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Witness: Donald A. Murry
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Sponsoring Party: Empire District
Case No.:

THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY
OF
DONALD A. MURRY, Ph.D.

APRIL 2004

C. H. GUERNSEY & COMPANY
ENGINEERS - ARCHITECTS – CONSULTANTS
OKLAHOMA CITY, OKLAHOMA

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Direct Testimony
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Donald A. Murry, Ph.D.

Q. Please state your name and business address.

A. My name is Donald A. Murry. My business addresses are 5555 North Grand Blvd., Oklahoma City, Oklahoma 73112, the corporate office and 2931 Kerry Forest Parkway, Suite 202, Tallahassee, Florida 32308.

Q. By whom are you employed and in what position?

A. I am a Vice President and economist with C. H. Guernsey & Company in Oklahoma City. I am also a Professor Emeritus of Economics on the faculty of the University of Oklahoma.

Q. What is your educational background?

A. I have a B. S. in Business Administration, and an M.A. and a Ph.D. in Economics from the University of Missouri - Columbia.

Q. Please describe your professional background.

A. From 1964 to 1974, I was an Assistant and Associate Professor and Director of Research on the faculty of the University of Missouri - St. Louis. For the period 1974-98, I was a Professor of Economics at the University of Oklahoma and since 1998 I have been Professor Emeritus at the University of Oklahoma. Until 1978, I also served as Director of the Center for Economic and Management Research. In each of these positions, I directed and performed academic and applied research projects related to energy and regulatory policy. During this time, I also served on

several state and national committees associated with energy policy and regulatory matters and published and presented a number of papers in the field of regulatory economics in the energy industries.

Q. Please describe your regulatory experience.

A. Since 1964, I have consulted for a number of private and public utilities, state and federal agencies, and other industrial clients regarding energy and regulatory matters in the United States, Canada and other countries. In 1971-72, I served as Chief of the Economic Studies Division, Office of Economics of the Federal Power Commission. From 1978 to early 1981, I was Vice President and Corporate Economist for Stone & Webster Management Consultants, Inc. I am now a Vice President with C. H. Guernsey & Company. In all of these positions I have directed and performed a wide variety of applied research projects and conducted other projects related to regulatory matters. Recently, I have assisted both private and public companies and government officials in areas related to the regulatory, financial and competitive issues associated with the restructuring of the utility industry in the United States and other countries.

Q. Have you previously testified before or been an expert witness in proceedings before regulatory bodies?

A. Yes, I have appeared before the U.S. District Court-Western District of Louisiana, U.S. District Court-Western District of Oklahoma, District Court-Fourth Judicial District of Texas, U.S. Senate Select Committee on Small Business, Federal Power Commission, Federal Energy Regulatory Commission, Interstate Commerce Commission, Alabama Public Service Commission, Colorado Public

Utilities Commission, Florida Public Service Commission, Georgia Public Service Commission, Illinois Commerce Commission, Iowa Commerce Commission, Kansas Corporation Commission, Kentucky Public Service Commission, Louisiana Public Service Commission, Maryland Public Service Commission, Missouri Public Service Commission, Nebraska Public Service Commission, New Mexico Public Service Commission, New York Public Service Commission, Power Authority of the State of New York, Nevada Public Service Commission, North Carolina Utilities Commission, Oklahoma Corporation Commission, South Carolina Public Service Commission, Tennessee Public Service Commission, Tennessee Regulatory Authority, Texas Public Utilities Commission, the Railroad Commission of Texas, the State Corporation Commission of Virginia and the Public Service Commission of Wyoming.

Q. What is the nature of your testimony in this case?

A. I have been retained by The Empire District Electric Company, also referred to as "Empire" or the "Company," to analyze its current cost of capital and to recommend a rate of return that is appropriate for the Company in this proceeding.

Q. How did you proceed in developing your analysis and recommendation?

A. To put my analysis in context, I reviewed the current economic environment. Because of the importance of the level of interest rates to the cost of capital of a utility, I reviewed the current level of interest rates. I also reviewed characteristics of Empire, especially regarding measures that can help identify its financial and business risk. For example, I examined the Company's financial circumstances and compared the Company's financial statistics to those of comparable

companies. With this information as the background, I identified the Company's permanent common stock equity and long-term debt components of its capital structure. Finally, I estimated the costs of the various components of capital.

Q. Are you sponsoring any schedules with your testimony?

A. Yes. I am sponsoring Schedules DAM-1 through DAM-25.

Q. Were these schedules either prepared by you or under your direct supervision?

A. Yes.

Q. In preparing your cost of capital testimony in this proceeding, did the nature of utility regulation affect your testimony in any way?

A. Yes. Historically, the presumed presence of market power by a single franchised utility market is a principal economic rationale for utility regulation. Therefore, market pressure cannot achieve the same pricing and service results as in competitive markets. I used this as a guide for my approach to measuring the cost of capital of Empire. This is analytically appropriate because of the potential for economies of scale to be associated with providing utility service at the retail level. In general, analysts have said that the purpose of regulation is to substitute for the lack of competitive pressures in retail electric utility service.

