Exhibit No.:	
Issue:	Rate of Return
Witness:	Kathleen C. McShane
Type of Exhibit:	Rebuttal Testimony
Sponsoring Party:	Laclede Gas Company
Case No.:	GR-99-315

LACLEDE GAS COMPANY

GR-99-315

REBUTTAL TESTIMONY

OF

KATHLEEN C. McSHANE

REBUTTAL TESTIMONY OF
KATHLEEN C. McSHANE

Q. Please state your name and business address.

A. My name is Kathleen C. McShane, and my business address is 4550 Montgomery Avenue, Suite 350N, Bethesda, Maryland 20814.

Q. Are you the same Kathleen C. McShane who previously filed direct testimony and schedules in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to a number of the findings and recommendations made by Messrs. Broadwater and Burdette with which I have disagreements.

General Comments

Q. Please discuss the fundamental disagreements that you have with the testimony given by Messrs. Broadwater and Burdette.

A. With the exception of Mr. Broadwater's risk premium test, the methodologies employed by the two witnesses are limited to tests that measure only the cost of attracting capital. Moreover, the results of these tests, which measure the return requirement on the market value of common equity, are then applied by Messrs. Broadwater and Burdette to the book, rather than market, value of the common stock.

Q. What basic principles have the witnesses ignored by relying solely on tests of the cost of attracting capital without adjusting the results, derived from market values, before applying them to book values?

A. The criteria that govern the determination of a fair return on equity include not only the ability to maintain the financial integrity of the firm and to attract new capital but also the opportunity to earn a return on common equity that is commensurate with returns on investments in other enterprises of corresponding risk. This third criterion has been basically ignored by Messrs. Broadwater and Burdette.

One cannot deny that the cost of attracting capital is lower today then it was in the earlier part of the decade. Interest rates have declined significantly; the current yield on 30-year Treasuries is 5.9%, compared to 8.5% at the beginning of 1990. However, the declining interest rate environment, low inflation, rising productivity, and strong economic growth have laid the groundwork for rising returns to equity investors. The failure to recognize these trends by focusing solely on a mechanical application of cost of attracting capital results to book values will render utilities unattractive and uncompetitive investments. In the context of the regulatory principles that govern establishment of a fair return, failure to recognize these trends in the determination of the allowed return contravenes the opportunity cost principle and the fairness principle.

A comparison of utility returns to market returns (and relative market valuations) since the beginning of the decade shows that utilities have significantly under performed the market (on a risk-adjusted basis). During the 1990s, the average compound return for my sample of U.S. gas distributors has been 11.0%; the corresponding return on the S&P 500 was 26.4%. Over the same period, the market/book ratio for the S&P 500 has risen from 2.40 times to almost 6.00 times, while the LDCs' market/book ratios have languished, rising only from 1.37 times to 1.75 times (Laclede's has risen from 1.28 times to only 1.64 times). The marked decline in both the LDCs' and Laclede's relative valuation since 1990 indicates significant market under performance.

Q. How can the Commission explicitly recognize the opportunity cost principle?

A. There are two ways in which the Commission can recognize the opportunity cost principle -- and, in turn, the fairness principle. The first is to give weight to the comparable earnings test results. The second is to recognize that the application of an unadjusted market-value based discounted cash flow test result to the book value of common equity significantly understates the fair return. Viewed another way, as applied by Staff and Public Counsel, this book value does not even generate the level of earnings necessary to provide Laclede with the opportunity to earn the relatively low rates of return that Staff and Public Counsel themselves have proposed. My pre-filed testimony provides the basis for making an appropriate adjustment that corrects for this fundamental deficiency (page 3).

Q. Both Mr. Broadwater and Mr. Burdette employ the discounted cash flow model (applied to Laclede) as the primary test for estimating the fair return. Mr. Broadwater determines the DCF cost of equity for Laclede to be 9.0-10.0% (mid-point of 9.5%); Mr. Burdette concludes that the cost of equity for Laclede is 9.7%. These results become the witnesses' recommendations for the allowed return on book value. In principle, what are the implications of applying these expected returns on market value to book value?

