viable cost of common equity estimation tool. However, I do recognize that the Commission has recently relied on authorized ROEs to at least support its decision in two recent rate cases. Consequently, I

[1] Frank K. Reilly and Keith C. Brown, *Investment Analysis and Portfolio Management*, Fifth Edition, The Dryden Press, 1997, p. 438.

reviewed Mr. Hanley's analysis for any other philosophical differences I may have with other aspects of his analysis.

According to Mr. Hanley's calculations, the average spread between litigated authorized ROEs and Moody's A-rated public utility bond yields was 4.71 percent. Mr. Hanley added this spread to a prospective yield for A-rated utility bonds. If the Commission were to accept Mr. Hanley's "Reality Check," then the Commission should use the current yield on A-rated utility bonds, which was 5.98 percent for October 2006. This would result in an indicated common equity cost rate of 10.69 percent (5.98 + 4.71). Again, I do not believe that this is an appropriate methodology to estimate the cost of common equity.

Q. On page 16, line 1 through page 18, line 2m of his rebuttal testimony, Mr. Hanley discusses why he believes the DCF model understates the cost of common equity when market-to-book ratios are significantly greater than one. Mr. Hanley cites Roger A. Morin's book, *Regulatory Finance – Utilities' Cost of Capital*, 1994, to support his position. Are you aware of any citations from the same book that contradict the citation provided by Mr. Hanley?

A. Yes. Page 123 of Dr. Morin's book states the following:

> When a utility's stock price is below book value or when regulatory lag is present, it is reasonable to assume that investors expect future increases in the utility's market-to-book ratio through upward adjustments in the allowed rate of return. This is because proper regulation requires a market-to-book ratio of at least 1. The expected increase in market-to-book ratio would result in the rate of price appreciation that exceeds the growth in earnings, contrary to the standard DCF model's assumptions that firm's earnings per share grow at a constant rate forever and/or that the firm's price-to-earnings ratio is constant. Application of the standard DCF model would result in a downward-biased estimate of the cost of equity to a public utility whose current market-to-book ratio is less than 1 and that is expected to converge toward 1 by investors. It is not reasonable to postulate a growth in earnings that exceeds growth in book value forever, because

> earnings would eventually exceed book value on which such earnings are based. That is to say, it is unreasonable to expect a continued increase in earned ROE forever. It is possible, however, that investors expect a transitory change in earned returns, say over the next 5 years. If investors do expect a transitory change in earned return, projection of a declining or rising earned ROE is inconsistent with the use of a single growth rate or Standard DCF model.

While the above citation indicates that the DCF model will result in an understatement of the cost of common equity to the company when market-to-book ratios are below one, the citation provided in Mr. Hanley's rebuttal testimony indicates that the DCF model would understate the cost of common equity if market-to-book ratios are greater than one. Therefore, the results are understated in both scenarios (market-to-book ratios above and below one), but apparently for different reasons. The key concept to grasp is whether it is appropriate for investors to continue to expect a higher rate of return when market-to-book ratios are above one in order for the currently higher market-to-book ratio to be sustained. If, as Dr. Morin states, it is appropriate for investors to expect regulators to authorize higher allowed rates of return when the market-to-book ratio is less than one, then it would only be natural that investors would expect that regulators will recommend lower rates of return when market-to-book ratios are above one.

Q. In your rebuttal testimony you provided citations from testimony that Mr. Hanley sponsored in Kentucky on August 4, 1980 for Kentucky Power Company in Case No. 7900 before the Energy Regulatory Commission of Kentucky. Does Mr. Hanley's testimony from 1980 support the theory that regulators should make upward adjustments when market-to-book ratios are above or below one?

A. Mr. Hanley's testimony in 1980 supported the theory that because market-to-book ratios were below one, utility companies were not earning their cost of common equity. If investors expect a convergence of market-to-book ratios towards unity because utility

companies are not earning their cost of common equity, then the earnings growth rates would understate the expected capital market appreciation of the stock, and therefore, the DCF growth rate would need to be adjusted upwards. If the converse were true and market-to-book ratios are significantly greater than one, which is currently the case for the natural gas utility industry, then investors would expect that market-to-book ratios would again converge towards unity. In this case, the earnings growth rates would overstate the expected capital market appreciation of the stock, and therefore, the DCF growth rate would need to be adjusted downwards.