Q. As you have characterized the rationale for regulation, what is the principal objective in setting the allowed return in a regulatory proceeding?

A. Consistent with regulatory precedent, setting an allowed return that is sufficient, but not larger than necessary, to allow a utility to recover the costs of providing service is the principal objective. Phrased differently, one also could say that

setting a "fair" rate of return on invested capital is the principal objective. Since the rate of return must be sufficient to attract and maintain capital, setting the allowed return can be a critical step in the regulatory process.

Q. What do you mean by a fair rate of return?

A. In this context, I am using the term fair rate of return to refer to a return that meets the standards set by the United States Supreme Court decision in *Bluefield Water Works and Improvement Company vs. Public Service Commission, 262 U.S. 679 (1923) ("Bluefield")*, as further modified in *Federal Power Commission vs. Hope Natural Gas Company, 320 U.S. 591 (1944) ("Hope")*. In these decisions, the rate of return is a fair return if it provides earnings to investors similar to returns on alternative investments in companies of equivalent risk.

Q. How do you interpret these legal decisions?

A. I interpret these decisions from an economic perspective. Specifically I believe that a fair rate of return is one that affords the utility a reasonable opportunity to earn a return equal to a return from investments with similar risks and uncertainties. In this way, the return will be sufficient to enable the company to operate successfully, maintain its financial integrity, attract capital, and compensate its investors for committing their funds to a risky investment.

Q. What is the appropriate capital structure for Empire in this proceeding?

A. The capital structure that is appropriate for Empire in this proceeding is the pro forma capital structure as of December 31, 2003. Empire's long-term debt is $336,496,611 or 43.89 percent of the Company's total capital. Empire has trust preferred securities totaling $48,292,848, which is 6.3 percent of the total capital.

Empire's common stock equity is $381,935,258. This is common stock equity of 49.81 percent of total capital. I have illustrated this capital structure in Schedule DAM-1.

Q. What is the embedded cost of long-term debt for Empire?

A. Empire's embedded cost of long-term debt is 7.25 percent. I have illustrated the calculation of this cost of long-term debt in Schedule DAM-2.

Q. What is the cost of Empire's trust-preferred securities?

A. The cost of the trust-preferred securities is 8.93 percent. I have illustrated the calculation of this cost in Schedule DAM-3.

Q. How did you calculate the cost of common stock of Empire?

A. I first estimated the cost of common equity of Empire using alternative methodologies. I compared results from these methods to results from similar calculations for a group of comparable companies.

Q. What methods did you use to measure Empire's cost of common stock equity?

A. In my analysis of the cost of common stock, I relied primarily on two common methods for estimating the cost of common stock. I used the Discounted Cash Flow ("DCF") analysis, surely the most common method used in rate proceedings, as one method. I compared my DCF results for Empire with the DCF results for a group of publicly traded electric utilities using a similar method. I also used the Capital Asset Pricing Model ("CAPM") to analyze the cost of common stock equity of Empire. I used the CAPM primarily as a verification of the DCF calculations. Also, I compared my CAPM results for Empire to the

results from similar calculations for the comparable group of companies. Throughout my analysis, I put these calculations in the perspective of current market conditions and the financial circumstances of Empire.

Q. Why did you think it was important to analyze the current market conditions?

A. Interpreting the results of the cost of capital measures, such as the DCF and the CAPM, requires some understanding of current market conditions and the standards for a financially healthy utility. The overall level of interest rates, for example, will directly affect the cost of capital of Empire because investors will compare the potential earnings from an investment in the utility to the return earned from a debt investment.

Q. Why did you consider it important to analyze the financial circumstances of Empire?

A. The present financial circumstances of Empire set the stage for the review of the cost of capital and the determination of an allowed return in this proceeding. The cost of capital in this case is far more important than most; Empire's financial circumstances are sufficiently precarious that accurate measurement of the cost of capital in this case is critical. I reached that conclusion after reviewing financial measures that indicated the relative risks to Empire's investors. For example, I studied financial and business risks of Empire for the purpose of determining the criteria for maintaining a financially viable utility. I also reviewed key financial statistics that would be available to knowledgeable investors that would likely affect their willingness to invest in Empire's securities.

Q. How did you select the companies that you used as comparable to Empire in your analysis?

A. I selected the comparable companies from the group of electric utility companies reported by *Value Line*. Because they are listed in *Value Line*, these utilities will all have recognized, traded common stocks. I also used criteria to select this group that would insure that the selected companies would be similar to Empire in key, relevant characteristics.

