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Issues: Cost of Capital
Witness: Dr. J. Randall Woolridge
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Surrebuttal Testimony Date: October 6, 2006

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2006-0314

SURREBUTTAL TESTIMONY

OF

J. RANDALL WOOLRIDGE

ON BEHALF OF

THE DEPARTMENT OF ENERGY – NATIONAL NUCLEAR SECURITY ADMINISTRATION

Jefferson City, Missouri
October 6, 2006

Q. PLEASE STATE YOUR FULL NAME, ADDRESS, AND OCCUPATION.

A. My name is J. Randall Woolridge and my business address is 120 Haymaker Circle, State College, PA 16801. I am a Professor of Finance and the Goldman, Sachs & Co. and Frank P. Smeal Endowed University Fellow in Business Administration at the University Park Campus of the Pennsylvania State University.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS CASE?

A. Yes. On August 8, 2006 I filed direct testimony on behalf of the United States Department of Energy that is representing the interest of the National Nuclear Security Administration ("DOE-NNSA") and other affected Federal Executive Agencies.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. My surrebuttal testimony primarily focuses on issues discussed in the rebuttal testimony of KCP&L witness Samuel Hadaway. These issues include the trend and level of interest rates, Mr. Hadaway's 50 basis point risk adjustment and the Stipulation and Agreement, the appropriate capital structure for KCP&L, the equity risk premium, and the DCF results. I also comment on an issue addressed in the surrebuttal testimony of DOE-NNSA witness James Dittmer.

<u>Interest Rates</u>

Q. PLEASE REVIEW MR. HADAWAY'S ASSESSMENT OF INTEREST RATES.

A. At pages 5-7 of his rebuttal testimony Mr. Hadaway contends that I have understated KCP&L's equity cost rate because interest rates have increased and are headed higher. He provides data indicating that interest rates have increased and, in Schedule SCH-11, cites a source forecasting a long-term Treasury bond rate in 2007 of 5.7%.

The data provided by Mr. Hadaway, as well as his source for the forecasted data, are stale and do not reflect the recent downturn in interest rates. The table below shows rates as of October 3, 2006. The current rate on 30-year Treasury bonds is 4.76%, or nearly one full percentage point below the risk-free rate now being employed by Mr. Hadaway.

Forecasting market determined data, especially over short periods of time such as a year, is virtually impossible to do. Investors in the bond markets are primarily highly-sophisticated financial institutions. If interest rates were expected to increase over the next month or so, institutions would not be risking a loss of capital by buying bonds at today's lower rates. That is why Mr. Hadaway should be using today's rate on long-term Treasuries (4.76%) in his updated equity cost rate study, and not speculating on the direction of interest rates.

NOTES/BONDS	COUPON	MATURITY DATE	CURRENT PRICE/YIELD
2-YEAR	4.625	09/30/2008	99-29+ / 4.67
3-YEAR	4.875	08/15/2009	100-24 / 4.59
5-YEAR	4.500	09/30/2011	99-23 / 4.56
10-YEAR	4.875	08/15/2016	102-00 / 4.62
30-YEAR	4.500	02/15/2036	95-29+ / 4.76

Source: www.bloomberg.com

<u>Hadaway's 50 Basis Point Risk Adjustment and the Stipulation Agreement</u>

Q. PLEASE DISCUSS MR. HADAWAY'S 50 BASIS POINT RISK ADJUSTMENT.

A. Mr. Hadaway's had added 50 basis points to his equity cost rate estimate for the proxy group to reflect the additional business risk of KCPL to account for the Company's higher capital expenditure budget relative to the proxy group. He has based this adjustment on one factor – KCP&L's high level capital expenditures in the coming years. As indicated in his response to Data Request DOE_20060612-4-2, Mr. Hadaway has performed no studies to assess the business and/or financial risk of KCPL relative to the proxy group. Business and financial risk for an electric depends on many factors, but Mr. Hadaway has not accounted for any factors other than capital expenditures. Furthermore, the 50 basis point adjustment is totally arbitrary and without merit. Mr. Hadaway has performed no studies to justify the magnitude of the 50 basis point adjustment.

In addition, in making this risk adjustment, Mr. Hadaway provides no assessment of the financial risk of KCP&L relative to the proxy group. As shown in Exhibit_(JRW-4), the Company's proposed capital structure includes a common equity ratio which is 622 basis points higher than the average of the proxy group. This indicates a lower level of financial risk. However, Mr. Hadaway has failed to even recognize the lower financial risk of KCP&L let alone to make a downward adjustment to reflect KCP&L's lower level of financial risk.

Q. IN ASSESSING THE RISKINESS OF KCP&L, HAS MR. HADAWAY CONSIDERED ELEMENTS OF THE STIPULATION AGREEMENT?

A. No. In his direct testimony, Mr. Hadaway's makes no mention of the Stipulation and Agreement reached among most of the parties in Case EO-2005-0329 in his direct testimony. Hence, he totally ignored the agreement in assessing the riskiness of KCP&L and therefore its effect on the cost of equity capital.