Q. Are you suggesting that your DCF results should be adjusted downward because they overestimate the cost of common equity?

A. No. I am not recommending, nor would I recommend, that my DCF results should be adjusted based on current market-to-book ratios.

Q. Why not?

A. This Commission, to my knowledge, has never taken a position that it should base its recommendations on any specific market-to-book ratio or to maintain a particular market-to-book ratio. In fact Dr. Morin indicates on page 247 of his book that ". . . regulators should largely remain unconcerned with such ratios because they are determined by exogenous market forces and are outside the direct control of regulators. M/B ratios are largely the end result of the regulatory process itself rather than its starting point." Therefore, I do not feel it is appropriate to make adjustments to my DCF analysis because of the level of current market-to-book ratios.

Q. On page 18, line 14, through page 20, line 17, of Mr. Hanley's rebuttal testimony, he discussed why he believes that geometric means are inappropriate to use when estimating the equity risk premium. How do you respond?

A. I addressed this issue in my rebuttal testimony on page 21, line 2, through page 23, line 8, but I will provide my explanation again as to why I believe geometric means are more appropriate when investing in long-term investments.

Suppose that an investor makes a $1 stock investment over a three-year period. If an investor pays $1 for a stock in year 1 and in year 2 the stock increases to $1.50, then the investor would have a 50 percent growth rate. In year three the price of the stock decreases by 50 percent to $.75. If an investor performed a simple arithmetic average of these two returns, then he would think that he received 0 percent [(50 percent + -50 percent)/2] growth in his investment over the three-year period. However, in reality the investor actually had a 25 percent decline in his investment over this three-year period. This is why using the arithmetic mean to measure risk premiums is questionable.

There is also plenty of support from financial literature for the use of geometric means when estimating the equity risk premium. The first is *Investment Analysis & Portfolio Management*, seventh edition, 2003, written by Frank K. Reilly and Keith C. Brown. Reilly and Brown stated the following:

> The geometric mean is appropriate for long-run asset class comparisons, whereas the arithmetic mean is what you would use to estimate the premium for a given year (e.g. the *expected* performance next year).

The second textbook is *Investment Valuation*, 1996, written by Aswath Damodaran. Dr. Damodaran stated the following in his textbook:

> The geometric mean generally yields lower premium estimates than the arithmetic mean. In the context of valuation, where cash flows over a

> long time horizon are discounted back to the present, the geometric mean provides a better estimate of the risk premium. Thus, the premium of 5.50% (the geometric mean of the premium over Treasury bonds) is used throughout this book for calculating expected returns.

The third textbook is *Analysis of Equity Investments: Valuation*, 2002, written by John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey. The text states the following:

> In taking a historical approach, we face a choice between using arithmetic mean return (typically, the average of one-year rates of return) and using the geometric mean return (the compound rate of growth of the index over the study period). The arithmetic mean more accurately measures average one-period returns; the geometric mean more accurately measures multiperiod growth. The dilemma is that the CAPM (as well as the APT) is a single-period model, suggesting the use of the arithmetic mean; but common stock investment often has a long time horizon, and valuation involves discounting cash flows over many periods, suggesting the use of geometric mean…
>
> …Although the debate is inconclusive, this book uses geometric means, not only for the previously given reasons but also because geometric means produce estimates of the equity risk premium that are more consistent with the predictions of economic theory.

Q. On page 21, lines 1 through 18, of his rebuttal testimony, Mr. Hanley criticizes your use of a short-term period to estimated the equity risk premium based on the historical geometric average spread in realized returns between stocks and risk-free securities. How do you respond?

A. I did not give the short-term risk premium CAPM results any weight in arriving at my recommended cost of common equity or even in testing the reasonableness of my recommendation. I stated the following in my direct testimony:

> The short-term geometric average risk premium CAPM is not currently a good test of reasonableness for the DCF model, but it is interesting to note the recent smaller spread between earned returns on equity versus earned returns on long-term treasury bonds.

Q. On page 21, line 20, through page 22, line 3, of his rebuttal testimony, Mr. Hanley claims that because the individuals you cited in your direct testimony are commenting on the current capital market and economic environment, these opinions are not useful because a long range view should be taken. Do you agree that opinions on the current capital and economic market should be ignored?