Q. What was the purpose of these criteria for selecting comparable companies?

A. To the extent possible, I was attempting to identify financially healthy electric utilities with financial and business risks, including regulatory risk, that were similar to those of Empire. Consequently, I could use these comparative companies as benchmarks in this analysis. It is reassuring when the results of the analysis of Empire are supported with results from other companies. To the extent that the results differed, I tried to determine the reason for this difference. Most of these selection factors were used to narrow the financial and business risks among the group of utilities. First, I chose only companies listed in *Value Line*. Second, I eliminated all companies that had either reduced or suspended their common stock dividend payments. Third, I narrowed the group to the smaller electric utilities, namely those with market capitalization under $5 billion. Fourth, I selected companies with common equity ratios that were higher than forty percent. Fifth, I chose companies with at least 60 percent of their revenues from electric utility operations. Finally, I eliminated those companies for which *Value*

Line forecasts negative earnings growth. By controlling for these risk factors, the effects of other risk factors will be more easily identified and evaluated.

Q. What were the results of your selection process?

A. Using this selection process, I identified a group of six electric utility companies that are comparable to Empire and useful in this analysis. This group of companies includes Central Vermont Public Service, CH Energy Group, Hawaiian Electric, MGE Energy, NSTAR and Pinnacle West.

Q. You stated previously that you evaluated the business, the regulatory and the financial risks of Empire. What did you do to analyze financial risk?

A. The primary indicator of financial risk is the proportion of outstanding debt to total capital, or conversely, the common stock equity ratio. Consequently, I reviewed the common stock equity ratios of Empire and the comparable companies over recent years.

Q. What did this comparison between Empire and the comparable companies reveal?

A. The common stock equity ratio of Empire has increased in recent years, and it is just now reaching a level that is comparable to the common equity ratios of similarly situated electric utilities. As Schedule DAM-4 demonstrates, the common stock equity that *Value Line* estimated for 2003 is 48.5 percent. The average common stock equity of the comparable companies is 51.4 percent.

Q. What did you do to analyze Empire's business risk?

A. I reviewed the financial statistics of Empire cognizant of unpredictable factors that affect potential earnings, such as demand fluctuations, sales price variability,

input price volatility, and the ability to adjust output prices for changes in input prices. These are measures of Empire's performance. As a test of the business risk of Empire relative to other electric utilities, I compared Empire's recent financial performance statistics to those of the comparable companies. I reviewed Empire's recent earnings, dividend policy and *Value Line*'s summary assessments of Empire.

Q. What did your review of the earnings of Empire reveal?

A. As Schedule DAM-5 shows, I reviewed estimates of Empire's recent earnings on common stock equity as reported by *Value Line*. Empire's common stock earnings over the past five years have averaged only 7.66 percent on equity. By comparison, the average for the companies comparable to Empire for this period was 10.66 percent on equity. The actual earnings of the comparable companies, which have always been greater than Empire's, have fluctuated little over this period.

Q. What did your investigation of dividend policies show?

A. Four of the comparable electric utilities had virtually flat dividends over the five-year period. NSTAR had a small dividend growth of 2.61 percent. Only Pinnacle West had a sizeable dividend growth, which was 6.78 percent. Empire's dividends have not increased for ten years. I have shown these flat to low dividend growth rates in Schedule DAM-6.

Q. Because many of these utilities had no dividend growth, does this indicate that Empire's financial situation has been similar to that of these comparable electric utilities?

A. No. From a review of the dividend pay-out ratios, or the percentage of common stock earnings paid in dividends, it is apparent that Empire's financial circumstances are distinctly different from those of the other companies. This is so even though this group of comparable companies had flat or low dividend growth for the most part in recent years. For example, the average dividend payout for Empire for the past five years is 125.2 percent, as shown in schedule DAM-7. By comparison, not one of the comparable utilities had a dividend payout greater than 100 percent in any year. The average dividend payout of the comparable utilities is a healthy, and common, 70.8 percent.

Q. Did you learn anything further by comparing the dividend payout ratio of Empire to those of the smaller electric companies?

A. A comparison of the dividend payout ratios for these companies shows the difference between dividend policies. These companies apparently have flat dividends because they are retaining cash from earnings for cash needs or other investments. Empire has flat or nearly-flat dividends because its earnings are flat or declining. From its payout ratio, it is clear that Empire has had difficulty even maintaining a constant dividend. In sharp contrast to Empire, the flat dividends of Central Vermont, CH Energy, Hawaiian Electric and MGE, combined with declining payout ratios, indicate that these companies are harboring cash.

Q. Do you believe that this payout ratio indicates that Empire's dividend is threatened at the current levels of return?

A. Yes. Although I am not privy to the board's deliberations regarding dividend policy, this is the obvious, logical conclusion to draw from these data.

Q. If the earnings of Empire should fall to levels that force Empire to cut its common stock dividend, do you know what the likely effects will be to the common stock value?

A. Almost certainly, a cut in dividends would drive down the price of Empire's common stock, increase the cost of common stock equity, and make it much more expensive for Empire to raise funds for any needed capital expenditures.

