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Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

James H. Vander Weide, Ph.D.

April 2008

Empire Exhibit No. 29
Case No(s). ER-2008-0093
Date 5-12-08 Rptr KF

REBUTTAL TESTIMONY
OF
DR. JAMES H. VANDER WEIDE
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2008-0093

I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. ARE YOU THE SAME JAMES H. VANDER WEIDE WHO PROVIDED DIRECT TESTIMONY BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION ("THE COMMISSION") IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I have been asked by The Empire District Electric Company ("Empire" or "the Company") to review the pre-filed direct testimonies of Mr. Matthew J. Barnes and Mr. Michael Gorman and to evaluate their recommended costs of equity for Empire. Mr. Barnes's testimony is presented on behalf of the Financial Analysis Staff of the Missouri Public Service Commission ("the Commission"),

and Mr. Gorman's testimony is presented on behalf of Explorer Pipeline Company; General Mills; and Praxair, Inc.

Q. IS THERE ANYTHING IN THE DIRECT TESTIMONIES OF MR. BARNES OR MR. GORMAN THAT WOULD CAUSE YOU TO CHANGE YOUR RECOMMENDED 11.6 PERCENT COST OF EQUITY FOR EMPIRE?

A. No. After reviewing their testimonies, I continue to recommend that Empire be allowed to earn a return on equity of 11.6 percent.

II. Rebuttal of Mr. Barnes

Q. WHAT IS MR. BARNES'S RECOMMENDED COST OF EQUITY FOR EMPIRE?

A. Mr. Barnes recommends a cost of equity in the range 9.70 percent to 10.85 percent, with a midpoint of 10.28 percent.

Q. HOW DID MR. BARNES ESTIMATE EMPIRE'S COST OF EQUITY?

A. Mr. Barnes estimated Empire's cost of equity by applying the Discounted Cash Flow ("DCF") model to a proxy group of 16 electric companies. As a check on his DCF results, Mr. Barnes also applied the Capital Asset Pricing Model ("CAPM") to his proxy company group.

A. Proxy Companies

Q. WHAT CRITERIA DID MR. BARNES USE TO SELECT HIS PROXY COMPANY GROUP?

A. Mr. Barnes selected his proxy companies based on the following criteria:

1. Stock publicly traded: This criterion did not eliminate any companies;
2. Information printed in Value Line: This criterion did not eliminate any companies;

3. Ten years of data available: This criterion eliminated twelve additional companies;
4. Percent of electric utility revenues greater than or equal to 70 percent: This eliminated twenty-four companies;
5. No pending merger in the last six months: This criterion did not eliminate any companies.
6. No reduced dividend in the last ten years: This criterion eliminated eight additional companies.
7. Two sources for projected growth with one available from Value Line: This criterion did not eliminate any companies.
8. At least investment grade credit rating: This criterion eliminated two additional companies.

Q. DOES MR. BARNES CONSIDER ALL COMPANIES THAT MEET HIS CRITERIA?

A. No. Mr. Barnes eliminated Xcel Energy, even though it appears to satisfy all his criteria.

Q. WHAT IS THE PURPOSE OF PROXY SELECTION CRITERIA?

A. The purpose of proxy selection criteria is to identify the largest possible group of comparable risk companies that have sufficient data to reliably apply cost of equity methodologies such as the DCF, CAPM, and risk premium.

Q. WHY IS IT DESIRABLE TO CHOOSE A RELATIVELY LARGE GROUP OF COMPARABLE RISK COMPANIES?

A. It is desirable to choose a relatively large group of comparable risk companies because the estimate of the cost of equity obtained from applying cost of equity methodologies to a single company is uncertain. Cost of equity methodologies such as the DCF, CAPM, and risk premium, require estimates of quantities such as growth rates, betas, and expected risk premiums that necessarily involve a degree of uncertainty. However, the uncertainty in

estimating the cost of equity by applying cost of equity methodologies to a single company can be significantly reduced by applying cost of equity models to a relatively large group of comparable risk companies. Intuitively, any over- and under-estimate of the cost of equity that arises from the application of cost of equity methods to a single company is averaged out by applying the methods to a larger group of comparable risk companies.

In addition, the choice of a relatively small group of proxy companies requires a great deal of judgment. When the analyst applies judgment to select a small group of companies, the analyst may be tempted to choose a set of selection criteria that produce a desired result. The analyst can eliminate the possibility of selection bias by starting with the largest possible group of comparable risk companies and eliminating only those companies with insufficient data to estimate the cost of equity.

Q. DO MR. BARNES'S PROXY SELECTION CRITERIA PRODUCE THE LARGEST POSSIBLE GROUP OF COMPARABLE RISK COMPANIES THAT HAVE SUFFICIENT DATA TO RELIABLY APPLY COST OF EQUITY METHODOLOGIES?

A. No. Mr. Barnes's criteria eliminate 12 companies because they do not have ten years of data available; 24 companies because they have less than 70 percent revenue from electric service; and eight companies because they have reduced their dividend at some point in the past ten years. However, Mr. Barnes fails to explain why these criteria are required to assure either that

proxy companies are comparable in risk, or that there are sufficient data to reliably apply his cost of equity methodologies.

Q. DOES MR. BARNES, IN FACT, USE TEN YEARS OF DATA TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. No. Mr. Barnes's DCF model is based primarily on analysts' growth rates that do not require ten years of historical data.

Q. MR. BARNES'S CRITERION THAT COMPANIES MUST HAVE 70 PERCENT REVENUE FROM ELECTRIC SERVICE ELIMINATES SOME COMPANIES THAT ARE COMBINATION ELECTRIC/GAS COMPANIES. IS THERE ANY REASON WHY COMBINATION ELECTRIC/NATURAL GAS COMPANIES SHOULD BE ELIMINATED FROM THE PROXY GROUP?

A. No. Since natural gas operations are similar in risk to electric operations, a combination electric/natural gas company is similar in risk to an electric company.

Q. IS THERE ANY REASON WHY A COMBINATION ELECTRIC/NATURAL GAS COMPANY MIGHT EVEN BE LESS RISKY THAN A PURE ELECTRIC COMPANY?

A. Yes. One could reasonably expect that a combination electric and gas utility might be slightly less risky than a company operating in a single energy market such as electricity because electric and natural gas operations are comparable in risk when considered individually, but are not perfectly correlated with each other. The imperfect correlation of returns on electric

and natural gas operations can allow the combination electric/natural gas companies to diversify their risks.

Q. WHAT CRITERIA DID YOU USE TO SELECT PROXY COMPANIES?

A. As described in my direct testimony, I selected all the companies in Value Line's groups of electric companies that: (1) paid dividends during every quarter of the last two years; (2) did not decrease dividends during any quarter of the past two years; (3) had at least three analysts included in the I/B/E/S mean growth forecast; (4) have an investment grade bond rating and a Value Line Safety Rank of 1, 2, or 3; and (5) are not the subject of a merger offer that has not been completed. These data indicate that my proxy groups of comparable companies are, if anything, conservative

Q. DO YOU HAVE ANY EVIDENCE THAT YOUR PROXY GROUPS ARE A CONSERVATIVE PROXY FOR THE RISK OF INVESTING IN EMPIRE?

A. Yes. On page 25 of my direct testimony, I note that my proxy electric companies have an average Value Line Safety Rank of 2, while Empire has a Value Line Safety Rank of 3. I also note that the average S&P bond rating of my electric proxy companies is approximately BBB+, while Empire has an S&P bond rating of BBB-. These data indicate that my proxy groups of comparable companies are, if anything, conservative proxies for the risk of investing in Empire.