A. No. It is very important to consider the current capital market and economic environment. Additionally, Mr. Hanley did not provide any articles that refute the opinions of the individuals that I cited in my direct testimony. The lower cost of capital environment has resulted in most Missouri utility companies achieving lower embedded costs of debt (Staff notes that Southern Union's current embedded cost of long-term debt is higher than any other Missouri utility company that has filed a major rate case recently). This lower cost of capital environment is also being experienced with common equity capital and it is appropriate to recognize this lower cost in the authorized ROE.

Q. On page 22, line 5, through page 23, line 4, of his rebuttal testimony, Mr. Hanley claims that you should have used the empirical CAPM. Do all financial texts suggest that it is appropriate to used the empirical CAPM?

A. No. The textbook by Aswath Damodaran, *INVESTMENT VALUATION: Tools and Techniques for Determining the Value of Any Asset*, 1996, does not recommend any adjustment to beta for the CAPM. This textbook follows the traditional execution of the CAPM throughout the text.

Q. On page 24, line 1 through page 25, line 6, of his rebuttal testimony, Mr. Hanley explains why he doesn't believe it is appropriate to compare recommended returns on common equity in utility rate case proceedings to those of expectations of returns

on pension fund assets. Do you agree that this information is not useful in testing the reasonableness of recommended ROEs in utility rate case proceedings?

A. No. Many of the models used by ROR witnesses in rate case proceedings are based on expected returns on the stock market as it relates to expected returns on either U.S. Treasury bonds or some other fixed-income security. The models that incorporate this information are usually the risk premium model (RPM) and the CAPM.

Q. What models did Mr. Hanley use to incorporate market return expectations?

A. His application of the CAPM and the RPM incorporated market return expectations.

Q. Mr. Hanley claims that because the pension fund investment horizon is for a limited time, it is not reasonable to compare these expected returns to returns on common equity recommended in rate cases. Do you agree that the pension fund investment horizon is for a limited time?

A. No. This is even recognized on page F-41 of Southern Union's 2005 Annual Report. The Company specifically states that it uses "a building block approach in determining the expected **long-term rate of return** on the Plans' assets."

Q. Even if one were to accept that the pension fund investment horizon is for a limited time, did Mr. Hanley use short-term market appreciation estimates in his application of the CAPM analysis?

A. Yes. Mr. Hanley's application of the CAPM used Value Line's 3-5 year estimate of total market appreciation plus the market's average dividend yield for a forecasted total annual return of 9.99 percent. Therefore, Mr. Hanley himself has used shorter-term expected returns in his analysis.

Q. Mr. Hanley also claims that it is inappropriate to compare pension returns to recommended ROEs because of the "risk-reducing benefits of portfolio theory as opposed to the greater risk associated with investment in a single asset, which in this case would be MGE's jurisdictional rate base." Did Mr. Hanley's analysis incorporate a model that specifically recognizes that investors may diversify their investments in order to eliminate company-specific (unsystematic) risks?

A. Yes. Mr. Hanley used the CAPM, which is based on modern portfolio theory that assumes that unsystematic risk can be eliminated through diversification and the only risk faced by the investor is the systematic (market) risk. The systematic risk is measured by determining the covariance of the asset with the market portfolio, which is referred to as the beta of the security. Consequently, Mr. Hanley's own analysis is based on modern portfolio theory, which assumes risk-reducing benefits of portfolio theory.

Q. On page 25, line 8 through page 26, line 5, of his rebuttal testimony, Mr. Hanley indicates that it is inappropriate to compare overall ROR authorizations to ROR recommendations in this case. Do you believe that this information should be disregarded?

A. No, if the Commission continues to review authorized ROEs to judge the reasonableness of the ROE it authorizes for its own utilities, then I believe that the Commission should also be aware of the overall authorized ROR in such cases. These overall authorized RORs provide context for the authorized ROEs. The capital structures that underlie the authorized ROE will vary for each company. If certain capital structures are more leveraged, then this more leveraged capital structure may also be accompanied by a higher embedded cost of debt. These more leveraged capital structures may also be accompanied by a higher cost of common equity. If a company is authorized a lower ROE,

but it has a higher embedded cost of debt, then the overall ROR may be more comparable to average authorized RORs.

RESPONSE TO MR. TRIPPENSEE'S REBUTTAL TESTIMONY

Q. On page 3, lines 1 through 3, of his rebuttal testimony, Mr. Trippensee claims that you should have made an explicit adjustment to your ROE recommendation to consider Staff's rate design recommendation in this case. Do you think an explicit adjustment is needed to consider Staff's rate design proposal?

