**AmerenIP Exhibit 12.0E**

**ILLINOIS COMMERCE COMMISSION**

**DOCKET NO. _____**

**DIRECT TESTIMONY**

**OF**

**KATHLEEN C. MCSHANE**

**SUBMITTED ON BEHALF**

**OF**

**ILLINOIS POWER COMPANY**
**d/b/a AMERENIP**

**JUNE 2009**

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## I. INTRODUCTION

### A. Witness Identification

**Q. Please state your name and business address.**

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

**Q. By whom are you employed and in what capacity?**

A. I am President of and Senior Consultant with Foster Associates, Inc., an economic consulting firm.

**Q. Please provide your educational and employment history.**

A. I hold a Masters in Business Administration with a concentration in Finance from the University of Florida (1980) and the Chartered Financial Analyst designation (1989). I have testified on issues related to cost of capital and various ratemaking issues on behalf of local gas distribution utilities, pipelines, electric utilities and

telephone companies, in more than 190 proceedings in Canada and the U.S. My professional experience is provided in AmerenIP Exhibit 12E.

### B. Purpose, Scope and Identification of Exhibits

**Q. What is the purpose of your direct testimony?**

A. I have been asked to render an opinion on the fair rate of return on equity that would be applicable to the electric utility operations of Illinois Power d/b/a AmerenIP. My analysis and conclusions regarding the fair return follow; the statistical support for the studies I have conducted is contained in AmerenIP Exhibit 12E, containing Schedules E-1 to E-11.

## II. SUMMARY OF CONCLUSIONS

**Q. What were the key factors considered in conducting your analysis and arriving at your recommendation?**

A. My analysis and recommendation took into account the following considerations:

(1) The allowed return on equity for AmerenIP's electric utility operations should reflect the risk profile and cost of equity of comparable electric utilities so as to provide a return commensurate with returns in other enterprises with corresponding risks. A sample of electric utilities serves as the comparable group for AmerenIP's electric utility operations.

(2) In arriving at a recommended return, no single test result should be given exclusive weight. Each of the various tests employed provide a different perspective on a fair return. Each test has its own strengths and weaknesses, which may vary with both the business cycle and stock

market conditions. In the end, the governing principles of *Bluefield*[1] and *Hope*[2], require that a utility be allowed the opportunity to earn a return commensurate with those of enterprises of comparable risk.

(3) For the purpose of determining a fair return on equity for a utility, a critical factor that needs to be recognized is that the cost of capital is determined in the capital markets. The cost of capital estimates reflect the market value of the firm's capital, both debt and equity. While the DCF and risk premium tests estimate the return required on the market value of common equity, regulatory convention applies that return to the book value of the assets included in rate base. The determination of a fair return on book equity needs to recognize that distinction and the resulting differences in financial risk.

(5) In principle, the comparable earnings test is most compatible with regulation on an original cost book value rate base. For purposes of this testimony, I have used the comparable earnings test results to demonstrate the reasonableness of the recommended return in relation to the level of returns being earned by relatively low risk unregulated companies.

(6) The results of the DCF and equity risk premium tests used to estimate a fair return for AmerenIP's electric utility operations are summarized below.

[1] *Bluefield Water Works & Improv. Co. v. Public Serv. Comm'n of West Virginia*, 262 U.S. 679 (1923).

[2] *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

**Table 1**

| | Cost of Equity | ROE Adjusted for AmerenIP's Equity Ratio |
|---|---|---|
| **DCF** | | |
| Constant-I/B/E/S | 13.6% | 13.6% |
| Constant-Sustainable Growth | 11.8% | 11.8% |
| Three-Stage | 12.4% | 12.4% |
| **Equity Risk Premium** | | |
| CAPM Forward | 11.2% | 12.4% |
| CAPM Historic | 10.1% | 11.1% |
| Historic – Utility vs. risk-free rate | 11.1% | 11.1% |
| Historic – Utility vs. Baa-rated public utility bonds | 11.5% | 11.5% |
| DCF-based RP vs. Baa-rated public utility bonds | 11.8% | 12.8% |
| **Recommendation** | | **12.25%** |

The tests indicate that the cost of equity is approximately 11.75% based on all of the tests performed. On average, the difference between AmerenIP's 44.1% common equity ratio and the market value common equity ratios of the sample of companies over the relevant periods of analysis results in an upward adjustment of 50 basis points to the 11.75% cost of equity required for differences in financial risk between AmerenIP and the proxy electric utilities. I recommend that the allowed return on equity for AmerenIP's electric utility operations be set at 12.25%.