Q. DO YOU HAVE ANY EVIDENCE THAT YOUR PROXY GROUPS ARE SIMILAR IN RISK TO MR. BARNES'S SMALL PROXY GROUP?

A. Yes. Mr. Barnes's proxy group of 16 companies has an average Value Line Safety Rank of 2, and an average S&P bond rating of BBB+. The average S&P bond rating for both my large proxy electric group and Mr. Barnes's smaller group of electric companies is BBB+, and the average Value Line Safety Rank for both groups is 2.

Q. WHAT ARE THE IMPLICATIONS OF YOUR OBSERVATION THAT YOUR PROXY COMPANIES ARE A CONSERVATIVE PROXY FOR THE RISK OF INVESTING IN EMPIRE?

A. My observation that my proxy companies are demonstrably less risky than Empire implies that my cost of equity results are a lower bound for Empire's cost of equity. That is, Empire's cost of equity should be higher than the cost of equity results I obtain from my proxy companies.

Q. WHAT ARE THE IMPLICATIONS OF YOUR OBSERVATION THAT YOUR LARGE GROUP OF 37 PROXY COMPANIES IS SIMILAR IN RISK TO MR. BARNES'S SMALLER PROXY GROUP OF COMPANIES?

A. The implications of my observation that my large group of proxy companies is similar in risk to Mr. Barnes's smaller proxy group is that my cost of equity results are more reliable than Mr. Barnes's. As discussed above, it is preferable to use a larger proxy group of similar risk companies to estimate the cost of equity because the cost of equity results for a single company or a small group of companies is uncertain. However, the uncertainty in cost of equity results for a small group of companies can be reduced by using a larger group of companies of comparable risk.

B. DCF Model

Q. WHAT DCF MODEL DID MR. BARNES USE TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. Mr. Barnes used an annual DCF model of the form, $k = D_1/P_0 + g$, where k is the cost of equity, D_1 is the expected first period dividend, P_0 is the current stock price, and g is the average expected future growth in the company's earnings and dividends.

Q. WHAT ARE THE BASIC ASSUMPTIONS OF MR. BARNES'S ANNUAL DCF MODEL?

A. Mr. Barnes's annual DCF model is based on the assumptions that: (1) a company's stock price is equal to the present value of the future dividends investors expect to receive from their investment in the company; (2) dividends are paid annually; (3) dividends, earnings, and book value are expected to grow at the same constant rate forever; and (4) the first dividend is received one year from the date of the analysis.

Q. ONE OF THE ASSUMPTIONS OF MR. BARNES'S ANNUAL DCF MODEL IS THAT DIVIDENDS ARE PAID ANNUALLY. DO ANY OF MR. BARNES'S PROXY COMPANIES, IN FACT, PAY DIVIDENDS ANNUALLY?

A. No. All of Mr. Barnes's proxy companies pay dividends quarterly.

Q. CAN MR. BARNES'S ANNUAL DCF MODEL BE MATHEMATICALLY DERIVED FROM THE ASSUMPTION THAT DIVIDENDS ARE PAID QUARTERLY?

A. No. Mr. Barnes's annual DCF model can only be derived from the assumption that dividends are paid annually. When dividends are paid

quarterly, the quarterly DCF model is the only model that can be mathematically derived from DCF assumptions. Since Mr. Barnes's proxy companies pay dividends quarterly, he should have used a quarterly DCF model to estimate Empire's cost of equity.

Q. YOU ALSO MENTION THAT MR. BARNES'S DCF MODEL REQUIRES AN ESTIMATE OF THE EXPECTED FIRST PERIOD DIVIDEND FOR EACH COMPANY. HOW DID MR. BARNES ESTIMATE THE EXPECTED FIRST PERIOD DIVIDEND FOR HIS ANNUAL DCF MODEL?

A. Mr. Barnes used Value Line's estimate of each company's dividend over the next year as his estimate of the expected first period dividend in his annual DCF model.

Q. DO YOU AGREE WITH MR. BARNES'S USE OF VALUE LINE'S ESTIMATE OF EACH COMPANY'S DIVIDEND OVER THE NEXT YEAR AS THE ESTIMATE OF THE EXPECTED FIRST PERIOD DIVIDEND IN HIS APPLICATION OF THE DCF MODEL?

A. No. Mr. Barnes's annual DCF model is based on the assumption that dividends will grow at the same constant rate forever. Under the assumption that dividends will grow at the same constant rate forever, the cost of equity is given by the equation, $k = D_0 (1 + g) / P_0 + g$, where D_0 is the current annualized dividend, P_0 is the stock price, and g is the expected constant annual growth rate. Thus, the correct first period dividend in the annual DCF model is the current annualized dividend multiplied by the factor, (*1 + growth rate*).

Q. WHAT IS THE EFFECT OF MR. BARNES'S USE OF AN INCORRECT ESTIMATE OF THE FIRST PERIOD DIVIDEND IN HIS ANNUAL DCF MODEL?

A. Mr. Barnes's use of an incorrect estimate of the first period dividend, taken by itself, caused him to underestimate the DCF cost of equity for his proxy group by approximately 25 basis points.

Q. HOW DID MR. BARNES ESTIMATE THE GROWTH COMPONENT OF HIS DCF MODEL?

A. Mr. Barnes reviewed historical five- and ten-year growth rates in dividends per share, earnings per share, and book value per share, as reported in Value Line, along with forecasts of earnings per share obtained from I/B/E/S, Standard & Poor's, and Value Line. Mr. Barnes's final choice of growth rate was based on his judgment about the growth rate that, in his opinion, investors could expect for the proxy companies. In this case, Mr. Barnes claims that he gave primary weight to the analysts' forecasts of earnings per share growth in estimating the growth component of his DCF model; but he also reported and considered DCF results based on historical growth rates.

Q. DO YOU AGREE WITH MR. BARNES'S CONSIDERATION OF HISTORICAL GROWTH RATES TO ESTIMATE INVESTORS' EXPECTATIONS WHEN ANALYSTS' GROWTH EXPECTATIONS FOR MR. BARNES'S PROXY COMPANIES ARE READILY AVAILABLE?

A. No. Historical growth rates are inherently inferior to analysts' forecasts because analysts' forecasts already incorporate all relevant information

regarding historical growth rates and also incorporate the analysts' knowledge about current conditions and expectations regarding the future. My studies indicate that the correlation between analysts' growth forecasts and stock prices is significantly higher than the correlation between historical growth rates and stock prices.

Q. DO YOU AGREE WITH MR. BARNES'S CONSIDERATION OF ANALYSTS' EARNINGS PER SHARE GROWTH FORECASTS TO ESTIMATE THE GROWTH COMPONENT OF HIS DCF MODEL?