A. No. In my direct testimony I chose comparable companies based on the criteria shown on page 22, line 17, through page 23, line 5. The most important criterion was to select companies with comparable business risk. I chose to do this by selecting companies that are predominately natural gas distribution companies because MGE is a natural gas distribution company. I also ensured that the companies in my comparable group had not encountered any financial difficulties that would have caused them to have a credit rating below investment grade.

After analyzing my proxy group's cost of common equity, I then decided to make an upward adjustment of 30 basis points to my proxy group's cost of common equity to consider the fact that Southern Union's credit rating was a full category below that of the average for my comparable group.

Q. Why did you make an adjustment based on your comparison of Southern Union's credit rating compared to the average credit rating of your comparable group?

A. I made this adjustment because the credit rating assigned to a utility company is based on the credit rating agency's (in this case S&P's) evaluation of all of the risks of the company. This includes both business risk and financial risk. I believe it is appropriate to

base adjustments on differences in credit ratings because credit ratings consider risks on an aggregate basis rather than making adjustments for individual risk factors. For example, a natural gas distribution company may be more exposed to a business risk such as local economic risks, but it offsets this risk by reducing its financial risk. It is the aggregate risk that matters in cost of capital estimation.

Q. Do you know if any of your comparable companies have rate designs that mitigate risk due to changes in the weather?

A. Yes. All of my companies have some type of rate design that reduces exposure to weather and/or conservation risk. Based on comments in some of these companies' SEC Filings and Annual Reports, I believe that in some cases, the risk due to weather and conservation is virtually eliminated. One company, AGL Resources (AGL), even has a straight-fixed variable rate design, which is the type of rate design proposed by Staff in this case.

AGL's largest natural gas distribution operation, Atlanta Gas Light Company, has a straight fixed-variable rate design, which is the same rate design proposed by Staff in this case. Atlanta Gas Light Company's annual distribution volume comprises 65.72 percent of AGL's natural gas distribution volumes. 31.44 percent of AGL's other natural gas distribution operations (Elizabethtown Gas, Virginia Natural Gas, and Chattanooga Gas) have a weather normalization rate design. The remaining distribution operations (Florida City Gas and Elkton Gas) do not have any type of weather mitigation rate design. Atlanta Gas Light Company was authorized (June 2005) a 10.90 percent ROE on 47.90 percent common equity and an 8.53 percent overall ROR. Elizabethtown Gas was authorized (November 2002) a 10.00 percent ROE on 53.00 percent common equity and a 7.95 percent overall ROR.

Virginia Natural Gas Company was authorized (October 1996) a 10.90 percent ROE on 52.40 percent common equity and a 9.24 percent overall ROR. Chattanooga Gas was authorized (October 2004) a 10.20 percent ROE on 35.50 percent common equity and a 7.43 percent overall ROR. Florida City Gas was authorized (February 2004) a 11.25 percent ROE on 36.80 percent common equity and a 7.35 percent overall ROR.[2]

New Jersey Resources' major natural gas distribution operation, New Jersey Natural Gas (NJNG), currently operates under a Conservation Incentive Program (CIP) rate design (effective October 1, 2006). The CIP rate design replaced NJNG's previous weather-normalization clause (WNC) rate design. The CIP "decouples the link between customer usage [conservation] and NJNG's utility gross margin, allowing NJNG to encourage its customers to conserve energy." The CIP is operating under a three year pilot. During the three-year term of the pilot "the existing WNC would be suspended and replaced with the CIP tracking mechanism, which addresses utility gross margin variations related to both weather and customer usage." Additionally, during the three year pilot, if NJNG does not file for a rate review with the New Jersey Board of Public Utilities (BPU) within two years the ROE for the earnings test declines from 10.50 percent to 10.25 percent. The CIP became effective on October 1, 2006.[3]

South Jersey Industries' (SJI) natural gas distribution subsidiary, South Jersey Gas Company (SJG) implemented a CIP plan on October 1, 2006, which is very similar to that implemented by NJNG. The CIP was approved as a three-year pilot program and replaced SJG's Temperature Adjustment Clause (TAC), which was designed to mitigate the effect of variations in heating season temperatures from historical norms. SJG's CIP tracking