Q. Do you know the likely magnitude of the impact on Empire's common stock resulting from a cut in dividends?

A. Apparently, the impact on the price of common stock of an electric utility resulting from a reduction in common stock dividend can be significant. For example, from among the electric utilities followed by *Value Line,* I identified for study five utilities with positive common stock earnings that cut dividends during the years 2002 and 2003 (I selected this period because it is the post-Enron-collapse period, and markets are similar to those today). As Schedule DAM-8 shows, the average price-earnings (P/E) ratios of the utilities that cut dividends dropped sharply in the year following the cut in dividends. The average P/E the year before the cut in dividends was 16.7; the year after the dividend cut the average P/E had fallen to 12.3. From this pattern it appears that should Empire be forced to cut its dividend, it will surely face a decline in market valuations of its common stock.

Q. If Empire were to cut its dividend with this level of market response, what would be the consequences for Empire and its investors?

A. As an example, if the market price declined by this average amount, this would represent a decline of 26 percent in market value. Stated differently, this would wipe out $132 million of Empire's market capitalization. Regardless of whether this average is an accurate predictor of the magnitude of the impact to Empire, unquestionably, a cut in dividend will adversely affect Empire's ability to raise funds for capital expenditures and increase the cost of raising those funds. Of course, if the market overreacts and the market price declines with Empire's common stock becoming under valued, this can lead to other consequences. For example, this reaction could make Empire an attractive acquisition target.

Q. You mentioned that you reviewed regulatory risk as a component of business risk. What did you mean?

A. Regulatory policies are a major component of business risk for a utility because they directly impact revenues and earnings. Regulatory policies and practices set the allowed return, and they also determine the likelihood of whether a utility will achieve its allowed return. The probability that the regulatory policies that impede a utility's ability to earn sufficient returns to compete for capital is a form of regulatory risk. Regulatory practices also affect the quality of earnings, because they may determine whether earnings are received in time to meet financial obligations, or if they are cash or non-cash earnings.

Q. How do regulatory practices affect the quantity and quality of a firm's earnings?

A. The quantity and quality of a firm's earnings are affected by the timeliness and magnitude of the regulatory response to rate requests. Obviously, the allowed

return on common equity capital establishes a level of common stock earnings. This is often a publicly stated number that is available to any knowledgeable analyst, rating agency, lender or investor. Regulatory treatment of depreciation rates, recovery of fuel costs, and determination of the test-year and the lag prior to implementing rates are important factors in achieving the allowed return. Deferred recovery of funds for construction with non-cash earnings is probably the most important regulatory impact on earnings quality.

Q. As a component of business risk, did you determine how analysts regard the regulatory risk faced by Empire?

A. Regulatory Research Associates ("RRA") ranks U.S. regulatory commissions from the standpoint of risk to potential investors, and publishes its findings. The rankings are "Above Average," "Average," or "Below Average" with gradients of 1, 2, or 3, with 1 being the highest, within those ranks. RRA ranked Missouri, Average-3, below all but five other states. RRA described Missouri regulation as "restrictive" with equity returns "modestly below industry averages."[1]

Additionally, both Moody's Investor Services and Standard & Poor's have noted the regulatory environment that Empire faces. For example a Moody's report dated November 2002 stated:

> We have typically expressed more concerns about utility regulation in Missouri as compared to many other states. Among these concerns have been the tough positions often taken by the Missouri PSC with respect to the utilities' efforts to raise rates to recover higher costs of service.[2]

[1] "Missouri State Regulatory Review", Regulatory Research Associates, May 2003.
[2] "A Look at How Regulators Support U.S. Electric Utilities in States That Have Yet To Restructure", Moody's investor Service, November, 2002).

Q. What did Standard & Poor's say about Empire's regulatory environment?

A. Standard & Poor's stated:

> A challenging regulatory environment tempers the strengths of Empire's business profile. Under the jurisdiction of the Missouri Public Service Commission, Empire suffers from relatively low allowed ROEs, receives low depreciation allowances, lacks recovery for construction work in progress, and lacks a permanent fuel adjustment clause to help shield the company from its markedly increased natural gas dependence. The recent elimination of Missouri's temporary fuel and purchased-power mechanism exposes Empire to potential energy price volatility, which concerns Standard & Poor's.[3]

Q. How does this relate to regulatory risk?

A. In Standard & Poor's characterization of Empire's regulatory environment the reference to inadequate returns on common stock, the low depreciation allowances and the lack of a fuel adjustment mechanism reveals the importance of regulatory risk to the Company. Each of these factors is a product of regulatory actions affecting Empire's credit worthiness.

Q. Standard & Poor's mentioned Missouri's elimination of a "...fuel and purchased-power mechanism." Is this an important component of regulatory risk to Empire?