A. Yes. Analysts' growth forecasts are superior to historical growth rates because they incorporate all relevant information regarding current and future economic conditions. In addition, as discussed in my direct testimony, my studies indicate that analysts' growth forecasts are more highly correlated with stock prices than historical growth rates. This result is consistent with the hypothesis that investors use analysts' growth forecasts in making stock buy and sell decisions. Since the DCF model requires the growth estimates of investors, and investors use analysts' growth forecast in making stock buy and sell decisions, analysts' growth forecasts are the best estimate of future growth in the DCF model.

Q. WHAT ANALYSTS' GROWTH FORECASTS DOES MR. BARNES USE?

A. Mr. Barnes uses growth forecasts from I/B/E/S, Standard & Poor's, and Value Line.

Q. WHAT IS I/B/E/S?

A. I/B/E/S is a division of Thomson Financial that reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. Investors use the mean forecast as an estimate of future firm performance.

Q. WHY DO YOU RECOMMEND USING THE I/B/E/S GROWTH ESTIMATES IN THE DCF MODEL?

A. I recommend using the I/B/E/S growth forecasts in the DCF model because I/B/E/S growth forecasts: (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, (4) are widely used by institutional and other investors; and (5) are more highly correlated with stock prices than historical growth rates.

Q. HOW DO THE I/B/E/S GROWTH FORECASTS DIFFER CONCEPTUALLY FROM THE GROWTH FORECASTS OF STANDARD & POOR'S AND VALUE LINE?

A. The I/B/E/S growth forecasts differ conceptually from the growth forecasts of Standard & Poor's and Value Line in that the I/B/E/S growth forecasts represent the average growth forecast of all analysts or most all of the analysts that follow a particular stock, whereas the Standard & Poor's and Value Line growth forecasts represent only the views of a single analyst. In addition, the I/B/E/S long-term growth forecast is a forecast that covers a period from the beginning of the current period to a period five years later, whereas the Value Line forecast represents the growth for a five-year period

that began in 2004 – 2006 and ends in 2010 – 2012. Since the period 2004 – 2006 is two years old, the Value Line forecast is less appropriate for use in the DCF model.

Q. HOW DO THE I/B/E/S GROWTH FORECASTS DIFFER NUMERICALLY FROM THE STANDARD & POOR'S AND VALUE LINE FORECASTS FOR MR. BARNES'S PROXY COMPANIES?

A. As shown on Mr. Barnes's Schedule 15, the average I/B/E/S growth forecast for his proxy companies is 7.83 percent, while the average Standard & Poor's and Value Line forecasts are 7.75 percent and 5.53 percent, respectively.

Q. WHAT GROWTH FORECAST DID MR. BARNES ACTUALLY USE IN HIS DCF ESTIMATE OF EMPIRE'S COST OF EQUITY?

A. Mr. Barnes used a growth forecast in the range 5.55 percent to 6.70 percent.

Q. THE LOW END OF MR. BARNES'S GROWTH FORECAST IS CLEARLY ASSOCIATED WITH THE VALUE LINE GROWTH FORECAST. HOW DID MR. BARNES OBTAIN THE 6.7 PERCENT HIGH END OF HIS GROWTH FORECAST RANGE?

A. Mr. Barnes does not explain how he obtained the 6.7 percent high end of his growth forecast range. However, I note that his 6.7 percent high-end growth rate is 110 basis points less than the average I/B/E/S and Standard & Poor's growth forecasts for his proxy companies. Furthermore, since Mr. Barnes's final recommended cost of equity is based on the midpoint of his cost of equity range, Mr. Barnes's recommended cost of equity is based on a growth

rate that is 170 basis points less than the average I/B/E/S and Standard & Poor's growth forecasts.

Q. WHAT DCF RESULT WOULD MR. BARNES HAVE OBTAINED IF HE HAD USED THE I/B/E/S GROWTH FORECAST TO ESTIMATE THE GROWTH COMPONENT OF HIS DCF MODEL AND ALSO CORRECTLY ESTIMATED THE FIRST PERIOD DIVIDEND IN HIS DCF MODEL?

A. Mr. Barnes would have obtained a DCF estimate of the cost of equity equal to 12.1 percent (see Rebuttal Schedule JVW-1).

C. CAPM

Q. WHAT IS THE CAPM?

A. The CAPM is an equilibrium model in which the expected rate of return on an investment in a company is equal to a risk-free rate of interest, plus an expected risk premium, where the expected risk premium is the product of a company-specific risk factor, or beta, and the expected risk premium on the market portfolio of all securities.

Q. HOW DID MR. BARNES USE THE CAPM TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. The CAPM requires estimates of the risk-free rate, the company-specific risk factor, or beta, and the risk premium on the market portfolio. As his estimate of the risk-free rate, Mr. Barnes used the yield to maturity on 30-year Treasury bonds in January 2008 (4.33 percent). As his estimate of the company-specific risk factor or beta, Mr. Barnes used Value Line's average estimated beta for his proxy companies (0.85). As his estimate of the risk premium on the market portfolio, Mr. Barnes used: (1) the arithmetic mean risk premium

risk premium on the S&P 500 compared to the yield on long-term Treasury bonds for the period 1926 – 2006 (allegedly 6.5 percent); (2) the geometric mean risk premium on the S&P 500 compared to the yield on long-term Treasury bonds for the period 1926 – 2006 (allegedly 5.0 percent); and (3) the geometric mean risk premium on the S&P 500 compared to long-term Treasury bonds for the period 1996 – 2006 (allegedly 0.59 percent). Mr. Barnes obtained his risk premium data from Morningstar's (formerly Ibbotson Associates) 2007 Yearbook, *Stocks, Bonds, Bills, and Inflation* (SBBI).

Q. YOU NOTED EARLIER THAT MR. BARNES USED DATA FROM MORNINGSTAR (THE DATA FORMERLY PROVIDED BY IBBOTSON ASSOCIATES) TO ESTIMATE THE REQUIRED MARKET RISK PREMIUM COMPONENT OF THE CAPM. WHAT IS MORNINGSTAR' CURRENT ESTIMATE OF THE REQUIRED MARKET RISK PREMIUM ON STOCK INVESTMENTS COMPARED TO INVESTMENTS IN 20-YEAR U.S. TREASURY BONDS?

A. Morningstar's current estimate of the required market risk premium is 7.1 percent.

Q. HOW DOES MORNINGSTAR ARRIVE AT ITS 7.1 PERCENT ESTIMATE OF THE REQUIRED MARKET RISK PREMIUM?

A. Morningstar arrives at its estimate of the required market risk premium by calculating the arithmetic mean return on the S&P 500 and the arithmetic mean income return on 20-year U.S. Treasury bonds over the period 1926 through 2007. Morningstar then uses the difference between these two

arithmetic mean returns as its estimate of the forward-looking market risk premium.

Q. WHY DOES MORNINGSTAR RECOMMEND USING DATA FROM THE PERIOD 1926 THROUGH 2007 TO ESTIMATE THE MARKET RISK PREMIUM, RATHER THAN DATA FROM A SHORTER PERIOD OF TIME, SUCH AS THE PERIOD 1996 THROUGH 2007 USED BY MR. BARNES IN HIS THIRD RISK PREMIUM ESTIMATE?