## III. KEY CONSIDERATIONS FOR A FAIR RETURN ON EQUITY

**Q. Please explain the importance of the allowed return on equity.**

A. The allowed return on equity is one of the most critical elements of the revenue requirement. The allowed return on equity reflects the cost of equity capital. The cost of equity capital is a real cost to the utility. The return on equity capital

represents the compensation investors require to make available the funds necessary to build, grow and maintain the infrastructure necessary to deliver services essential to the economic well-being of a region.

A just and reasonable return on the capital provided by investors not only fairly compensates the investors who have put up, and continue to commit, the funds necessary to deliver service, but benefits all stakeholders, especially ratepayers. A fair and reasonable return on the capital invested in a utility provides the basis for attraction of capital for which investors have alternative investment opportunities. Fair compensation on the capital committed to the utility provides the utility with the financial means to invest in the infrastructure for the supply of energy that is required to support long-term growth in the underlying economy, to comply with the requirements that ensure that the production of needed energy is not harmful to the environment, and to pursue technological innovations to meet the future needs of a vibrant economy.

An inadequate return, on the other hand, undermines the ability of a utility to compete for investment capital. Moreover, inadequate returns act as a disincentive to expansion within the service area, may potentially degrade the quality of service or deprive existing customers from the benefit of lower unit costs which might be achieved from growth. In short, if the utility is not provided the opportunity to earn a fair and reasonable return, it may be prevented from making the requisite level of investments in the existing infrastructure in order to reliably provide utility services for its customers.

The electric utility industry in North America is at the beginning of a major capital expenditure cycle, driven by long-term demand growth, efficiency and new technology (e.g., smart grid) investments, reliability and compliance with environmental standards. In its 2008 *World Energy Outlook*, the International Energy Agency estimated that between 2007 and 2030 close to $4.3 trillion in investment would be required by the electricity ($2.6 trillion, of which over $1.3 trillion is transmission and distribution) and gas transmission and distribution ($1.6 trillion) industries in North America.[3]

The Ameren utilities will be competing for capital in markets that may be characterized by an unprecedented requirement for regulated infrastructure capital. In contrast to the electric utilities' financial position during the last major capital expenditure cycle in the 1970s and 1980s, when the utilities benefitted from credit ratings in the A/AA ratings categories, the average rating for the industry is currently in the BBB category. While BBB ratings are still investment grade, they provide less financing flexibility and expose the utilities (and their ratepayers) to significantly higher costs of capital than available to companies with stronger ratings when the markets are strained, as recent financial market conditions have demonstrated. Over the past 18 months, the spread between the cost of long-term debt for BBB and A rated utilities has exceeded 150 basis points, compared to the historic average of less than 50 basis points. The higher cost of debt capital incurred today will persist over the life of the issued capital, underscoring the importance of achieving and consistently maintaining strong

[3] Approximately $19 trillion world-wide (Table 2.4).

financial parameters. The ability to earn a fair return on equity is critical to the ability to achieve and maintain strong credit metrics and to access capital on reasonable terms and conditions even when capital markets are under pressure.

**Q. How do you ensure that the allowed return provides fair compensation to investors for committing their equity capital to the utility?**

A. To ensure that the allowed return fairly compensates investors for committing equity capital, the utility must be given the opportunity to:

1. earn a return on investment commensurate with that of comparable risk enterprises;
2. maintain its financial integrity; and,
3. attract capital on reasonable terms.

These standards arise from United States Supreme Court precedents,[4] and have been echoed in numerous regulatory decisions across North America.

[4] In *Bluefield*, 262 U.S. at 692, for example, the Court stated,

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties

In *Hope*, 320 U.S. at 603, Justice Douglas, writing for the Court, stated,

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. . . . By that standard the return on equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

**Q. Please explain the implication of "the opportunity to earn a return on investment commensurate with that of comparable risk enterprises".**

A. This criterion is at the heart of the "opportunity cost principle". It means that the fair return must be determined by estimating the return investors would receive if they committed their funds to alternative investment opportunities with comparable risks to AmerenIP's electric utility operations. It means that any estimate of the cost of equity capital must look to comparable risk enterprises and the returns available thereon.