A. The application of the DCF model results to book value equates to the investors' expected return only when market price is equal to book value. When utility market prices are above book value, the DCF test results understate a fair return. As the divergence between market and book value grows, so does the divergence between the investors' expected equity return and the DCF test result. Neither of the witnesses attempt to correct for this deficiency.

Based on *Value Line* projections, the average expected return on equity for gas distributors (2002-2004) is close to 13.0%. Mr. Broadwater's unadjusted estimate of the

DCF cost of equity for LDCs, based on forecast growth, was 10.25%, which is consistent with an expected ROE of 13.0% and the Value Line forecast LDC earnings retention rate of 40%. However, Mr. Broadwater and Mr. Burdette would have the Commission set Laclede's return on book value at 9.5- 9.7%, ignoring the investors' expected returns of 13.0%.

The immediate implications for investors are basically two:

(1) Application of an expected return, estimated by reference to market value, to book value will tend to push the market/book ratio of Laclede's stock toward 1.0. At a current price of $23.25, Laclede's market/book ratio is approximately 1.60 times (book value as of 9/30/98 of $14.57). A reduction in price from $23.25 to book value is equivalent to a loss in shareholder value of over 35%.

(2) A return of 9.5-9.7% on a book value per share of $14.90 (Value Line forecast for 1999) is equivalent to earnings per share of $1.43. With the 1999 dividend at $1.34, Laclede's dividend payout ratio would be close to 95%. The Company would be precariously close to being unable to cover its dividend (and would be unable to do so if weather is warmer than normal) and unlikely to be able to maintain its recent moderate dividend increases.

Q. Is it your view that it is the function of the Commission to set a return that will either sustain the Company's market value at recent levels or ensure that the relative market valuation improves?

A. Simply put, it is the role of the Commission to set a fair return.

In setting a fair return, it is critical to recognize that the return estimated using the DCF approach is in relation to market value; the allowed return is set on book value. As indicated at page 4 of my pre-filed testimony, a return of 10% on market values does not

produce the same cash flows to investors as a 10% return on book value unless market value is equal to book value.

The application of a market-value determined return to book value is tantamount to concluding that the fair value of utility investors' common equity shares is equal to book value. There is no legal principle or precedent that suggests that the equity of a utility should be treated differently than the equity securities of similar risk non-utilities. Non-utilities are able to maintain the market value of their securities significantly above book value. To illustrate, over the past decade (1989-1998), the average market/book ratio of my sample of low risk industrials was 255%, compared to 158% for Laclede and 160% for my sample of LDCs. Yet, Mr. Broadwater and Mr. Burdette would have the Commission set a return that would deprive the utility of the ability to earn returns commensurate with those available to enterprises of commensurate risk, reducing the market/book ratio to 1.0.

Moreover, the idea that the appropriate market/book ratio should be 1.0 does not square with either basic economic theory or the objective of regulation. The objective of regulation is to simulate competition. Under pure competition, theoretically, market value should equal replacement cost. Replacement cost will generally exceed book value because booked assets are not restated for experienced inflation. Since the average rate of inflation over the past 25 years has been 5.3%, book values materially understate utility asset replacement costs. One would, therefore, expect the fair market value of utility shares to be well above book value. The original cost book value of the equity is the base (or the point of departure) upon which the fair return is set, because the base can be measured objectively. It is not, however, synonymous with the fair value of the equity.

I note that in 1998 witness Broadwater did not recommend the results of his application of the discounted cash flow test, because he was not "comfortable" with the results. This discomfort may be related to the internal inconsistency of applying a DCF value determined on the basis of market prices to book value. A return to an investor is, at the

end of the day, a dollar return. It is clear that a 10% return on a market value of $20 is not the same as a 10% return on a $10 book value. Yet analysts that would take a DCF return (determined at a utility market/book ratio well above 1.0) and apply it to book value would have the Commission believe an investor would be satisfied with a 35% decline in shareholder value and the virtual inability of the utility to ensure payment of the dividend.

Application of the Discounted Cash Flow Model

Q. In addition to the failure of the witnesses' to recognize the internal inconsistency of applying DCF cost estimates to book value, do you have any specific disagreements with the witnesses' estimates of the DCF cost of equity?

A. Yes. I have two basic disagreements. The first is both witnesses' application of, and focus on, the DCF test results applied to Laclede alone, and the second is the reliance on historic growth rates as a key input to estimating investor expectations.