A. As Morningstar states:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable. Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants. [2008 Ibbotson® SBBI® Valuation Yearbook, p. 82]

Q. DO YOU HAVE ANY EVIDENCE THAT MR. BARNES'S COST OF EQUITY ESTIMATES USING GEOMETRIC MEAN RISK PREMIUM DATA FOR THE PERIOD 1996 – 2006 ARE UNREALISTICALLY LOW?

A. Yes. As shown in Mr. Barnes's Schedule 18, Column 8, his CAPM model based on risk premiums for the short period from 1996 – 2006 produces an average cost of equity estimate of only 4.83 percent. Since investors are risk averse, reasonable investors would not invest in a more risky equity that was expected to earn just 4.83 percent if they could earn a return that is more than 120 basis points higher by investing in less risky utility bonds. Thus, Mr.

Barnes's cost of equity estimates using geometric mean risk premium data for the period 1996 – 2006 are unrealistically low.

Q. WHY DOES MORNINGSTAR RECOMMEND USING THE ARITHMETIC MEAN RETURN ON THE S&P 500 RATHER THAN THE GEOMETRIC MEAN RETURN ON THIS INDEX IN ORDER TO ESTIMATE THE MARKET RISK PREMIUM?

A. Morningstar recommends using the arithmetic mean return rather than the geometric mean return in order to estimate the cost of equity because a cost of equity based on the arithmetic mean return is the only cost of equity that will discount the investors' expected future wealth to the current price of the stock (see Ibbotson® SBBI® Valuation Yearbook at 77 – 81 and Schedule 5 in my direct testimony). In addition, the arithmetic mean is most appropriate for use in the CAPM because the CAPM is based on the assumption that the return is obtained from an additive process, and the arithmetic mean return is additive, whereas the geometric mean return is not. Because the arithmetic mean provides the best estimate of the required market risk premium, the Commission should ignore Mr. Barnes's two CAPM results based on geometric mean risk premiums.

Q. WHAT IS THE DIFFERENCE BETWEEN THE INCOME RETURN ON U.S. TREASURY SECURITIES AND THE TOTAL RETURN ON THESE SECURITIES?

A. The income return considers only the income an investor receives from owning a debt instrument such as U.S. Treasury securities, whereas the total

return considers both the income and the capital gain or loss on the investment.

Q. WHY DOES MORNINGSTAR RECOMMEND USING THE INCOME RETURN ON U.S. TREASURY SECURITIES RATHER THAN THE TOTAL RETURN IN ITS RISK PREMIUM ESTIMATE?

A. Morningstar recommends using the income return rather than the total return on Treasury securities to estimate the risk-free rate component of the equity risk premium because the income return is the only return that is risk free. Since the total return includes capital gains and losses, and capital gains and losses are highly uncertain, the total return is definitely not risk free.

Q. WHAT CAPM RESULT WOULD MR. BARNES HAVE OBTAINED IF HE HAD BASED HIS CAPM CALCULATIONS ON CORRECT INPUTS FROM MORNINGSTAR FOR THE MARKET RISK PREMIUM, THE AVERAGE VALUE LINE BETA FOR A LARGE SAMPLE OF RISK COMPARABLE COMPANIES, AND THE FORECASTED INTEREST RATE ON LONG-TERM U.S. TREASURY SECURITIES?

A. Mr. Barnes would have obtained a CAPM result of 10.4 percent [4.33 + (.85 x 7.1) = 10.4].

Q. DO YOU HAVE OTHER CRITICISMS OF MR. BARNES'S USE OF THE CAPM TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. Yes. Mr. Barnes fails to recognize that the CAPM underestimates the cost of equity for companies with betas less than 1.0 and that the CAPM must be

adjusted to include an additional risk premium for small capitalization companies such as Empire District.

Q. WHAT EVIDENCE DO YOU HAVE THAT THE CAPM TENDS TO UNDERESTIMATE THE COST OF EQUITY FOR COMPANIES WITH BETAS LESS THAN 1.0?

A. As described in my direct testimony at page 39, the original evidence that the unadjusted CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0 was presented in a paper by Black, Jensen, and Scholes, "The Capital Asset Pricing Model: Some Empirical Tests." Numerous subsequent papers have validated the Black, Jensen, and Scholes findings, including those by Litzenberger and Ramaswamy, Banz, Fama and French, and Fama and MacBeth.[1]

Q. DO YOU HAVE ANY EVIDENCE THAT INVESTORS EXPECT TO EARN A HIGHER RATE OF RETURN ON SMALL CAPITALIZATION COMPANIES SUCH AS EMPIRE THAN WOULD BE PREDICTED FROM THE BASIC CAPM EQUATION USED BY MR. BARNES?

A. Yes. Ibbotson provides evidence that investors require a higher rate of return for investments in small capitalization companies than is indicated by Mr.

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1 Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in Studies in the Theory of Capital Markets, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," Journal of Political Economy 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence." Journal of Financial Economics 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," Journal of Financial Economics (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," Journal of Finance (June 1992), pp. 427-465.

Barnes's CAPM equation. Ibbotson's most recent estimates of the risk premium required to be added to the basic CAPM cost of equity are shown below in Table 2.

TABLE 1
IBBOTSON ESTIMATES OF CAPM
SMALL COMPANY SIZE PREMIA [2]

Size	Smallest Mkt. Cap. ($ millions)	Premium
Large-Cap (No Adjustment)	9,274.049	-
Mid-Cap	2,413.583	0.92%
Low-Cap	725.267	1.65%
Micro-Cap	1.922	3.65%

Q. WHAT CAPM RESULT WOULD MR. BARNES HAVE OBTAINED IF HE HAD CORRECTLY RECOGNIZED THE EFFECT OF A COMPANY'S MARKET CAPITALIZATION ON THE REQUIRED CAPM RATE OF RETURN AND CORRECTLY USED THE ARITHMETIC MEAN RETURN FOR THE PERIOD 1926 - 2007?

A. Mr. Barnes would have obtained a CAPM cost of equity for Empire equal to 12.0 percent [4.33 + (.85 x 7.1) + 1.65 = 12.0].

III. Rebuttal of Mr. Gorman

Q. WHAT IS MR. GORMAN'S RECOMMENDED COST OF EQUITY FOR EMPIRE?

A. Mr. Gorman recommends a cost of equity for Empire equal to 10.0 percent.

[2] *See* Ibbotson® 2008 Risk Premia Over Time Report published by Morningstar.

Q. WHAT PROXY COMPANIES DOES MR. GORMAN USE TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. Mr. Gorman uses the group of 16 electric utilities shown on his Schedule MPG-4 to estimate Empire's cost of equity.

Q. WHAT CRITERIA DID MR. GORMAN USE TO SELECT HIS PROXY GROUP OF ELECTRIC UTILITIES?

A. Mr. Gorman chose Value Line electric utilities that met the following seven selection criteria (see Gorman Direct at 14-15):

a. S&P's senior secured bond rating in the "BBB" and "lower A-range" categories.
b. Moody's senior secured bond rating in the "Baa" and "lower A-range" categories.
c. Consensus growth estimates available from Zacks, Reuters and SNL Financial.
d. Had not suspended dividends over the last two years.
e. Common equity ratios to total capital between 40 percent and 60 percent.
f. No significant merger and acquisition activity.
g. Not exposed to corporate or market restructuring.