A. Yes, it is very important in this instance. As noted by Standard & Poor's, investors can only perceive that the lack of a fuel adjustment mechanism will increase the risk of their investment in Empire's securities. Moreover, because a fuel adjustment clause is common in the industry, its absence becomes a noteworthy concern to a potential investor. Only Utah, Vermont and Missouri

[3] "Summary: Empire District Electric Co.," Standard & Poor's: Ratingsdirect, January 20, 2004.

prohibit fuel adjustment clauses according to a recent report by the Regulatory Research Associates.[4]

Q. Did you review any summary measures of Empire's business risk?

A. Yes, I reviewed the *Value Line* measures of Safety Rank and Timeliness, and I compared those to the rankings for the comparable companies.

Q. What did this comparison show?

A. These rankings confirm that Empire is in worse financial circumstances than the other small, comparable electric utilities. As Schedule DAM-9 illustrates, *Value Line* gave Empire a "Safety Rank" of 3, which is equivalent to the average Safety Rank for all common stocks (A rank of 1 is the highest). Among these comparable, healthy, small electric utilities, only Central Vermont has a Safety Rank as low as 3. By comparison, *Value Line* gave CH Energy, MGE Energy, NSTAR and Pinnacle West a Safety Rank of 1. Schedule DAM-10 shows that *Value Line* ranked Empire a 5 for "Timeliness." This means that *Value Line* ranks Empire in the bottom group of all stocks for "...probable **price performance of the stock within the next 12 months."** Together these two measures demonstrate that independent financial analysts consider Empire a relatively high-risk common stock investment.

Q. Do you know whether Empire has earned its allowed return on common stock equity in recent years?

[4] "Special Report: Fuel and Wholesale Power Cost Recovery," Regulatory Research Associates, May 7, 2003.

A. As Schedule DAM-11 shows, Empire has not earned its most recently litigated (in Case No. ER-2001-299) allowed return on common stock of 10.00 percent.

Q. You said that you used the DCF method to measure the cost of common stock of Empire. Can you explain your rationale for the use of the DCF theory?

A. I used the DCF theory, a straight-forward, theoretically sound method, as my primary market-measure method for measuring the cost of capital. The DCF employs investors' expectations of dividends and earnings and market price information to measure the value that an investor places on anticipated returns. Since an investor expects a return on investment in the form of dividends and capital gains, the market price should equal the present value of that stream of anticipated earnings. Using these market relationships, we can estimate the investor's opportunity cost of his investment funds.

Analytically, we can express the investor's required rate of return as

$$K = D/P + g,$$

where K = cost of common equity,
D = dividend per share,
P = price per share and
g = rate of growth of dividends, or alternatively, common stock earnings.

In this expression K is a capitalization rate required to convert the stream of future returns into a current value.

Among the benefits of the DCF method is that it is widely recognized, accepted by analysts, and commonly used in utility cost of capital

proceedings. The problems associated with the use of the DCF can be managed by careful analytical procedures.

Q. What problems are you referring to?

A. Although it is theoretically sound, the application of the DCF method may create problems, and the analysts' interpretation of the results are extremely important. The selection of relevant data, especially when assessing the investor expectations, is a critical step. For example, in the case of Empire and the other small electric utilities with flat dividends, the dividend history has very limited value in a DCF analysis. Because of the additional risk of a common equity investment, relative to an investment in a debt security, common stock investors will necessarily look to the potential for earnings growth and capital gains. This also means, if the DCF method is used without professional understanding and judgment, the results from mechanical calculations can produce grossly misleading interpretations.

Q. What steps did you take to estimate investor expectations in your DCF analysis?

A. I reviewed the historical dividends and earnings as well as the forecasted dividends and earnings, but I focused primarily on the earnings forecasts for the reasons mentioned previously. Because of Empire's flat dividends and inordinately low common stock earnings in recent years, the historical data will produce misleading measures of the cost of common equity required by investors. Investors form their expectations of future earnings and dividends from a variety of sources, but in the case of Empire, prudent investors will necessarily focus on

the future prospects to determine the likelihood of any improvement from the past. Moreover, and more specifically, with the dividend history and the high payout ratio of Empire, prudent investors will look beyond dividend levels to the potential earnings stream. Viewed alternatively, a corporate bond also pays a fixed annual return with less risk than Empire's common stock, and investors will necessarily compare the likelihood of dividends to the more certain interest on bonds.

Q. You stated that you reviewed both historical and forecasted growth rates. What were the results of this review?

A. As Schedule DAM-12 shows, the historical and forecasted dividend growth rates of Empire and the comparable companies are very low. In addition to Empire, which experienced a decline in earnings per share over the five-year period of 3.5 percent, Central Vermont and CH Energy also had declines in earnings per share over the period. In contrast to the dividend history and forecasts, a forecasted growth in earnings has an increased significance as potential capital gains.

Q. How should an analyst compensate for the changes in the relative significance to various investors of dividends and earnings growth?