**Q. Does the need to look to comparable risk companies mean that each utility in a sample of proxies must exhibit identical risk characteristics to those of AmerenIP?**

A. No. Each utility will have risk characteristics that are unique. However, on balance, the level of total risks (business plus financial) should be reasonably comparable.

**Q. How have you selected comparable risk enterprises for this purpose?**

A. I selected a sample of 29 electric utilities according to the criteria delineated in Section IV.B.3 of this testimony.

**Q. Reliance on a sample of electric utilities as a proxy for AmerenIP's electric utility operations implies that the latter are of similar risk to the proxy sample. How does AmerenIP's risk compare to that of the selected sample of electric utilities?**

A. It is somewhat higher than that of the selected sample of electric utilities.

AmerenIP's current ratings are below both the average rating for the U.S. electric industry of BBB from S&P[5] and Baa2 by Moody's[6] as well as below the average and median ratings by these agencies for my proxy sample of utilities (S&P average and median of BBB+ and BBB; Moody's average and median of Baa2).

Moody's established AmerenIP's Ba1 rating in March 2007 following the passage of rate freeze legislation in both houses of the Illinois legislature. The rating was confirmed following the August 2007 negotiated rate settlement which, among other provisions, provided $1 billion in rate relief over four years to the state's electric customers, replaced the auction process with a power procurement process to be administered by the newly created Illinois Power Agency, and provided for recovery of a utility's costs of procuring power and energy.

Moody's Ba1 rating was affirmed again in August 2008. At that time Moody's stated that the rating "reflects last year's negotiated rate settlement agreement that greatly reduced the possibility of a rate freeze being implemented in Illinois and the stabilized political and regulatory environment that followed that settlement."[7] However, Moody's declined to increase the rating at the time citing continued concerns with the following factors:

[5] S&P, *Industry Report Card: U.S. Electric Utility Sector Performed Well in First Quarter of 2009*, March 30, 2009.
[6] Moody's, *Moody's Global Infrastructure Special Comment: U.S. Investor-Owned Electric Utilities*, October 2008.
[7] Moody's, *Credit Opinion: Illinois Power*, August 15, 2008.

- "Lingering political and regulatory uncertainty in a state that narrowly avoided subjecting its investor owned electric utilities to a rate freeze in 2007";
- "Execution risk in the implementation of new power procurement procedures in Illinois";and
- "Financial coverage metrics that have been at or below Moody's investment grade parameters in both 2007 and 2008."[8]

AmerenIP is currently rated Ba1 by Moody's and BBB- by S&P. S&P raised AmerenIP rating from BB to BBB- prior to the September 2008 ICC decision (Docket 07-0585 *et al.* Cons) approving electric rate increases for the Ameren utilities.[9] However, the move anticipated that the decision would be "reasonably supportive of investment grade credit quality."[10] At the same time, S&P revised the business profile for AmerenIP to "Strong" from "Satisfactory", stating the "satisfactory business profile for the relatively low-risk transmission and distribution businesses of IP and CIPS was solely a function of the highly politicized environment in Illinois, which appears to have diminished".[11] AmerenIP's "Strong" business profile score is lower (i.e., higher business risk) than the average business profile score of "Excellent" assigned to the electric

[8] *Ibid*.

[9] Fitch also upgraded AmerenIP to BBB- in October 2008 reflecting expectation of improvement in the company's earnings and cash flow measures following the September 2008 Illinois regulatory decision.

[10] S&P, *Research Update: Ameren Corp.'s Illinois Subsidiaries Upgraded to Investment Grade*, September 11, 2008.

[11] Although both S&P and Moody's acknowledge the ratings outlook reflects the improvement in the Illinois political environment, additional political intervention represents a risk to the rating. S&P, *Central Illinois Public Service Co.*, February 27, 2009 and Moody's, *Credit Opinion: Central Illinois Public Service Company*, August 15, 2008.

utilities which comprise my proxy sample used to estimate the cost of equity (AmerenIP 12E, Schedule E-3, page 1 of 2).