Q. DO YOU AGREE WITH MR. GORMAN'S PROXY GROUP SELECTION CRITERIA?

A. No. First, as I have discussed previously, the purpose of proxy group selection is to choose the largest possible group of comparable risk companies with sufficient data to estimate the cost of equity. One possible measure of comparable risk is a company's bond rating, which Mr. Gorman included in his criteria. However, Mr. Gorman's criteria that a company must have an equity ratio in the range 40 percent to 60 percent, and "no exposure to corporate or market restructuring" are superfluous because these are already considered by the credit rating agencies when they assign a

company's credit rating. Mr. Gorman's superfluous criteria greatly reduce the number of companies in his proxy group and thus reduce the reliability of his cost of equity estimate.

Second, Mr. Gorman incorrectly uses the S&P and Moody's "senior secured" bond ratings as criteria for his proxy group. The S&P and Moody's "senior secured" bond ratings apply only to a company's senior secured debt, not to a company's total debt or to the company as a whole. The S&P issuer credit rating is a better measure of a *company's* risk than its "senior secured" bond rating. For example, Empire's S&P issuer credit rating is BBB-, just one notch above non-investment grade, while its senior secured debt rating is BBB+. Empire's issuer credit rating is a better measure of the company's risk than the rating on its senior secured credit.

Third, Mr. Gorman's criteria are both vague and arbitrary. For example, Mr. Gorman fails to explain: (1) exactly what categories he intends to include in the phrase, "lower A range;" (2) why he selected common equity ratios in the range 40 percent to 60 percent rather than some other range, or any range at all; and (3) what he means by the phrase, "not exposed to corporate or market restructuring." Mr. Gorman's use of these arbitrary criteria serve only to reduce the number of companies in his proxy group, without improving either his group's risk comparability or the reliability of his cost of equity results.

Q. ARE ELECTRIC UTILITIES WITH EQUITY RATIOS OUTSIDE THE RANGE 40 PERCENT TO 60 PERCENT MORE RISKY THAN ELECTRIC UTILITIES WITH EQUITY RATIOS WITHIN THIS RANGE?

A. No. Using the data reported in Mr. Gorman's work papers, I have determined that the average S&P bond rating for the electric utilities with equity ratios outside the range 40 percent to 60 percent is approximately A- / BBB+. As shown on Mr. Gorman's Schedule MPG-4, the average S&P bond rating for the companies in his proxy group is BBB+. Thus, on the basis of S&P bond ratings, the companies Mr. Gorman eliminated due to the existence of equity ratios outside the range 40 percent to 60 percent have approximately the same risk as the companies in his proxy group.

Q. HAVE YOU BEEN ABLE TO DETERMINE FROM MR. GORMAN'S WORK PAPERS WHAT HE MEANS BY THE CRITERION, "NOT EXPOSED TO CORPORATE OR MARKET RESTRUCTURING"?

A. Yes. Apparently Mr. Gorman means that companies in his proxy group must not be categorized by the Edison Electric Institute as "diversified." Since there is little or no relationship between diversification and exposure to corporate or market restructuring, Mr. Gorman's last proxy selection criterion would have been easier to interpret if he had simply used the criterion "not classified by EEI as diversified" as his selection criterion.

Q. ARE "DIVERSIFIED" ELECTRIC UTILITIES MORE RISKY THAN THE "MOSTLY REGULATED" OR "REGULATED" ELECTRIC UTILITIES CONTAINED IN MR. GORMAN'S PROXY GROUP?

A. No. Using data from Mr. Gorman's work papers, I have also determined that the average S&P bond rating for the diversified companies that Mr. Gorman eliminated is A-. However, an A- bond rating is insignificantly different from the average BBB+ bond rating of the companies in Mr. Gorman's proxy group. Indeed, if anything, the average A- rating of the "diversified" companies Mr. Gorman excluded from his proxy group indicates that these companies are slightly less risky than Mr. Gorman's proxy companies. If Mr. Gorman intended to eliminate "diversified" companies because they are "more risky" than "regulated" or "mostly regulated" companies, Mr. Gorman's bond ratings indicate that his hypothesis is incorrect.

Q. HAS MR. GORMAN ALWAYS USED THESE SAME SELECTION CRITERIA TO CHOOSE PROXY COMPANIES?

A. No. In the recent AmerenUE rate case and a 2005 San Diego Gas & Electric proceeding, Mr. Gorman required that his proxy companies have investment-grade bond ratings, rather than bond ratings in the "BBB and lower A" range, as in this case. In addition, in the California proceeding, Mr. Gorman only required that a company have an equity ratio of at least 40 percent, rather than an equity ratio in the range 40 percent to 60 percent.

Q. HAS MR. GORMAN EVER ADOPTED THE SAME SELECTION CRITERIA YOU USE TO CHOOSE PROXY COMPANIES?

A. Yes. In a case for Progress Energy Florida in 2005, Docket No. 050078, Mr. Gorman filed testimony on July 13, 2005, in which he used my recommended proxy groups to estimate Progress Energy Florida's cost of equity:

> Q. How did you select your proxy risk group of publicly traded utilities in estimating a fair return for PEF?
>
> A. I first reviewed the proxy risk group of electric and gas utility companies relied on by PEF witness Dr. James Vander Weide. Based on a careful review of the companies included in his comparable groups, I have determined that those two groups are reasonably risk comparable to PEF. Hence, in an effort to minimize the issues between the methods I will use to estimate a fair return for PEF, and those contained in Dr. Vander Weide's analysis, I will use the same two proxy groups used by Dr. Vander Weide. I have reached this decision after reviewing the risk parameters of these groups and determined *[sic]* that they are reasonable risk proxies for use in estimating the cost of equity to PEF. [Gorman Direct Testimony, FPSC Docket No. 050078-EI, July 13, 2005, Page 16.]

My proxy groups in the Progress Energy Florida proceeding were selected using the same criteria that I have recommended in this proceeding.

Q. YOU NOTE THAT MR. GORMAN ADOPTED YOUR PROXY SELECTION CRITERIA IN THE PROGRESS ENERGY CASE IN FLORIDA, AND THAT YOU HAVE EMPLOYED THE SAME SELECTION CRITERIA IN THIS CASE AS YOU EMPLOYED IN THE FLORIDA CASE. HOW DOES YOUR RECOMMENDED PROXY GROUP IN THIS CASE COMPARE IN RISK TO MR. GORMAN'S SMALLER GROUP OF 16 ELECTRIC UTILITIES?

A. As noted above, my proxy group of 37 electric utilities has an average S&P bond rating of BBB+ and a Value Line Safety Rank of 2. Mr. Gorman's proxy group of 16 companies also has an average S&P bond rating of BBB+ and a Value Line Safety Rank of 2.

Q. WHAT CONCLUSION DO YOU DRAW FROM YOUR OBSERVATION THAT YOUR PROXY GROUP HAS MORE THAN TWICE AS MANY

COMPANIES AS MR. GORMAN'S, AND HAS THE SAME S&P BOND RATING AND VALUE LINE SAFETY RANK?

A. For all the reasons I have discussed above, I conclude that my proxy group provides a significantly more reliable cost of equity estimate than Mr. Gorman's.