A. Because investors must look beyond Empire's flat dividends to prospective future earnings and capital gains, an analyst must do likewise. The analyst should focus on earnings growth. In current markets, earnings growth estimates produce a DCF estimated cost of capital that is a more reliable measure of the cost of common stock equity of a utility.

Q. What common stock prices did you use in your DCF analysis?

A. I used recent common stock prices to reflect current market values and stock prices over a longer period to give a longer-term perspective. Specifically, I used prices for the past 52-weeks as reported by the *Wall Street Journal.* I also used the current prices from a recent two-week period as reported in *YAHOO! Finance*. In this way, I identified the cost of capital variations because of price fluctuations, and I also identified the cost of capital using current market values. For comparative purposes, I developed similar DCF analyses for both Empire and the comparable companies using these data.

Q. Can you explain the results of your DCF analysis?

A. Yes. For the reasons stated and because of the flat dividends for Empire, the DCF produced extremely low, unreliable cost of common stock estimates. In fact, these results are so low that they rival the returns from corporate bonds and are not credible estimates. A fluke result due to constant dividend levels and a mechanical application of the DCF does not realistically represent investors' anticipated returns. I have illustrated these results, which ranged between 5.70 and 7.53 percent for Empire, using the two price levels in Schedules DAM-13 and DAM-14. A combination of historical earnings per share growth rates and forecasted growth rates for Empire resulted in somewhat more representative DCF results, ranging between 7.16 percent to 8.99 percent. By comparison, the cost of Empire's trust preferred securities is even higher at 8.93 percent. Again, contrary to the forward-looking expectations of investors and the requirements of regulation, these results are inordinately influenced by the low historical growth rates. I have illustrated these results in Schedules DAM-15 and DAM-16.

Q. What did your DCF calculations using forecasted common stock earnings per share show?

A. I have illustrated these results in Schedules DAM-17 and DAM-18. Obviously the DCF measured cost of common stock for Empire is higher than any of the comparable, small electric utilities. The high end of the cost of capital based on prices over the past year was 13.53 percent; the high end of the cost of capital in the current markets was 11.88 percent.

Q. Can you summarize your DCF analysis, and how you interpreted these results in reaching your recommendation?

A. Yes. I have summarized the ranges of results of all of my DCF calculations in Schedule DAM-19. I used the DCF results as a primary estimate of the cost of capital. In doing so, I concentrated on the high end of the current cost of capital using the forecasts of common stock earnings. Although I took into account the wide divergence of the estimated cost of common stock due to price fluctuations over the past year, Empire's financial situation leaves no margin for error in this case. For this reason, and the nature of the DCF method itself, the high end of the range of estimates is more realistic for Empire.

Q. You said that you performed a CAPM analysis. Can you explain the CAPM model?

A. Yes. The Capital Asset Pricing Model, or CAPM model, measures the risk differential between a given security and the market as a whole. The diversification of investments reduces risk to the investor. Because some risk is

non-diversifiable, e.g., the market risk, investors remain exposed to that market risk. The theoretical CAPM model is expressed as:

$$K = R_F + \beta (R_M - R_F)$$

Where:
- K = the required return,
- R_F = the risk-free rate,
- R_M = the required overall market return and
- β = beta, a measure of security risk relative to the overall market.

In this expression, the value of market risk is the differential between the market rate and the risk-free rate. Beta is the relative measure of the risk of a security to the market as a whole.

Q, Are there special analytical benefits or uses for the CAPM method?

A. Yes. By estimating the risk differential between an individual security and the market as a whole, one can measure the relative cost of that security compared to the market as a whole. Albeit a relatively less precise measurement method than the DCF, it provides a longer-term perspective of the cost of common stock.

Q. What are the problems associated with using the CAPM analysis for such purposes as utility ratemaking?

A. For ratemaking purposes, some important concerns arise. The betas used in a CAPM analysis probably do not capture all of the risks associated with an individual stock, and they understate the returns of smaller firms. For example, for the past two decades the academic literature, starting with R. W. Banz[5] and M.

[5] Banz, R.W., "The Relationship Between Return and Market Value of Common Stock," *Journal of Financial Economics*, March 1981, pp. 3-18.

R. Reinganum[6] has been replete with the evidence showing this small firm bias. In an early study, Reinganum examined the relationship between the size of the firm and its P/E ratio, and he found that small firms experienced average returns greater than those of larger firms with equivalent betas, or measures of systematic risk. Banz confirmed the finding that beta does not explain all of the returns associated with smaller companies. Fama and French described these findings about size in the following manner: "Confirming Banz (1981), sorts on size and beta ...consistently reject the central CAPM hypothesis that beta suffices to explain expected return."[7]

Ibbotson Associates, in a more recent study of the relationship between size and return described this finding, as follows:

> One of the most remarkable discoveries of modern finance is that of the relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[8]

Q. Is there a way to account for an understatement of the CAPM cost of capital estimates for small companies?

A. Yes. To account for this empirical bias in the CAPM that leads to understating the cost of capital of smaller companies, Ibbotson Associates prescribed quantitative adjustments when performing the CAPM analysis. In my CAPM analysis, I applied the adjustment recommended by Ibbotson Associates.