[2] AGL Resources, Inc. 2005 Annual Report.
[3] New Jersey Resources 2005 Annual Report.

mechanism "addresses margin variations related to both weather and customer usage." SJG was authorized an ROE of 10.00 percent on July 7, 2004 and an overall ROR of 7.97 percent.[4]

Piedmont Natural Gas (Piedmont) currently operates under a Customer Utilization Tracker (CUT), which replaced a previous weather normalization adjustment (WNA) mechanism in North Carolina. Piedmont still operated under a WNA in its South Carolina and Tennessee service territories. The CUT provides for the recovery of Piedmont's "approved margin per customer independent of **weather or other usage and consumption patterns** for residential and commercial customers" (emphasis added). It should be noted that the North Carolina Office of the Attorney General had appealed the North Carolina Utilities Commission's (NCUC) authorization and approval of CUT, but withdrew its appeals after filing a settlement with the NCUC. In the settlement, in each of the three years the CUT is effective, Piedmont agreed to share the first $3 million of CUT dollars that are non-weather related.[5]

Northwest Natural Gas (Northwest) has natural gas distribution operations in two states, Oregon and Washington. Oregon allows a weather normalization mechanism and a conservation tariff for both residential and commercial customers. Customers in Oregon are allowed to opt out of the weather normalization adjustment. Nine percent of Oregon customers have opted to do so. Northwest's Washington operations do not have a weather normalization mechanism, but Washington only makes up 10 percent of Northwest's customer base. Therefore, less than 20 percent of Northwest's customers aren't covered by a

[4] South Jersey Industries September 30, 2006 SEC Form 10-Q.
[5] Piedmont Natural Gas July 31, 2006 SEC Form 10-

weather normalization adjustment.[6] In Northwest's Letter to Shareholders, Northwest's President and CEO, Mark S. Dodson stated the following:

> Our weather-normalization mechanism, called WARM, also added significant value to customers and shareholders in 2005. Customers saw less volatility in their wintertime bills and shareholders were protected from warmer-than-average weather. Together, WARM and the Conservation Tariff allow NW Natural to overcome two of the greatest challenges facing gas utilities today: earnings and cash flow uncertainty from fluctuating weather and declining per capita gas consumption. In 2005, the two mechanisms combined to add $1.6 million to margin.[7]

Northwest's most recent general rate case for Oregon was effective September 1, 2003 and it was authorized an ROE of 10.20 percent.

WGL Holdings, Inc.'s (WGL) natural gas distribution entity, Washington Gas Light Company (Washington Gas) has operations in Washington DC, Virginia and Maryland. Currently, only Maryland allows a rate design that mitigates variation in revenues due to weather and other matters, such as conservation. According to WGL's 2005 Annual Report, 40.99 percent of its natural gas distribution customers were in Maryland as of September 30, 2005, and used 44.98 percent of the gas delivered for the Fiscal Year Ended September 30, 2005. Maryland refers to its rate design as a revenue normalization adjustment (RNA). The RNA was a part of a Stipulation that allows for an evaluation of the impact of the plan on Washington Gas' risk and rate of return in the next rate case. The most recent allowed ROEs and RORs for each jurisdiction were: 10.60 percent ROE and 8.42 percent ROR for Washington DC effective on November 24, 2003; 10.75 percent ROE and 8.61 percent ROR

[6] Northwest Natural Gas 2005 SEC Form 10-K.
[7] Northwest Natural Gas 2005 Annual Report.

for Maryland effective November 6, 2003; and 10.50 percent ROE and 8.44 percent ROR for Virginia effective October 4, 2004.[8]

Q. Are all of the reduced risks due to the various rate designs of your comparable companies reflected in their stock prices?

A. Yes. However, one must use the DCF model to capture the price changes that may have occurred to reflect the reduced risk of these companies. This is just one of the reasons why I still believe the DCF model is the best model for estimating the cost of common equity for utility companies.

Q. Have any other Missouri natural gas distribution utilities been allowed a rate design that mitigates risk due to weather?

A. Yes. Laclede Gas Company (Laclede) was allowed a weather mitigation rate design in Case No. GR-2002-356.

Q. Did Laclede's credit rating change after it was granted this weather mitigation rate design?

A. Unfortunately, Laclede Group's credit rating actually fell on May 5, 2003, from A+ to A after the approval of the weather mitigation rate design. In its May 5, 2003 research report S&P cited financial weakness that can be traced primarily to "several successive warmer-than-normal winters and higher debt leverage."