A. Mr. Gorman's Constant Growth DCF Model

Q. WHAT RESULT DOES MR. GORMAN OBTAIN FROM HIS APPLICATION OF HIS CONSTANT GROWTH DCF MODEL?

A. Mr. Gorman obtains a DCF result of 11.54 percent.

Q. WHAT GROWTH RATE DID MR. GORMAN USE IN HIS CONSTANT GROWTH DCF MODEL?

A. Mr. Gorman used average analysts' growth rates from Zacks, Reuters, and SNL.

Q. IN HIS FINAL RECOMMENDATION, DOES MR. GORMAN GIVE ANY WEIGHT TO THE RESULTS OF HIS APPLICATION OF HIS CONSTANT GROWTH DCF MODEL?

A. No. Mr. Gorman states:

> The average three to five-year growth rate for my comparable group is 7.40%. This growth rate is too high to be a rational estimate of long-term sustainable growth. This inflated growth rate results in an inflated constant growth DCF result. Therefore, I will not place significant weight on this result in forming my recommended return on equity. [Gorman Direct at 19]

Q. MR. GORMAN SEEMS TO BELIEVE THAT INVESTORS' GROWTH EXPECTATIONS MUST BE "RATIONAL." ARE INVESTORS' GROWTH EXPECTATIONS ALWAYS "RATIONAL"?

A. No. In hindsight, most economists would agree that investors' growth expectations during the tech stock boom of the late 1990s and early 2000 were irrational. Yet, it was these "irrational" growth expectations that caused stock prices to rise by so much during that time.

Q. DOES THE DCF MODEL ONLY REQUIRE THE USE OF INVESTORS' GROWTH EXPECTATIONS WHEN INVESTORS' GROWTH EXPECTATIONS ARE "RATIONAL"?

A. No. The DCF model requires the use of investors' growth expectations, whether rational or irrational.

Q. IS IT APPROPRIATE FOR MR. GORMAN TO ADJUST THE GROWTH TERM IN HIS DCF MODEL, WITHOUT ALSO ADJUSTING THE STOCK PRICE TERM IN HIS MODEL?

A. No. If Mr. Gorman believes that investors' growth expectations are irrational, he should recognize that "irrational" growth expectations are likely to be accompanied by "irrational" stock prices. To be consistent in applying his own definition of "rational," Mr. Gorman would need to adjust not only his growth estimates to reflect the long-run growth in the economy, but also his stock prices to reflect a "rational" estimate of the value of the company.

B. Mr. Gorman's Two-Stage DCF Model

Q. WHAT IS THE BASIC ASSUMPTION OF MR. GORMAN'S TWO-STAGE DCF MODEL?

A. Mr. Gorman's two-stage DCF model is based on the assumption that investors believe his proxy companies will grow at the average analyst growth

rates for five years, and then beginning in the sixth year grow at the rate of 5 percent forever.

Q. DOES MR. GORMAN PROVIDE ANY EVIDENCE TO SUPPORT THIS BASIC ASSUMPTION?

A. No. He simply assumes that rational investors would make this assumption.

Q. WHY DOES MR. GORMAN PREFER THE RESULTS OF HIS TWO-STAGE DCF MODEL OVER THE RESULTS OF HIS CONSTANT GROWTH DCF MODEL?

A. Mr. Gorman asserts:

> The proxy group's three to five-year growth rate exceeds the growth rate of the overall U.S. economy. Based on consensus economic projections, as published by Blue Chip Economic Indicators, the five and ten-year GDP growth is estimated at a nominal rate of 5.0%. A company cannot grow, indefinitely, at a faster rate than the market in which it sells its products. The U.S. economy, or GDP, growth projection represents a ceiling, or high end, sustainable growth rate for a utility over an indefinite period of time. [Gorman Direct at 19]

Q. DO YOU AGREE WITH MR. GORMAN'S STATEMENT THAT COMPANIES CANNOT GROW FOREVER AT A RATE IN EXCESS OF THE EXPECTED GROWTH IN THE U.S. ECONOMY?

A. Yes. As Mr. Gorman implies, if a company grew forever at a rate in excess of the rate of growth of the U.S. economy, it would eventually take over the economy. This is not a reasonable expectation.

Q. DOES THE STATEMENT THAT A COMPANY CANNOT GROW AT A RATE GREATER THAN THE RATE OF GROWTH IN THE GNP FOREVER IMPLY THAT A SINGLE-STAGE DCF MODEL CANNOT BE USED TO ESTIMATE THE COST OF EQUITY?

A. No. Mr. Gorman fails to recognize that the DCF model requires the growth expectations of investors, not the growth expectations of Mr. Gorman. If investors use analysts' growth rates to value stocks in the marketplace, Mr. Gorman should use analysts' growth rates to estimate the growth component of the DCF model. Mr. Gorman also fails to recognize that companies do not have to grow at the same rate forever for the single-stage DCF Model to be a reasonable approximation of how prices are determined in capital markets.

Q. HAVE YOU DONE ANY STUDIES ON THE GROWTH RATES THAT INVESTORS USE TO VALUE STOCKS IN THE MARKETPLACE?

A. Yes. As discussed in my direct testimony, my studies indicate that investors use analysts' forecasted growth rates to value stocks in the marketplace.

Q. DOES THE STATEMENT THAT A COMPANY CANNOT GROW AT A RATE OF GROWTH GREATER THAN THE GROWTH IN GNP FOREVER IMPLY THAT MR. GORMAN'S ASSUMPTION THAT COMPANIES CAN ONLY GROW AT RATES FASTER THAN THE ECONOMY FOR FIVE YEARS IS CORRECT?

A. No. The statement that a company's earnings cannot grow at a rate greater than the rate of growth in the GNP forever, does not imply that companies can only grow faster than the rate of growth in the economy for five years. Mr. Gorman's assumption that companies must grow at the same rate as the economy after year five is completely arbitrary.

Q. DO YOU HAVE ANY EVIDENCE THAT THE CONSTANT GROWTH DCF MODEL WITH I/B/E/S ANALYSTS GROWTH RATES PROVIDES A

BETTER REPRESENTATION OF HOW INVESTORS VALUE SECURITIES THAN MR. GORMAN'S TWO-STAGE DCF MODEL?

A. Yes. To test the relative ability of the constant and two-stage DCF models to explain differences in how investors value securities, I have examined whether there is a statistical relationship between a company's price/earnings ratio and the growth rates used in both the constant growth and two-stage DCF models. If investors use the I/B/E/S growth rate in a constant growth DCF model in valuing electric company stocks, rather than the average growth rate in Mr. Gorman's two-stage DCF model, then the I/B/E/S growth rate should be more highly correlated with company price/earnings ratios than Mr. Gorman's average growth rate.

As shown below, the I/B/E/S growth rates are significantly more correlated with electric company price/earnings ratios than are Mr. Gorman's average growth rates from his two-stage model. The higher correlation of the I/B/E/S growth rates with price/earnings ratios is demonstrated by: (1) the higher r square in the equation containing the I/B/E/S growth rate, as opposed to the equation containing the average growth rate in Mr. Gorman's two-stage DCF model; and (2) the significantly higher t statistic on the I/B/E/S growth rate compared to Mr. Gorman's average growth rate. (A t statistic greater than 1.96 is generally considered to be evidence that the regression coefficient is significantly different from zero.) These results provide strong evidence that the constant growth DCF model with the I/B/E/S growth rates is

a reasonable approximation of how investors value securities in the marketplace.