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[6] Reinganum, M. R., "Misspecification of Capital Asset Pricing: Empirical Anomalies Based on Earnings, Yields, and Market Values," *Journal of Financial Economics*, March 1981A, pp. 19-46.
[7] Fama, Eugene F., and Kenneth R. French, "The CAPM is Wanted, Dead or Alive," *The Journal of Finance*, Vol. LI, No. 5, pp. 1947-1058.
[8] *Stocks Bonds, Bills, and Inflation: 2003 Yearbook Valuation Edition*,, Ibbotson Associates, p. 117.

Q. How did you use the CAPM cost of capital result in your analysis?

A. The CAPM, a risk premium method, is less sensitive to market movements than the DCF method, and I used it to amplify and verify the results of my DCF analysis. The CAPM, which is a risk premium method, provides a very useful comparison to the DCF measured cost of common stock. By using the measured differential between debt and common equity returns as a benchmark, it produces relatively stable estimates of the cost of capital over time. Specifically, I developed two slightly different cost of capital measures based on the CAPM theory.

Q. What did your CAPM analysis of Empire show?

A. As Schedules DAM-20 and DAM-21 show, the estimated costs of the common stock for Empire are 10.97 percent and 11.12 percent from these two methods.

Q. What did you do to interpret the results of your DCF and CAPM analyses?

A. To put these results in perspective, I reviewed the current market conditions, the nature of the DCF and the CAPM techniques and special risk considerations of Empire.

Q. You mentioned previously that you reviewed market information. How did that affect your analysis and your cost of capital recommendation?

A. I reviewed current market statistics as a backdrop for reaching a recommended cost of capital for Empire in this proceeding. Specifically, I reviewed financial information concerning market conditions and factors affecting interest rates. For example, Schedule DAM-22 illustrates the market influences of the recent Federal Reserve policy of maintaining low short-term interest rates. This schedule shows

a comparison among the 90-Day Treasury bill rate, the 30-Year Treasury Bond rate and the Aaa Moody's Corporate Bond rate. This chart shows that the Federal Reserve's policies have landed more squarely on the short-term rates than the long-term rates. The long-term rates that have a long-term horizon are the most relevant for a company like Empire selling common stock and bonds and competing for funds in the national market. The short-term securities with a shorter time horizon are less relevant.

Q. You mentioned that Empire must compete in the national market for funds. Please explain.

A. Empire must raise funds from investors in the national capital markets, more commonly referred to as "Wall Street." In this arena, the returns and conditions placed on Empire's securities gauge their attractiveness to investors. This is at least a national market where Empire's securities must compete for funds. The economic characteristics of Empire's service territory, such as population growth, economic activity, and personal income, are important to these national investors only when they enhance or hinder the likelihood of the investors achieving their expected returns.

Q. Did you consider other market information?

A. I also compared the performances of the Dow Jones Industrial and Utilities Indices for the past year. As Schedule DAM-23 shows, the performance of these two indices is quite similar. Because deregulation is moving ahead in all utility sectors, investors are undoubtedly viewing the risks of the two groups as more similar that in the past.

Q. Did you consider any other, related market information?

A. Yes. In the post-Enron-collapse period, the rating agencies have reconsidered the role of corporate debt, its impact on a company's viability and the adequacy of coverage. In this context I evaluated the effect of the level of corporate debt on bond ratings, plus the identifiable reactions by the rating agencies. For example, I noted Moody's description of Empire's credit worthiness.

Q. What has Moody's said about the credit situation of Empire?

A. In a recent report, describing Empire's inadequate cash from operations relative to capital expenditures, Moody's stated, as follows:

> "The liquidity profile of Empire District Electric Company (EDE) has been characterized by negative free cash flow in recent years, reflecting heavy cash outflows for capital expenditures, modest debt maturities, and a reliance on short-term instruments to partially finance its capital expenditures."[9]

Q. What is Moody's rating of Empire's senior secured debt?

A. Moody's has rated Empire's debt as Baa1 with "a negative outlook." Moody's based this rating on

> ...relatively low interest coverage ratios and significant leverage in its capital structure relative to its rating category. For the past three years cash flow from operations was insufficient to cover capital expenditures...[10]

Q. In its reporting, has Moody's indicated the cause of Empire's cash flow problems?

[9] "Liquidity Risk Assessment: Empire District Electric Company (The)," Moody's Investors Service: Global Credit Research, December 30, 2003.
[10] Moody's, ibid.