Q. Even when Southern Union was predominately a natural gas distribution company, did any of its other divisions have a weather mitigation rate design?

A. According to Southern Union's 2005 Annual Report, only the Rhode Island properties of the New England Gas Company (a division of Southern Union) had a weather mitigation rate design. The Rhode Island properties accounted for approximately 22 percent

[8] WGL Holding, Inc.'s 2005 Annual Report.

of Southern Union's revenues in 2005, but have since been sold on August 25, 2006. According to Southern Union's 2005 Annual Report, this weather mitigation rate design went into effect in 2002. This rate design required New England Gas Company to defer the margin impact of weather that is greater than two percent colder-than-normal and recover the margin impact of weather that is greater than two percent warmer-than-normal.

Q. Did the weather mitigation rate design approved in Rhode Island have any impact on Southern Union's credit rating?

A. No. However, this doesn't mean that this rate design didn't reduce the risk for these properties. It just didn't reduce it enough to have an impact on Southern Union's consolidated credit rating. However, it is also important to remember that utility stocks are long-term investments. Consequently, short-term variability in earnings may not be a significant concern for investors if they realize that they will eventually earn the long-term expected return. This is precisely the reason that many financial textbooks suggest using the geometric mean when estimating the equity risk premium.

Q. On page 8, line 14, through page 9, line 3, of Mr. Trippensee's rebuttal testimony, he discusses why he believes the minimum allowed ROE should be based on the cost of long-term debt of 7.70 percent because shareholders are subordinate to debtholders. Do you agree with Mr. Trippensee that the embedded cost of long-term debt should be the starting point to determine the cost of common equity?

A. No. Mr. Trippensee should not have used the embedded cost of long-term debt as a benchmark. The use of an embedded cost of debt to determine a current cost of common equity is not a proper risk premium analysis.

Q. What is the proper way to estimate a cost of common equity using a risk premium approach?

A. If one wishes to estimate a current cost of common equity, then one also needs to use a current cost of debt. For example, the average cost of BBB-rated debt for October 2006 was 6.24 percent. One would then determine an appropriate risk premium to apply to this current cost of debt. According to the textbook *Analysis of Equity Investments: Valuation* (2002) by John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, a typical risk premium added to the yield-to-maturity (YTM) of a company's long-term debt is in the 3 to 4 percent range. It is important to note that the YTM is based on a company's current cost of debt, not an historical cost of debt. Because utility stocks behave much like bonds, I wouldn't add more than a 3 percent risk premium to arrive at a rough estimate of the cost of common equity. This would result in a 9.24 percent cost of common equity for a typical BBB-rated utility company.

Q. Are you proposing that the Commission use this methodology to estimate MGE's cost of common equity?

A. No. I am just providing an example as to the proper way to perform a risk premium analysis.

Q. Has Mr. Trippensee's methodology for estimating a fair cost of common equity for a natural gas distribution company with a straight fixed-variable rate design changed in this case compared to the Atmos rate case, Case No. GR-2006-0387?

A. Yes.

Q. Did Mr. Trippensee explain in his rebuttal why he changed his methodology?

A. No.

Q. What changes did he make to his methodology?

A. In the Atmos case Mr. Trippensee calculated the difference between Atmos' embedded cost of long-term debt and the Thirty-year Treasury bond and then added this difference to Atmos' embedded cost of long-term debt. This resulted in his estimate of a cost of common equity of 7.00 percent. In this case he simply recommended that the cost of common equity should be somewhere in between MGE's embedded cost of long-term debt and the low end of my recommended cost of common equity range.

Q. What would Mr. Trippensee's recommendation have been in this case if he applied the same methodology that he used in the Atmos case?

A. If he had applied the same methodology in this case, his recommended cost of common equity would have been 10.55 percent (7.70 – 4.85 + 7.70).

Q. Why did the methodology he used in the Atmos' case cause such a higher recommendation in this case?

A. Mainly because he is making inappropriate comparison of an historical debt cost to a current yield on Treasury bonds. MGE's embedded cost of long-term debt is a full 167 basis points higher than Atmos' embedded cost of long-term debt (7.70 – 6.03). However, the Thirty-year Treasury bond yield also dropped by 28 basis points (5.13 – 4.85).