Based on the above, I consider AmerenIP to be a higher than average risk utility, while the selected sample of proxy utilities is of approximately average risk. I have made no adjustment to the cost of equity estimates of the proxy sample to recognize AmerenIP's relatively higher risk; that is, I have relied on the sample utilities' cost of equity as a measure of the opportunity cost of equity for AmerenIP. Since both the median business risk profile and debt rating of the proxy group are higher than those of AmerenIP, on balance, the sample's cost of equity is a conservative proxy for that of the AmerenIP's electric utility operations (as adjusted for financial risk differences as required, discussed in Section V.D.2).

**Q. With respect to the capital structure that AmerenIP proposes to use for ratemaking purposes, how does it compare to the book value capital structures of the proxy electric utility sample?**

A. AmerenIP is proposing to use its March 31, 2009 capital structure for ratemaking purposes. The proposed common equity ratio of 44.1% is within the range of fiscal year-end 2008 book value equity ratios maintained by the proxy sample of electric utilities; see AmerenIP Exhibit 12E, Schedule E-3).

**Q. In your opinion, is AmerenIP's proposed capital structure reasonable for ratemaking purposes?**

A. Yes. In principle, the actual capital structure should be relied upon for ratemaking purposes, except under unusual circumstances (e.g., where the capital structure is demonstrably out of line with the capital structures maintained by the industry).

## IV. ECONOMIC AND CAPITAL MARKET TRENDS

**Q. Please summarize the recent trends in, and forecasts for, the key economic and capital market indicators that bear on the cost of capital environment.**

A. The sections below discuss the trends in the economy, interest rates, and equity markets, both for the market generally and for electric utilities specifically.

### A. Economic Conditions

The U.S. economy is currently facing the worst financial crisis since the Great Depression. As a result, the U.S. economy is in a deep recession that is expected to last for an extended period of time.

The roots of the financial crisis can be traced to the search for higher yield investment products in a period of stable markets and low credit spreads, leading to excessive lending to borrowers with poor credit (subprime mortgages), which in turn fueled the housing market bubble. The associated high risk mortgage loans were securitized, given relatively high credit ratings, and the resulting structured financial projects were spread throughout the global financial system. In early 2007, the subprime mortgage market began to unravel. Mortgage delinquencies rose, large mortgage lenders began facing increasingly difficult financial conditions, including bankruptcy, hundreds of mortgage-backed

securities were downgraded, institutional holders' confidence in the ability to value the securities eroded and confidence in global financial institutions with significant exposure to asset-backed securitized products began to deteriorate. A liquidity crunch emerged in world financial markets, as the market for asset-backed commercial paper (ABCP) dried up.

As the markets became increasingly nervous, and credit began to dry up, the Federal Reserve stepped in, attempting to restart the flow of credit. Between December 2006 and December 2007, the federal funds rate (the rate at which banks lend to each other) was lowered three times. During the first six months of 2008, in addition to lowering the federal funds rate four more times, the Federal Reserve implemented other measures aimed at maintaining an orderly financial system, including the creation of lending facilities and increased swap lines with other central banks.

Efforts by the Federal Reserve to stem the global financial crisis were unsuccessful. By the end of the third quarter of 2008, the crisis had reached full-blown proportions, with the failure, merger, or conservatorship of several large United States-based financial firms. For example, in early September, the Federal Housing Finance Agency (FHFA) created to regulate Fannie Mae, Freddie Mac and the 12 Federal Home Loan Banks, placed Fannie Mae and Freddie Mac in government conservatorship. In September, Lehman Brothers Holdings, the fourth largest U.S. investment bank, having failed to elicit either government support or a buyer, filed for Chapter 11 bankruptcy protection. On September 16th

the Federal Reserve authorized $85 billion to shore up American International Group (AIG). At the end of the month, the Office of Thrift Supervision closed Washington Mutual Bank.

On October 14, 2008, the Treasury announced the Troubled Asset Relief Program (TARP) designed to purchase capital in financial institutions under the authority of the Emergency Economic Stabilization Act of 2008. By the end of December 2008, the U.S. Treasury held a stake in more than 200 financial institutions. By this time, the effects of the crisis had penetrated other industries, including the U.S. auto industry. Loans from TARP of over $17 billion were approved for the ailing General Motors and Chrysler Corporations.