Q. Why do you have concerns with the application of the model to a single company?

A. The text Principles of Corporate Finance by Richard A. Brealey and Stewart C. Myers (New York: McGraw-Hill, 1996), page 64, provides a well-reasoned response to this question in its illustration of the application of the DCF model to Duke Power.

> "..there are obvious dangers in analyzing any single firm's stock with such simple rules of thumb as the constant-growth DCF formula. First, the underlying assumption of regular future growth is at best an approximation. Second, even if it is an acceptable approximation, errors inevitably creep into the estimate of *g*.

> Remember, Duke Power's cost of equity is not its personal property. In well-functioning capital markets investors capitalize the dividends of all securities in Duke Power's risk class at exactly the same rate. But any estimate of *r* for a single common stock is noisy and subject to error. Good practice does not put too much weight on single-company cost-of-equity estimates. It collects samples of similar companies, estimates *r* for each, and takes an average. The average gives a more reliable benchmark for decision making."

The potential problems with relying on a single company's data are evident simply by comparing Mr. Broadwater's projected growth rates for Laclede from last year to those of this year.

	GR-98-374 Schedule 15	GR-99-315 Schedule 15
Projected Growth Rates (Average)	2.73%	4.00%

Despite an increase in the average forecast growth rate of over 1.25%, the average price of Laclede's stock actually declined, from the $24.125 used in the 1998 testimony to $22.156 used in the 1999 testimony (see Mr. Broadwater's Schedule 16 in GR-98-374 and GR-99- 315).

Mr. Broadwater's estimated DCF result for Laclede increased by close to a full percentage point, from GR-98-374 to GR-99-315, while the results for his comparable LDC sample in 1999 are within 25 basis points of their 1998 values. There are no fundamental reasons for the significantly different magnitude of change in the results for Laclede compared to the LDC sample. Instead, the comparison provides a stark illustration of the extent to which reliance on a single company can bias the results.

Given the demonstrated volatility of the results for a single company, without significant changes in the underlying fundamentals that bear upon the cost of equity, the DCF test applied to a proxy sample should be the principal focus of estimating the cost of attracting capital.

Q. What problems are encountered in using historic growth rates to measure investor expectations?

A. The discounted cash flow model is an expectational model. That means that the growth component should reflect, not what growth rates a company or industry has achieved, but what investors expect for the future. There are various empirical studies that support the conclusion that investment analysts' forecasts are better predictors of future growth rates than are historic growth rates.[1]

Historic growth rates may be useful as corroboration for direct estimates of investor expectations (i.e., forecasts of growth) if: (1) historic growth rates are stable; and/or (2) there is compatibility between historic growth rates and forecast growth rates. For the LDCs, neither condition holds. Moreover, given the changes in the industry, historic growth rates are not likely to be an accurate measure of investor expectations.

For Mr. Broadwater's sample of seven comparable LDCs, the average forecast growth rate in GR-99-315 (Schedule 23) is over 2.25% higher than the average historic growth rate. The differential that existed in his 1998 testimony was of a similar magnitude (5.6% projected growth versus 3.7% historic growth).[2] The historic growth rates have continued to decline by a significant amount, from 3.7% to 2.9%; the forecast growth rates are within 30 basis points of last year's values.

[1] Lawrence D. Brown and Michael S. Rozeff, "The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from Earnings", *The Journal of Finance*, Vol. XXXIII, No. 1, March 1978; R. Charles Moyer, Robert E. Chatfield, Gary D. Kelley, "The Accuracy of Long-Term Earnings Forecasts in the Electric Utility Industry", International Journal of Forecasting (1985) 241-252; James H. Vaner Weide and William T. Carleton, "Investor Growth Expectations: Analysts vs. History", *The Journal of Portfolio Management*, Spring 1998; and, Dov Fried and Dan Givoly, "Financial Analysts" Forecasts of Earnings, A Better Surrogate for Market Expectations", *Journal of Accounting and Economics* 4 (1982) 85-107.

[2] GR-98-374, Schedule 23; Bay State Gas was eliminated to make this year's sample comparable to last year's.

The downward bias of averaging forward-looking estimates of investor expectations with historic values that understate investor expectations is significant. The difference between Mr. Broadwater's average projected growth rate of 5.28% and his growth rate of 4.15% that averages historic with forecast growth rates is over 1%.