Q. If the Commission were inclined to specifically consider a reduction in the ROE as consideration for a rate design that reduces MGE's risk of under recovery of non-gas costs, what would you recommend to the Commission?

A. The Commission should authorize an ROE in the lower part of my recommended ROE.

SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your surrebuttal testimony.

A. My conclusions regarding the capital structure and cost of common equity are listed below:

1. Southern Union's consolidated capital structure is still the appropriate capital structure for estimating MGE's rate of return. It is consistent with the high amount of leverage that Southern Union has consistently used since it acquired MGE in 1994. There is no reason to believe investors would think that Southern Union would capitalize MGE similar to the way its peers are capitalized. Mr. Hanley's hypothetical capital structure should be rejected. The calculation of the cost of capital for MGE should be based on Southern Union's actual consolidated capital structure as of December 31, 2005, as shown on Schedule 9 attached to my direct testimony;

2. Mr. Trippensee's risk premium analysis using an embedded cost to estimate a current cost of common equity violates basic tenets of finance. Mr. Trippensee does not acknowledge that the stock prices of my comparable companies reflect the reduced risks that these companies incur due to their rate designs, which not only include weather mitigation rate designs, but rate designs similar to the straight fixed-variable rate design proposed by Staff in this case. The use of the DCF model allows for a reasonable measure of investors required rates of return in light of these reduced risks.

3. My cost of common equity recommendation using the DCF model, which reflects the current capital and economic environment, produces a fair and reasonable cost of common equity. As stated in Schedule 22 attached to my direct testimony, a cost of common equity of 8.65 percent to 9.25 percent would produce a fair and reasonable rate of return of 8.01 percent to 8.23 percent for the Missouri jurisdictional natural gas utility rate base for MGE.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

STANDARD &POOR'S RATINGSDIRECT

RESEARCH

Research Update:

Southern Union And Unit Downgraded To 'BBB-', Off Watch Neg

Publication date: 29-Nov-2006
Primary Credit Analyst: Plana Lee, New York (1) 212-438-3119; plana_lee@standardandpoors.com

Rationale

On Nov. 29, 2006, Standard & Poor's Ratings Services lowered its corporate credit ratings on Southern Union Co. and subsidiary Panhandle Eastern Pipe Line L.P. to 'BBB-' from 'BBB'. At the same time, Standard & Poor's removed the ratings from CreditWatch with negative implications.

The outlook is stable. The rating was originally placed on CreditWatch on Sept. 15, 2006.

The rating action reflects our assessment of the company's movement toward riskier business segments, coupled with an aggressive financial policy that liberally uses debt leverage. Together, these traits embody credit quality at the lower end of the 'BBB' category.

Houston, Texas-based Southern Union engages in natural gas transportation, storage, liquefied natural gas (LNG) terminaling, gathering and processing, and distribution.

The ratings are based on a business risk profile at the consolidated entity that is categorized as satisfactory and an aggressive financial risk profile. Southern Union's credit strengths include the cash flow stability of its regulated interstate natural gas pipeline assets, a hedging program designed to mitigate the commodity price exposure of its Southern Union Gas Services gathering and processing segment (SUGS), and its remaining low-risk gas distribution businesses in Missouri and Massachusetts.

Southern Union's pipeline assets (about 51% of total expected 2007 EBITDA) include wholly owned Panhandle Eastern Pipe Line and its subsidiaries (collectively Panhandle Energy), which transport gas from the Gulf Coast and Anadarko basin to the Midwest and Great Lakes markets. Subsequent to the closing of the currently pending transaction with Energy Transfer Partners, Southern Union will also have a 50% ownership interest in Florida Gas Transmission Co. The pipeline segments bring stability to cash flows due to generally favorable FERC regulation, access to multiple supply points, strong markets, and manageable re-contracting risk.

These strengths are partially offset by the weak business risk profile of the gathering and processing segment at SUGS (23% of total EBITDA). Southern Union's acquisition of SUGS for $1.6 billion in March 2006 increased its business and financial risk. SUGS' percent-of-proceeds contracts account for about 80% of its margins and expose the company to volatile commodity prices. Moreover, the purchase price was initially financed entirely with debt, which was later repaid with proceeds from $1.1 billion in utility asset sales and $600 million in junior subordinated debt.