On December 1, 2008, the National Bureau of Economic Research (NBER) announced what many had long believed, that the US economy, after peaking in the 4$^{th}$ quarter of 2007, had entered into recession. Despite further reduction in the federal funds rate to 1.00% in October 2008, the economy failed to respond to the previous monetary and fiscal policy initiatives. As a result, following the NBER's announcement, the Federal Reserve reduced the federal funds rate to the unprecedented level of 0-0.25% in mid-December, citing deterioration in labor market conditions, the declines in consumer spending, business investment, and industrial production, the strained financial markets and the tight credit conditions. Real growth dropped sharply in the fourth quarter of 2008 (-6.3%), its biggest decline since the 1980-1981 recession.

The prospects for 2009 are dim; real growth is expected to be negative for the

year (-2.6%). Although the consensus of economists expects growth to turn positive by the 3rd Quarter of 2009, real GDP growth is not anticipated to exceed 2% until 1st Quarter of 2010, or to exceed 3.0% until 4th quarter of 2010. Thus while the economy is expected to gradually pull out of recession, the recovery is not expected to be either rapid or robust.

The table below provides a brief summary of the most recent actual and consensus forecast of economic indicators that are relevant to the cost of capital environment.

**Table 2**

| | 2008 (Actual) | Consensus Forecasts | | | |
|---|---|---|---|---|---|
| | | 2009 | 2010 | 2009-2013 | 2011-2020 |
| Economic Growth (Real GDP) | 1.1% | -2.6% | 1.8% | 1.8% | 2.9% |
| GDP Chained Price Index | 2.2% | 1.3% | 1.2% | 1.7% | 2.2% |
| Inflation (CPI) | 3.8% | -0.7% | 1.6% | 1.5% | 2.5% |

Source: Blue Chip *Economic Indicators*, April and March 2009

As the financial crisis spread, investors sought a safe haven in government securities. The "flight to quality" put downward pressure on 30-year Treasury bond yields, which fell from under 5% in August 2007 to below 2.7%, a level not seen since the mid-1950s, by the end of 2008.

While the "flight to quality" pushed yields on government securities down, yields and spreads on corporate bonds began to rise as the financial crisis took hold. From early 2004 to mid-2007, spreads on long-term A- and Baa-rated corporate bonds relative to the government benchmark yields had been fairly stable,

averaging approximately 110 and 150 basis points respectively. Between mid-2007 and the end of November 2008, the spread between long-term A-rated corporate and long-term Treasury bond yields had soared to almost 390 basis points (yield of 8%). The corresponding spread between long-term Baa-rated corporate and Treasury bond yields had ballooned to 560 basis points (yield of 9%).[12] The wide differential between Baa-rated and A-rated bond spreads in late 2008 was a clear signal of the importance of credit quality.

Some signs of a thaw in the credit markets have emerged in early 2009; yields on 30-year government bonds have risen moderately (3.6% at the end of March 2009). Nevertheless, long-term Treasury bond yields remain well below their long-term expected level of 5.6% (See Table 3 below).

Yields on long-term corporate bonds have receded from their 2008 peaks. At the end of March 2009, yields on long-term A-rated and Baa-rated corporate bonds had declined to 6.64% and 8.45% respectively. Their corresponding spreads with Treasury bond yields had also fallen, to approximately 310 and 490 basis points respectively, but, despite this decline, remained well above their historic averages of 110 and 150 basis points.

Long-term Treasury yields are expected to remain at or below 2008 levels through mid-2010. Through mid-year 2010, the long-term Treasury bond yield is expected to average approximately 3.8%. As the economy gradually recovers,

[12] The peak in absolute yields occurred on October 31, 2008, when A-rated and Baa-rated corporate yields hit 8.07% and 9.54% respectively.

yields on the 30-year Treasury bond are expected to rise gradually, averaging 4.7% from 2009-2013. Over the longer term, 2011-2020, the 30-year Treasury is expected to average approximately 5.6%. Corporate spreads are expected to decline only slightly from their current levels in 2009. While the spreads are expected to continue to decline over the longer-term, they are expected to remain above the historic levels maintained prior to the onset of the current financial crisis of 110 and 150 basis points on average for A- and Baa-rated corporate bonds respectively. Table 3 summarizes actual and forecast government and corporate interest rate forecasts.