Mr. Broadwater's DCF cost based on forward-looking estimates of growth is 10.24%. Instead of this value, he relies on a range of 9.11% to 10.24%; the lower end of the range results from factoring in historic growth rates that significantly understate future expectations. As a result, his LDC sample DCF cost is understated by over 50 basis points.

Equity Risk Premium Approach

Q. Mr. Broadwater uses an equity risk premium approach to derive an estimate of the return requirement for Laclede in which he estimates a risk premium as the difference between the Moody's AA Utility Bond Yield and the Value Line projected ROE. What are your comments?

A. While the approach has some appeal, its application contains a number of significant infirmities. First, Mr. Broadwater uses only the one-year forward ROE from which he subtracts the bond yield. In principle, investors' expectations are not based on the results for a single year, but are longer-term. The impact of using single year ROE values rather than long-term expected values can have a significant impact on the estimated risk premium.

For example, in March 1999, Value Line's forecast for Laclede's 2000 ROE was 12.0%; the corresponding longer-term ROE was 13.5%, a difference of 1.5%. Reliance on the longer term ROE rather than a one-year ROE translates directly into a 1.5% higher equity risk premium.

My other major concern with the analysis is that it covers a period including interest rates close to 350 basis points higher than current rates. In light of (1) changes in the industry since 1988 and (2) evidence of an inverse relationship between interest rates and equity risk premiums, the average risk premiums cited by Mr. Broadwater are not meaningful. More specifically, one would anticipate lower risk premium levels at higher interest rates, and thus when higher rates (prior to 1993) are calculated in the average risk premium, the results are not meaningful. If the analysis is limited to 1993 to present (when bond yields fell below 8%), and the long-term forecast ROE is substituted for the one-year forward ROE, the average risk premium for Laclede is about 4.95%, 1.4% above Mr. Broadwater's 3.55%.

At present, the yield on AA Moody's utility bonds is 7.67%. Adding the 4.95% risk premium to that yield produces a return of 12.6%, rather than the 10.8% result in Mr. Broadwater's testimony.

Capital Asset Pricing Model

Use of One-year Treasury Note as Risk-Free Rate

Q. Mr. Burdette uses the one-year Treasury note yield as the risk-free rate in his CAPM application. Do you have any concerns with that approach?

A. In principle, the use of the 30-year yield is a better reflection of the utility asset life. However, since the CAPM is, in theory, a one-period model, the one-year note is an acceptable alternative if it is used in conjunction with the equity risk premium calculated in relation to one-year income returns. Mr. Burdette's risk premium is, however, based on differentials between equities and income returns for 30-year Treasuries. Since the yield on one-year notes is typically less than the yield on 30-year notes, Mr. Burdette's risk premium is understated. The average spread between the yield on long Treasuries and one-year notes has been about 1% over the last 25 years. That difference needs to be

added to the 7.4% risk premium in relation to 30-year bonds to arrive at a correct average historic market risk premium in relation to one-year notes. Recognition of this correction requires that Mr. Burdette's result be adjusted upward by about 100 basis points.

Level of Risk Free Rate

Mr. Broadwater uses a 30-year Treasury yield range of 5.01-5.58% (mid-point, 5.3%), over the six-month period ending March 1999. The average yield on 30-year Treasuries for the six month period through the end of June 1999 has been about 5.65%; the Blue Chip Financial Forecasts of July 1, 1999 forecasts the yield for the remainder of the year at 5.95%, for a 1999 average of 5.8%. Hence, Mr. Broadwater's yield of 5.3% understates investor expectations by at least 50 basis points.

Market Risk Premium

Q. Both Mr. Broadwater and Mr. Burdette use average market risk premiums covering the period 1926-1997 of 7.4% (the value through 1998 is 7.5%). What concerns do you have with this estimate?