Q. HAS MR. HADAWAY ADDRESSED THE STIPULATION

AGREEMENT IN HIS REBUTTAL TESTIMONY?

A. At pages 24-25 he does, but only in rebuttal to my testimony. On page 25, however, he states " … neither the Stipulation nor the process that led to its negotiation and approval has eliminated the financing, construction, and ultimate regulatory risks that the company faces."

Q. DO YOU AGREE WITH THIS EVALUATION OF THE STIPULATION?

A. I agree that the Stipulation has "not eliminated" the Company's financing, construction, and regulatory risks. But, as I indicated in my direct testimony, there are elements of the Agreement which significantly reduce the riskiness of KCP&L, including the impact of the risk associated with KCP&L's ongoing investment plan. These elements include agreements that: (1) the Resource Plan is reasonable; (2) there will be no objections to pension expense, (3) the Company can increase amortization to maintain S&P financial ratio benchmarks, and (4) there will not be challenges to including specified infrastructure projects, including those for generation, transmission, and distribution, into rate base on the ground that the projects were not necessary or timely, or that alternative technologies or fuels should have been used by KCP&L.

Q. HAVE YOU PERFORMED ANY STUDIES TO QUANTIFY THE REDUCTION IN RISK OF KCP&L DUE TO THESE FACTORS?

A. No, I have not performed any studies specific to the elements (discussed above) of the Stipulation and Agreement. However, there is no doubt they reduce risk to some degree but I feel that to speculate on the specific degree of reduction would be to encroach on the prerogative of the Commission. In my opinion, the

Stipulation and Agreement, especially the fact that the Company can increase amortization to maintain S&P financial ratio benchmarks, is worth the yield equivalent of one bond rating category. Over time, the yield difference between rating categories, say A versus BBB, has been about 30 basis points. This is conservative since the Stipulation and Agreement allows the Company to maintain ratios that qualify for an investment-grade bond rating. The difference in basis points between investment-grade and non-investment grade bonds, say BBB versus BB, is much greater than 30 basis points.

Capital Structure

Q. ON PAGE 20 MR. HADAWAY CLAIMS THAT YOUR CAPITAL STRUCTURE STUDY INCLUDES SHORT-TERM DEBT. PLEASE RESPOND.

A. No, Mr. Hadaway is in error. The capital structure that I present for the proxy group in Exhibit_(JRW-4) is the average for the group over the four quarters ending 3/31/06, and does not include short-term debt. The average common equity ratio for the group is 47.59% which is well below the common equity ratio of 53.81% recommended by KCP&L.

Equity Risk Premium

Q. MR. HADAWAY CRITICIZES YOUR CAPM APPROACH, AND SPECIFICALLY YOUR EQUITY RISK PREMIUM AND EXPECTED MARKET RETURN, ON PAGES 18 AND 22 OF HIS REBUTTAL TESTIMONY. PLEASE COMMENT.

A. On page 18 of his rebuttal testimony, Mr. Hadaway indicates that my equity cost rate approaches are 'colored' by my personal views on future equity market returns, and claims this observation is based on my academic research,' and that "this academic research cannot be proved or disapproved." In addition, on page 22, Mr. Hadaway suggests that had I used 'typical Ibbotson data' that my CAPM result would have been higher and that my low rate of return follows from my academic research.

With respect to the typical Ibbotson data, Mr. Hadaway is apparently unaware of many studies performed over the past twenty years that highlight the empirical problems associated with using the Ibbotson historical return data to estimate an equity risk premium. As discussed in my testimony, the use of historical return to estimate an expected risk premium can be erroneous because (1) ex post returns are not the same as ex ante expectations, (2) market risk premiums can change over time, increasing when investors become more risk-averse, and decreasing when investors become less risk-averse, and (3) market conditions can change such that ex post historical returns are poor estimates of ex ante expectations. Furthermore, there are a number of flaws in using historical returns over long time periods to estimate expected equity risk premiums. These issues, as discussed in my testimony, include: (1) Biased historical bond returns; (2) the arithmetic versus the geometric mean return; (3) unattainable and biased historical stock returns; (4) survivorship bias; (5) the "Peso Problem;" (6) market conditions today are significantly different than the past; and (7) changes in risk and return in the markets. Mr. Hadaway is unable to provide any serious rebuttal against these issues and the studies I cite as evidence.

Mr. Hadaway does indicate that that my low rate of return follows from my academic research. This is totally untrue – it is not my academic research. As I discuss in my testimony, there are three approaches to estimating the equity risk premium: (1) using historical stock and bond returns, (2) developing expected market returns from fundamental data (primarily earnings and dividends), and (3) employing surveys of financial professionals. In arriving at my equity risk premium, I use all three approaches and I provide evidence from over twenty studies published relating to size and the decline of the equity risk premium. Again, Mr. Hadaway does not provide any serious rebuttal against these issues and the studies I cite as evidence.