**Table 3**

| | 2008 (Actual) | Consensus Forecasts | | | |
|---|---|---|---|---|---|
| | | 2009 | 2010 | 2009-2013 | 2011-2020 |
| 90-day Treasury Bills | 1.3% | 0.3% | 1.0% | 2.3% | 4.0% |
| 10-year Treasury Notes | 3.6% | 2.9% | 3.7% | 4.25% | 5.25% |
| 30-year Treasury Bonds | 4.2% | 3.5% | 4.0%/1 | 4.7%/2 | 5.6%/2 |
| Long-term A-Rated Corp. Bonds | 6.6% | 6.6%/3 | NA | NA | NA |
| Long-term Baa-Rated Corp. Bonds | 7.5% | 7.8% | 7.6%/1 | 7.5%/4 | 7.8%/4 |

1/ Through June 2010.
2/ Based on March 2009 forecast yields and forecast long-term spreads between 10 and 30-year Treasury yields as per December 2008 Blue Chip *Financial Forecasts*. Blue Chip *Financial Forecasts* publishes long-term forecasts in December and June only.
3/ Actual through March 2009.
4/ Based on March 2009 forecast yields and forecast forecast long-term spreads between corporate Baa-rated bond and 30-year Treasury yields as per December 2008 Blue Chip *Financial Forecasts*.
Source: Blue Chip *Economic Indicators*, March 2009 and Blue Chip *Financial Forecasts*, December 2008 and March 2009

## B. Equity Market Trends

Following the 2001-2002 recession, as the economy strengthened, fueled by low interest rates, easy credit and a buoyant housing market, the equity markets also strengthened. They continued to climb even as the housing bubble started to

deflate in late 2006. Even as the credit markets coped with an increasingly severe credit crunch in 2007, the equity markets remained steady, reaching their peak in mid-October. However, during 2008, as the crisis in the credit markets expanded globally, commodity prices (e.g., oil, copper, aluminum, wheat, corn) began to collapse and global economies appeared more likely to be heading toward recession, the equity markets began an incessant retreat. Following the Lehman Brothers bankruptcy announcement in September 2008, the equity market retreat erupted into a full-fledged panic.

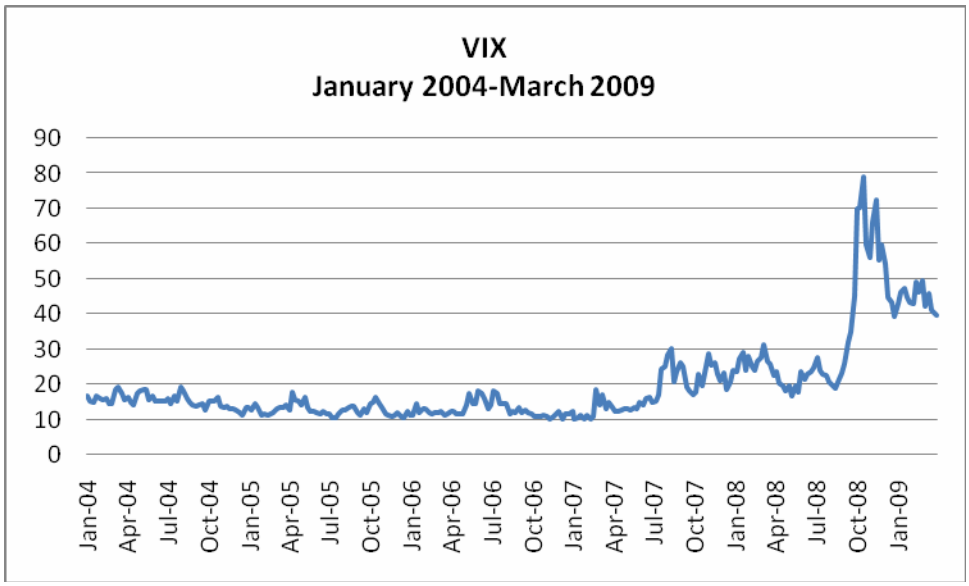
From its October 2007 peak through the mid-March 2009 trough, the S&P 500 fell over 55%, from a high of 1,565 on October 9, 2007 to a low of 676 on March 9, 2009, the lowest level since 1997. Relatively positive reports on retail sales, inflation and housing starts in March 2009 did boost the market slightly, but at the end of March, the S&P 500 remained 50% below its October 2007 peak.