A. Both witnesses use an average over a long period of time without any consideration of how current economic and capital market circumstances are likely to have influenced investor expectations for the future. Direct estimates of investor expectations indicate investors anticipate a higher differential between equity and bond returns than they have achieved in the past. As I noted at page 13 of my pre-filed testimony, the difference between expected equity returns and 30-year Treasury bond yields, at a long Treasury bond yield of 5.25%, is 9.8%, considerably higher than the average 7.4% achieved from 1926-1997. The expansion of the differential makes economic sense, since low inflation, low interest rates, high productivity and increased globalization of markets provide the basis for expectations of relatively strong equity market returns. As the table below

shows, periods of high growth, low inflation and low interest rates have been consistent with relatively high equity risk premiums.

The determination of a cost of equity that approximately reflects investor expectations and the returns achievable in the market by enterprises of similar risk cannot be accomplished by limiting the analysis to simple averages of historic equity/bond differences.[1] The estimate of the market risk premium must explicitly recognize current market circumstances. Doing so raises the market risk premium from its long term average to no less than the 8.5% I have used in my testimony.

TABLE 1

Period	Description	Stock Returns	Bond Returns	Bond Yields	CPI Growth	GDP Growth	Risk Premiums in Relation to:	
							Bond Returns	**Bond Yields**
1926-1939	Pre-War, Market Crash, Deflation	9.8%	5.0%	3.1%	-1.6%	0.9% a/	4.8%	6.8%
1940-1951	Growth and Inflation, Early Post World War II	13.2	2.4	2.3	5.5	6	10.8	10.9
1952-1967	Steady Low Inflation, Robust Growth	14.8	1.6	3.8	1.6	3.8	13.2	11
1968-1982	Rising Inflation, Interest Rates, Stagflation	8.4	6	8.3	7.4	2.6	2.4	0.1
1983-1991	Falling Nominal and Real Interest Rates, Moderately High/Steady Inflation	17.8	13.6	9.1	3.9	3.1	4.2	8.7
1992-1998	Low Inflation and Interest Rates, Moderate/Steady Growth	20.2	11.2	6.5	2.6	3.1	9	13.7

a/ 1930-1939

[1] Robert Harris, "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return", *Financial Management*, Spring 1986, pp. 58-67.

Beta

Q. Both Mr. Broadwater and Mr. Burdette focus on Laclede's own beta to estimate the CAPM cost of equity in preference to the beta for a sample of companies. What are your comments?

A. It is well recognized that betas are measured with error and that any single beta estimate is subject to considerable company-specific noise. As I noted in response to DR 2026(1), calculation of a 95% confidence interval for each of the betas for the companies in my LDC sample shows that the "true" beta is within plus or minus 0.35 of the calculated beta coefficient. For Laclede, in particular, whose relatively thin trading (4.8 million shares in 1998 versus 15.8 million shares on average for the LDCs in the proxy sample), the company-specific value is suspect.

I also noted in DR 2024 and 2026(2) that (1) the only other LDC with a AA rating, Washington Gas Light, has a beta of 0.60, and (2) Peoples Energy, whose risk characteristics, other than beta, are very similar to Laclede's, has the highest beta in the sample (0.80). These differences in betas suggest companies with similar fundamental risk characteristics can have quite different betas.

In light of these considerations, the evidence supports using a sample beta rather than a company-specific beta. Mr. Broadwater's and Mr. Burdette's LDC sample betas are both 0.63. Using the sample beta rather than the 0.55 beta calculated for Laclede increases the witnesses' cost of equity estimates by 60 basis points in relation to their 7.4% market risk premiums. (The indicated increase is larger when the market equity risk premium is adjusted to reflect current equity market expectations and to correct Mr. Burdette's mismatch of the risk-free rate and the historic market risk premium.)

Q. Does this conclude your rebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Laclede Gas Company's Tariff to Revise Natural Gas Rate Schedules	)))	Case No. GR-99-315

AFFIDAVIT

Kathleen C. McShane, of lawful age, being first duly sworn, deposes and states:

1. My name is Kathleen C. McShane. My business address is 4550 Montgomery Avenue, Suite 350-N, Bethesda, Maryland 20814; and I am a Senior Vice President of Foster Associates, Inc.

2. Attached hereto and make part hereof for all purposes is my rebuttal testimony, consisting of pages 1-14, inclusive.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Kathleen C. McShane

Subscribed and sworn to before me, the undersigned Notary Public, this 4th day of August, 1999, at Bethesda, Maryland.

Patricia J. Bradley

My Commission Expires
10/14/02