SUGS' commodity price risk is somewhat mitigated through 2007 by a hedging program consisting of natural gas puts with an $11 floor for 2006 on 45,000 million Btu (mmBtu) per day (about 85% of equity volumes) and a $10 floor for 2007 on 25,000 mmBtu per day (about 50% of equity volumes). Furthermore, the company has added ethane, propane, and crude oil puts with an average $12.04 floor on 8,000 mmBtu per day for the remainder of 2006 and an average $11.40 floor on 26,000 mmBtu per day for 2007, resulting in an effective hedge position of about 90% for both years. SUGS also has a strong market-share position in the Texas and New Mexico region, where it has operated for more than 60 years.

At Southern Union's Trunkline LNG facility (12% of total EBITDA), capital costs are high and are expected to reach about $250 million for the LNG infrastructure enhancement project (IEP), which will add ambient air vaporization and natural gas liquids extraction capabilities to the terminal. IEP is fully contracted with BG Group under long-term contracts and should add an estimated $35 million in EBIT upon completion in 2008.

Following the sale of the Rhode Island and Pennsylvania utilities, Missouri Gas Energy (MGE) and New England Gas Co, (together 14% of total EBITDA) are Southern Union's remaining low-risk gas-distribution businesses. MGE makes up the bulk of this segment, and its strong business risk profile reflects reasonably favorable regulation by the Missouri Public Service Commission, a mostly residential customer base, the ability to recover fuel costs from customers as they are incurred, a franchise with Kansas City, Mo. that extends through 2010, and a perpetual franchise with St. Joseph, Mo.

Given Southern Union's movement away from natural gas utilities and

toward the midstream industry, cash flows have become less predictable and, as a result, stronger credit-protection measures are expected to maintain ratings. However, at the same time, the company's credit protection measures have been stretched and its financial policy has been aggressive, with hybrid securities, preferred stock and convertible debt combined making up about 17% of the capital structure.

Southern Union's expected credit protection metrics at year-end 2006, including trailing twelve-month funds from operations to fully adjusted total debt of about 9%, adjusted total debt to EBITDA of about 5x, and adjusted total debt to capital of about 60%, are weak for the 'BBB-' rating. The ratings incorporate the expected equity issuance of $100 million in 2008 for the convertible notes issued in 2005, and the additional debt incurred as part of the pending transaction with Energy Transfer Partners. Going forward, the company will be required to guard its balance sheet and be less reliant on debt leverage to maintain the current ratings.

As part of the rating action, the rating on the company's $600 million junior subordinated notes was lowered to 'BB' from 'BB+'. The 'BB' rating is two notches below the corporate credit rating. The notching reflects Southern Union's investment grade corporate credit rating, the subordination of the hybrid issue, and the optional deferral of interest payments. The hybrid securities have a maturity of 60 years, are callable after five years, and have received intermediate (50%) equity credit for leverage purposes.

Liquidity

Southern Union's liquidity is adequate. The company's primary liquidity source is cash flow from operations, which was $328 million for the nine months ended Sept. 30, 2006, and cash on hand was $6.9 million as of that date. The company also has access to a $400 million revolving credit facility maturing in May 2010, of which $195 million was outstanding as of Sept 30, 2006. Consolidated Southern Union's long-term debt maturities over the next several years are manageable at $455 million in 2007, $525 million in 2008, and $60 million in 2009.

Outlook

The stable outlook reflects the higher risk of Southern Union's midstream business, somewhat offset by the stability afforded by its utility and pipeline transport segments. The stable outlook also incorporates expectations that the company will continue to mitigate commodity price exposure through active hedging beyond 2007. Rating improvement is possible if Southern Union mitigates its increased business risk through investments in lower-risk businesses, combined with a strengthening of its consolidated financial profile. Conversely, further downward rating movement could occur if the company continues to acquire higher-risk businesses that are financed by selling lower-risk assets and incurring additional debt.

Ratings List

Downgraded, Off Watch Neg

	To	From
Southern Union Co.		
Corporate Credit Rating	BBB-/Stable/--	BBB/Watch Neg/--
Senior Unsecured	BBB-	BBB/Watch Neg
Junior Subordinated	BB	BB+/Watch Neg
Preferred Stock	BB	BB+/Watch Neg
Panhandle Eastern Pipe Line LP		
Corporate Credit Rating	BBB-/Stable/--	BBB/Watch Neg/--
Senior Unsecured	BBB-	BBB/Watch Neg

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