Q. ARE MR. HADAWAY'S VIEWS ON THE EQUITY RISK PREMIUM REFLECTIVE OF THOSE USED IN THE REAL WORLD OF FINANCE?

A. No. Mr. Hadaway has used two sources for his equity risk premiums -- he uses a historical risk premium as computed by Ibbotson Associates, and he uses a risk premium from a study by Harris and Marston. I have discussed at length the issues with the Ibbotson approach and have cited the results of many studies that evaluate it. Mr. Hadaway provides no response in his rebuttal testimony. In addition, I cited the problems with the results of the Harris and Marston study – namely that it is based solely on the upwardly-biased EPS growth rate estimates of Wall Street analysts. Again, Mr. Hadaway provides no response in his rebuttal testimony.

In contrast, I have used not only the results of numerous academic studies (including Ibbotson and Harris and Marston), but also the results from leading investment banks and consulting firms as well as surveys of CFOs and financial forecasters. These later sources – investment banks, consulting firms, and CFOs - use the equity risk premium concept every day in making financing, investment, and valuation decisions. Their results, which reflect the level of the equity risk premium as it is applied in the real world of finance, indicate an equity risk premium in the 3-4 percent range and not in the Mr. Hadaway's 6-7 percent range. Hence, Mr. Hadaway's equity risk premium is not reflective of how the real world views the equity risk premium.

DCF Results

Q. PLEASE REVIEW MR. HADAWAY'S ASSESSMENT OF DCF APPROACHES IN THIS PROCEEDING.

A. Mr. Hadaway has expressed concern in using the DCF model to estimate an electric utility's equity cost rate because, in his opinion, the dividend yields and expected growth rates are too low. Therefore he has criticized my DCF results, and even excluded his DCF results, which use Wall Street analysts' growth rate forecasts. He argues that his own DCF results using analysts' EPS growth rates, which indicate an equity cost rate of 9.3-9.4 percent, are too low and therefore ignores these results. He then develops two DCF models incorporating an expected GDP growth rate of 6.6%. In my testimony, I criticize this approach since Mr. Hadaway has provided no theoretical or empirical support that long-term GDP growth is a reasonable proxy for the expected growth rate in earnings and dividends in the electric utility industry. As I indicate in my testimony, the 6.60% GDP growth rate is well above the historic measures of growth for earnings and dividends for the proxy group of twenty-four electric utilities. Nonetheless, Mr. Hadaway provides no support in his rebuttal testimony for using the GDP growth rate proxy and no response to my commentary.

The additional issue is the 6.60% GDP growth rate. The 6.60% is a long-term historic growth rate in GDP as developed in Schedule SCH-6. As I indicate in my testimony, the numbers in the Schedule clearly suggest that GDP growth in more recent decades has slowed and that a figure closer to 5.0% is more appropriate today for the U.S. economy. Furthermore, I highlight that the 6.60% GDP growth rate is well above forecasts of long-term GDP growth. The GDP growth rate forecast in the *Survey of Professional*

Forecasters is 5.71% and the Energy Information Administration (EIA), in its projections used in preparing *Annual Energy Outlook*, forecasts long-term GDP growth of 5.50%. Again, in his rebuttal testimony, Mr. Hadaway is totally silent to these criticisms of the magnitude of his GDP growth rate.

Mr. Dittmer's Critique of Mr. Cline's Testimony

Q. FINALLY, PLEASE REVIEW THE ISSUE IN MR. DITTMER'S TESTIMONY.

A. Mr. Dittmer responds to Mr. Cline on the cost to rate payers of traditional rate relief versus additional amortization. To make his point, Mr. Cline uses a numerical example which employs a capital structure for an electric utility with a common equity ratio of 68%. Mr. Dittmer claims that this is an inappropriate capital structure for an electric utility.

Q. DO YOU CONCURR WITH MR. DITTMER?

A. Yes. The appropriate capital structure for an electric utility in today's market includes a common equity ratio in the 45-50 percent range. This is supported by my capital structure study in Exhibit_(JRW-4).

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Kansas City	)	
Power & Light Company to Modify Its Tariff to	)	Case No. ER-2006-0314
Begin the Implementation of Its Regulatory Plan	)	

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA	)	
	)	**SS.**
COUNTY OF CENTRE	)	

BEFORE ME, the undersigned notary public, this day personally appeared J. RANDALL WOOLRIDGE, to me known, who being duly sworn according to law, deposes and says:

"My name is J. RANDALL WOOLRIDGE. I am of legal age and a resident of the Commonwealth of Pennsylvania. I certify that the foregoing surrebuttal testimony and exhibits, offered by me on behalf of the Department of Energy – National Nuclear Security Administration, are true and correct to the best of my knowledge and belief."

J Randall Woolridge

J. Randall Woolridge

SUBSCRIBED AND SWORN to before me, a notary public, on this 5th day of October, 2006.

Mary L. Hart

Notary Public in and for the Commonwealth
Of Pennsylvania

My Commission Expires:

NOTARIAL SEAL
Mary L. Hart, Notary Public
State College Boro., Centre County
My commission expires August 25, 2009