Equity market volatility rose significantly in 2008. The VIX index, an equity volatility index (often referred to as the "Fear Gauge"), introduced in 1993 by the Chicago Board Options Exchange, is an indicator of investor risk aversion. An increase in the VIX index signals rising risk aversion and an increase in the required equity market risk premium.

As demonstrated in the figure below, the index indicates that, during much of 2004-2006, the equity market was perceived as unusually stable; trading within a range of 10 to 19, and averaging 13.5. The VIX index rose steadily throughout much of 2007; during the first eight months of 2008 it averaged 23, 70% higher

than its 2004-2006 average. During the fourth quarter of 2008, as investor concerns accelerated, the index jumped sharply, peaking at almost 80 in October 2008, its highest level since inception, and averaging close to 60 during the entire 4th quarter. While the volatility has since declined, on average during the first quarter of 2009, the VIX has traded at 45, still over three times above its pre-crisis levels. To put this in perspective, on only six days prior to the onset of the current financial market crisis in August 2007 has the index traded at or above 40.

**Figure 1**




Source: Chicago Board Options Exchange

## C. Trends In The Markets For Utility Securities

During the past 18 months, trends in the markets for long-term debt and equity indicate a significant increase in the cost of capital for BBB/Baa-rated utilities (which account for approximately 60% of the total number of utilities rated by Standard & Poor's and Moody's).

The yield on Moody's long-term Baa-rated public utility bond index rose from approximately 6.4% at the beginning of 2008 and exceeded 9% in October 2008. In October 2008, AmerenIP raised 10-year Senior Secured notes at a cost of 9.75%. By the end of March 2009, the yield on Baa-rated public utility bonds was still over 8%, representing a spread of 450 basis points over long-term Treasury bond yields. In March 2009 AmerenUE raised 30-year Senior Secured notes at 8.45%. To put this in perspective, the historical spread (April 1953-March 2009) between long-term Baa-rated public utility and Treasury bond yields has been approximately 165 basis points.

Long-term A-rated public utility bond yields also rose significantly, from approximately 6.1% at the beginning of 2008 to over 8% in October. The yields have since declined to 6.4% at the end of March 2009, but the spreads with long-term Treasury bond yields are materially higher than their long-term levels. The spread at the end of March 2009 was 285 basis points, compared to the long-term (April 1953-March 2009) average of approximately 130 basis points.

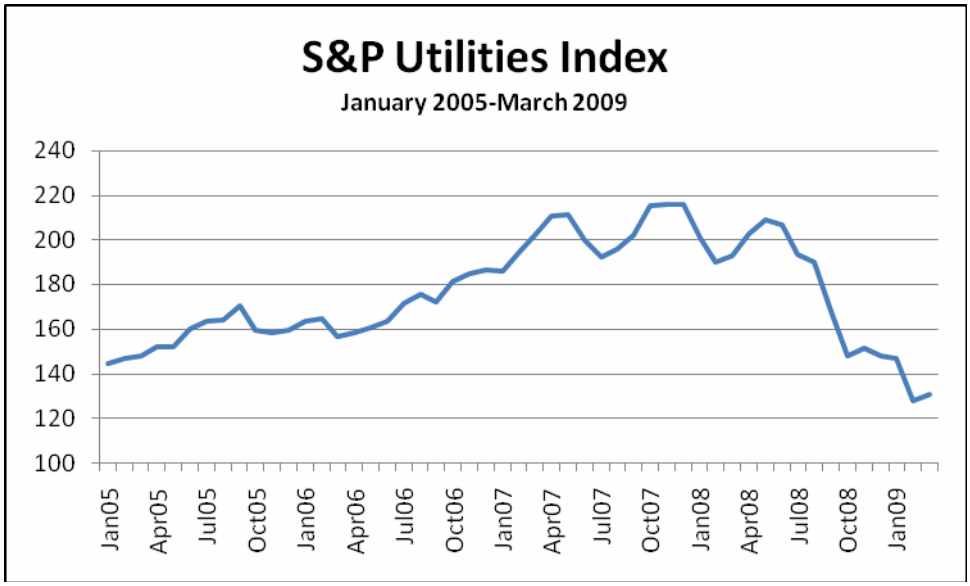
While both the costs of A- and Baa-rated rated public utility debt and spreads have risen, the increase in cost to Baa-rated public utilities has been significantly

greater. At the end of March 2009, at 165 basis points, the spread was over 100 basis points higher than the long-term average (less than 50 basis points).