A. Yes. Moody's states: "Regulatory lag in cost recovery has created financing needs, which were met mainly through higher short-term debt borrowings."[11]

Q. Has Moody's described what is necessary to improve its debt ratings?

A. Yes, but the Moody's report was discouraging about any prospective improvement in the credit rating. It stated, "While the company's debt protection measure remains below the average for the rating category, overall business risk remains low. Consistent improvement in financial performance is required to stabilize the rating."[12] Further, it concluded pessimistically, "The negative outlook precludes any near term upgrade in EDE's credit rating."[13]

Q. Did you review any other reports by rating agencies?

A. Yes, I reviewed a similar report by Standard & Poor's. Standard & Poor's linked the recovery of fuel and power costs to Empire's credit worthiness, "Timely recovery of prudently incurred fuel and purchased-power expenses is important for Empire's credit quality."[14] The rating agencies have definitely linked Empire's credit worthiness to adequate earnings, cash flow and the risks associated with no fuel adjustment provision.

Q. You mentioned previously that in reaching a recommendation for an allowed return for Empire that you considered the nature of the DCF method. What did you mean by that?

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[11] Moody's, ibid.
[12] "Opinion Update: Empire District Electric Company (The)," *Moody's Investors Service: Opinion Update*, December 30, 2003.
[13] Ibid.
[14] "Summary: Empire District Electric Co.," *Standard & Poor's: Ratings direct*, January 20, 2004.

A. The DCF method, because of its theoretical basis, estimates the marginal cost of common stock equity to the Company. By its very nature, it is an estimate of the minimal return necessary to attract marginal, or incremental, investment in the common stock equity. The method does not account for unforeseen influences that may inhibit the ability of a utility to earn its allowed return. It has no cushion in this return to assure that the regulated company will earn its allowed return. For Empire, this is critical because its financial situation precludes any margin for error.

Q. In your experience, is it common for regulators and analysts to recognize this characteristic of the DCF method?

A. Yes, it is. Regulators and analysts often use adjustments to compensate for the marginal cost nature of the DCF adjustment to compensate for the market impact from the issuance of common stock. For example, some analysts specifically apply a flotation adjustment. I did not apply a specific flotation adjustment; however, I did look to the higher end of my current DCF calculations for a recommended return in this proceeding for this reason.

Q. In general, can you characterize how you reached your recommended return in this proceeding?

A. In developing my recommended return for Empire's common stock, I relied primarily on the results from the DCF analyses using forecasted earnings per share information and current market prices. Because of the relatively high risk of Empire and the marginal-cost nature of the DCF methodology, I looked to the high end of this range. I used the CAPM analysis primarily as a verification and

check on my DCF analysis. When reviewing these DCF and CAPM calculations, I evaluated all of these analyses in the context of current market conditions. Finally, I reviewed the allowed returns in 2003 for electric utilities in states contiguous to Missouri to assure that my recommendation would be consistent with the practices of other regional regulatory agencies.

Q. What were the allowed returns for electric utilities in 2003 in contiguous states?

A. *Public Utilities Fortnightly* identified three allowed returns in its November 15, 2003 issue in cases in states contiguous to Missouri. The Illinois Commerce Commission issued an order in March 2003 with an allowed return on common stock equity of 11.72 percent for Commonwealth Edison. The Iowa Commerce Commission issued an order in April 2003 with an allowed return on common stock equity of 11.116 percent for Interstate Power & Light Company. The Oklahoma Corporation Commission issued an order July with an allowed return on common stock equity of 11.27 percent for Empire.

Q. What is your recommended rate of return on common stock in this proceeding?

A. Taking into account all of the relevant information, including Empire's present financial condition, I am recommending an allowed return on common stock equity of 12.0 percent in this proceeding.

Q. Considering the somewhat lower approved allowed returns in the states contiguous to Missouri mentioned above, do you believe that your recommendation is consistent with these allowed returns?

A. Yes, my recommendation is definitely in line with these allowed returns for electric utilities in Illinois, Iowa and Oklahoma. Each of these states has a fuel adjustment clause, and my recommendation is consistent with the relative business risks in these states.

Q. What is your recommended cost of capital for Empire in this proceeding?

A. The total cost of capital for Empire in this proceeding is of 9.73. I have illustrated this calculation in Schedule DAM-24.

Q. Did you test the adequacy of your recommendation?

A. Yes. I reviewed the after-tax interest coverage ratios for Empire and the comparable companies. I used the coverages of the comparable companies as benchmarks for comparison. I have illustrated the prospective after tax interest coverage for Empire at my recommended return in Schedule DAM-25. The after-tax coverage of Empire at a 12.0 percent return on common stock is 3.05 times. This is equivalent to the average coverage of 3.09 for the comparable companies. This comparison confirms that my recommendation is adequate. It also confirms that my recommendation is not excessive. Given the financial circumstances of Empire relative to these other comparable companies, this measure of Empire's proposed coverage to the coverages of the comparable small utilities shows that my recommendation is even conservative.

Q. Does this conclude your direct testimony at this time?

A. Yes, it does.