TABLE 2
REGRESSION OF P/E RATIOS VS.
I/B/E/S GROWTH RATE AND DIVIDEND PAYOUT

	I/B/E/S GROWTH	DIVIDEND PAYOUT	R SQUARE	F
Coefficient	0.325	0.019	**0.174**	3.692
t statistic	**2.657**	1.005		

TABLE 3
REGRESSION OF P/E RATIOS VS.
TWO-STAGE GROWTH RATE AND DIVIDEND PAYOUT

	TWO-STAGE GROWTH	DIVIDEND PAYOUT	R SQUARE	F
Coefficient	0.744	(0.005)	**0.038**	0.694
t statistic	**1.054**	(0.286)		

C. Mr. Gorman's Risk Premium Model

Q. HOW DID MR. GORMAN ESTIMATE THE REQUIRED RISK PREMIUM FOR INVESTING IN HIS ELECTRIC COMPANY PROXY GROUP?

A. Mr. Gorman estimated the required risk premium for investing in his proxy electric utilities from data on the average authorized electric utility rates of return on equity for each year from 1986 to June 2007. Mr. Gorman found that the average authorized rate of return on equity for electric utilities over this period was 5.04 percent higher than the yield to maturity on long-term Treasury bonds and 3.67 percent higher than the yield to maturity on A-rated utility bonds.

Q. DO YOU AGREE WITH MR. GORMAN'S METHOD OF ESTIMATING THE REQUIRED RISK PREMIUM ON ELECTRIC UTILITY STOCKS?

A. No. Mr. Gorman fails to recognize that the Commission has a responsibility to make an independent assessment of the required return on equity for Empire in this proceeding. In addition, Mr. Gorman fails to recognize that the indicated risk premium in his data base tends to increase as interest rates decline. Mr. Gorman should have adjusted his average risk premiums to account for the relationship between the allowed risk premium on equity and the level of interest rates on long-term Treasury bonds and A-rated utility bonds.

Q. HAVE YOU STUDIED THE RELATIONSHIP BETWEEN THE ALLOWED RATES OF RETURN ON EQUITY BY REGULATORY COMMISSIONS AND THE INTEREST RATES ON LONG-TERM TREASURY BONDS AND A-RATED UTILITY BONDS?

A. Yes. Using the data found in Mr. Gorman's Schedules MPG-10 and MPG-11, I performed a regression analysis of the relationship between the risk premium implied by the allowed rates of return on equity issued by regulatory commissions and the interest rates on long-term Treasury bonds and A-rated utility bonds. I found that the risk premium implied by allowed rates of return compared to the yield on long-term Treasury bonds is given by the relationship:

$$RP_{AUTHORIZED} = 7.648 - 0.395 \times T_B$$

where:

$RP_{AUTHORIZED}$	=	the risk premium implied by utility commission authorized rates of return on equity,
7.648 and 0.395	=	estimated regression coefficients; and
T_B	=	the yield on long-term Treasury bonds.

Similarly, I found that the risk premium implied by allowed rates of return compared to the yield on A-rated utility bonds is given by the relationship:

$$RP_{AUTHORIZED} = 6.707 - 0.381 \times A_B$$

where:

$RP_{AUTHORIZED}$	=	the risk premium implied by utility commission authorized rates of return on equity,
6.707 and 0.381	=	estimated regression coefficients; and
A_B	=	the yield on Moody's A-rated utility bonds.

Q. WHAT RISK PREMIUMS DO YOU OBTAIN FROM YOUR STATISTICAL ANALYSIS OF THE RELATIONSHIP BETWEEN ALLOWED RATES OF RETURN AND INTEREST RATES USING MR. GORMAN'S DATA?

A. Using Mr. Gorman's forecasted interest rates, I obtain a risk premium of 5.83 percent over the yield to maturity on 20-year U.S. Treasury bonds and 4.26 percent over the yield to maturity on utility bonds. These risk premiums are approximately 60 to 80 basis points higher than the 5.04 percent and 3.67 percent risk premiums obtained by Mr. Gorman.

Q. WHY ARE THE ESTIMATED RISK PREMIUMS FROM YOUR REGRESSION ANALYSES SO MUCH HIGHER THAN THE AVERAGE RISK PREMIUMS OVER THE 1986 – 2006 PERIOD THAT MR. GORMAN USED?

A. The risk premiums from my regression analyses are higher than the average risk premiums over the period of Mr. Gorman's study because, as my regression analyses demonstrate, risk premiums generally increase when

interest rates decline; and interest rates have declined over the period of Mr. Gorman's study.

Q. HOW DID MR. GORMAN ESTIMATE THE INTEREST RATE COMPONENT OF HIS RISK PREMIUM METHOD?

A. Mr. Gorman estimated the interest rate component of his risk premium method in two ways. For his risk premium over the Treasury bond yield, Mr. Gorman used the Blue Chip 4.6 percent projected yield on 30-year Treasury bonds. For the risk premium over utility bonds, Mr. Gorman used the average yield on Baa-rated utility bonds for the 13-week period ending February 8, 2008.

Q. WHAT COST OF EQUITY ESTIMATES WOULD MR. GORMAN HAVE OBTAINED FROM HIS RISK PREMIUM ANALYSIS IF HE HAD CORRECTLY RECOGNIZED THAT THE RISK PREMIUM INCREASES WHEN INTEREST RATES DECLINE, AS YOU DESCRIBE ABOVE?

A. Using Mr. Gorman's Blue Chip forecasted interest rates of 4.6 percent on long-term Treasury bonds and 6.42 percent yield on Baa-rated utility bonds, Mr. Gorman would have obtained estimated risk premiums of 5.83 percent over long-term Treasury bonds and 4.26 percent over utility bonds. Adding these risk premium estimates to the interest rates, Mr. Gorman would have obtained cost of equity estimates of 10.4 percent and 10.7 percent. These results exceed Mr. Gorman's risk premium estimates of the cost of equity by approximately 50 to 80 basis points and exceed his recommended cost of equity by 40 to 70 basis points.

D. Mr. Gorman's Capital Asset Pricing Model ("CAPM")

Q. HOW DOES MR. GORMAN USE THE CAPM TO ESTIMATE THE COST OF EQUITY FOR HIS PROXY COMPANIES?

A. The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For his estimate of the risk-free rate, Mr. Gorman used the forecasted 4.6 percent yield to maturity on long-term Treasury bonds. For his estimate of the company-specific risk, or beta, Mr. Gorman used the median 0.85 Value Line beta for his proxy companies. For his estimate of the expected return on the market portfolio, Mr. Gorman used data on the return on the S&P 500 compared to the return on 20-year Treasury bonds over the period 1926 to 2007 reported in Morningstar' 2007 Yearbook.

Q. WHAT RISK PREMIUM VALUES DID MR. GORMAN USE IN HIS APPLICATION OF THE CAPM?

A. As explained on pages 31- 32 of his testimony, Mr. Gorman used risk premium values equal to 6.5 percent and 7.0 percent in his CAPM approach.

Q. DO YOU AGREE WITH MR. GORMAN'S USE OF 6.5 PERCENT AND 7.0 PERCENT ESTIMATES OF THE RISK PREMIUM ON THE MARKET PORTFOLIO IN HIS CAPM APPROACH?

A. No. Mr. Gorman relies on data from Morningstar to estimate the expected risk premium on the market portfolio. Morningstar strongly recommends the use of an arithmetic mean risk premium equal to 7.1 percent, not 6.5 percent or 7.0 percent. The Morningstar 7.1 percent recommended risk premium is the difference between the arithmetic average return on the market portfolio

over the period 1926 through 2007 and the arithmetic average income return on long-term Treasury bonds.

Q. WHY DOES MORNINGSTAR USE THE AVERAGE INCOME RETURN ON LONG-TERM TREASURY BONDS RATHER THAN THE AVERAGE TOTAL RETURN ON LONG-TERM TREASURY BONDS TO MEASURE THE MARKET RISK PREMIUM?

A. Morningstar explains the use of the income return on long-term Treasury bonds on page 77 of the valuation edition of the 2008 Ibbotson® SBBI® Yearbook:

> Price changes in bonds due to unanticipated changes in yields introduce price risk into the total return. Therefore, the total return on the bond series does not represent the riskless rate of return. The income return better represents the unbiased estimate of the purely riskless rate of return, since an investor can hold a bond to maturity and be entitled to the income return with no capital loss.

Q. WHAT COST OF EQUITY WOULD MR. GORMAN HAVE OBTAINED FROM HIS CAPM APPROACH IF HE HAD CORRECTLY USED THE MORNINGSTAR' 7.1 PERCENT MARKET RISK PREMIUM?

A. Mr. Gorman would have obtained a CAPM cost of equity estimate of 10.64 percent, 30 basis points higher than the 10.34 percent CAPM cost of equity estimate Mr. Gorman reports in his testimony. This estimate is based on a risk-free rate of 4.6 percent, the Ibbotson risk premium of 7.1 percent, and the average 0.85 Value Line beta for his proxy group of electric utilities.

Q. WHAT COST OF EQUITY WOULD MR. GORMAN HAVE OBTAINED FROM HIS CAPM IF HE HAD ADJUSTED HIS CAPM RESULT TO REFLECT THE

ADDITIONAL RISK ASSOCIATED WITH EMPIRE'S SMALL MARKET CAPITALIZATION?

A. Mr. Gorman would have obtained a CAPM cost of equity for Empire equal to 12.3 percent [4.6 + (.85 x 7.1) + 1.65 = 12.3].

E. Mr. Gorman's Fuel Adjustment Recommendation

Q. DOES MR. GORMAN RECOMMEND AN ADJUSTMENT TO HIS COST OF EQUITY IF THE COMMISSION APPROVES A FUEL ADJUSTMENT MECHANISM IN THIS PROCEEDING?

A. Yes. Mr. Gorman recommends that his cost of equity be reduced if the Commission approves a fuel adjustment mechanism for Empire in this proceeding.

Q. DO YOU AGREE WITH MR. GORMAN'S RECOMMENDATION THAT THE COST OF EQUITY BE REDUCED IF THE COMMISSION APPROVES A FUEL ADJUSTMENT MECHANISM IN THIS PROCEEDING?

A. No. Mr. Gorman fails to recognize that his recommended cost of equity is based on his application of several cost of equity methodologies to a group of proxy companies. However, Mr. Gorman fails to acknowledge that virtually all of the companies in his proxy group already have fuel adjustment mechanisms. Thus, the reduced risk of having a fuel adjustment mechanism is already included in Mr. Gorman's recommended cost of equity.

Q. IF THE COMMISSION FAILS TO APPROVE A FUEL ADJUSTMENT MECHANISM, WOULD AN UPWARD ADJUSTMENT TO THE COST OF EQUITY BE REQUIRED?

A. Yes. Since virtually all companies in the proxy groups presented in testimony in this proceeding have fuel adjustment clauses, the cost of equity recommendations of all three witnesses already include the lower risk of having a fuel adjustment mechanism. If no fuel adjustment mechanism is approved, the cost of equity should be increased to account for the greater risk of not having a fuel adjustment mechanism.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

REBUTTAL SCHEDULE JVW-1
MR. BARNES'S CORRECTED
DISCOUNTED CASH FLOW ANALYSIS

COMPANY NAME	DIVIDEND	STOCK PRICE	PROJECTED DIVIDEND YIELD	GROWTH	COST OF EQUITY
Alliant Energy	$1.40	$39.814	3.73%	6.00%	9.7%
Ameren Corp.	$2.54	$53.011	5.14%	7.30%	12.4%
American Electric Power	$1.64	$46.773	3.72%	6.02%	9.7%
Cleco Corp.	$0.90	$25.999	3.95%	14.00%	17.9%
DPL Inc.	$1.10	$28.366	4.22%	8.88%	13.1%
Entergy Corp.	$3.00	$115.043	2.88%	10.60%	13.5%
FirstEnergy Corp.	$2.20	$67.465	3.62%	11.00%	14.6%
FPL Group	$1.64	$65.803	2.74%	9.90%	12.6%
Hawaiian Electric	$1.24	$22.291	6.04%	8.53%	14.6%
IDACORP, Inc.	$1.20	$34.131	3.73%	6.00%	9.7%
NSTAR	$1.40	$34.683	4.30%	6.50%	10.8%
Pinnacle West Capital	$2.10	$41.435	5.36%	5.73%	11.1%
PNM Resources	$0.92	$23.150	4.34%	9.13%	13.5%
Progress Energy	$2.46	$47.468	5.44%	5.04%	10.5%
Southern Company	$1.61	$36.940	4.58%	5.03%	9.6%
Westar Energy	$1.08	$25.451	4.48%	5.58%	10.1%
Average					12.1%

Notes:

Companies	=	Mr. Barnes's proxy company group.
Dividend (D)	=	Most recent quarterly dividend annualized. (*See* Value Line issues used by Mr. Barnes, dated Nov. 30, 2007, Dec. 28, 2007, and Feb. 8, 2008.)
Stock Price (P)	=	From Mr. Barnes's Schedule 16.
Projected Dividend Yield	=	Annualized dividend multiplied by the factor (1 + g) divided by stock price.
Growth (g)	=	I/B/E/S forecast of future earnings growth (*See* Mr. Barnes's Schedule 15.)
Cost of Equity (K)	=	Cost of equity using the annual version of the DCF model.

$$K = \frac{D(1+g)}{P_0} + g$$

AFFIDAVIT OF JAMES H. VANDER WEIDE

STATE OF NORTH CAROLINA)
) ss
COUNTY OF DURHAM)

On the 4 day of April, 2008, before me appeared James H. Vander Weide, to me personally known, who, being by me first duly sworn, states that he is Research Professor of Finance and Economics at the Fuqua School of Business of Duke University and also President of Financial Strategy Associates and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

James H. Vander Weide
James H. Vander Weide

Subscribed and sworn to before me this 4 day of April, 2008.

Amy C Knudsen
Notary Public

My commission expires: 2/29/2012