The comparison of the increase in the costs of debt to A- and Baa-rated public utilities on a relative basis underscores the importance of maintaining strong credit metrics and credit ratings. The opportunity to earn a fair return on equity is critical to the ability to achieve and maintain strong credit metrics and ratings. Ratings below the A category can impair a utility's access to capital on reasonable terms and conditions, particularly when capital markets are under pressure. The significantly higher cost of Baa-rated public utility debt relative to A rated debt under current market conditions demonstrates that the cost to ratepayers of credit ratings lower than the A category can be substantial.

In the equity markets, the S&P Utilities Index fell 40% from its 2007 peak to its March 2009 trough as shown in Figure 2 below.

**Figure 2**




Source: S&P, Research Insight

My proxy sample of electric utilities experienced a similar decline. Ameren's shares have lost 60% of their value in less than two years, with close to half of the loss occurring after the February 2009 announcement that the Company was planning to cut its dividend by 40%. Many electric utilities, including Ameren and one-third of the electric utilities in my proxy sample, are currently trading at prices below book value (AmerenIP Exhibit 12E, Schedule E-3, page 1 of 2).

While there has been some improvement in the market for public utility equities since the trough in March 2009, at the end of March 2009, equity markets remain difficult and the S&P Utilities Index remains well below its peak.

## V. ESTIMATE OF A FAIR RETURN ON EQUITY

### A. Conceptual Considerations

**Q. Please summarize your approach to estimating a fair return on equity for the electric utility operations of AmerenIP.**

A. My estimation of a fair return on equity starts with a recognition of the objective of regulation. That objective is to simulate competition, i.e., to establish a regulatory framework that will mimic the competitive model. Under the competitive model, the required return on equity is expected to reflect the opportunity cost of capital, i.e., a return that is commensurate with the returns available on foregone investments of similar risk. As discussed in Section III, a fair return is one that provides the utility with an opportunity to earn a return on investment commensurate with that of comparable risk enterprises, and ensure confidence in the financial integrity of the company in order to maintain its credit and attract necessary capital.

The ability to attract capital is not synonymous with being allowed a return comparable with those of similar risk entities. A return that simply allows a utility to attract capital, irrespective of the cost, does not lead to the conclusion that it is consistent with the comparable returns standard.

The criteria for a fair return give rise to two separate standards, the capital attraction standard and the comparable return, or comparable earnings, standard. The fact that the allowed return is applied to an original cost rate base is key to distinguishing between the capital attraction and comparable earnings standards. The base to which the return is applied determines the dollar earnings stream to the utility, which, in turn, generates the return to the shareholder (dividends plus capital appreciation). When the allowed return on original cost book value is set, a market-derived cost of attracting capital must be converted to a fair and

reasonable return on book equity. Failure to equate a market-derived equity cost rate to a stream of earnings on book value in dollar terms will result in an allowed level of earnings that will discourage utilities from making the significant required investments in critical infrastructure.

**Q. What tests have you applied to estimate a fair return on equity for AmerenIP's electric utility operations?**

A. I have applied both a constant growth and a three-stage growth discounted cash flow (DCF) model and three equity risk premium (ERP) tests, including the capital asset pricing model (CAPM). I have also applied the comparable earnings test for purposes of assessing the reasonableness of these results. However, my recommendation relies on the results of the market-based tests, that is, the DCF and ERP tests.

Reliance on multiple tests recognizes that no one test produces a definitive estimate of the fair return.[13] Each test is a forward-looking estimate of investors' equity return requirements. However, the premises of each of the tests differ; each test has its own strengths and weaknesses and not all tests are equally reliable in different capital market conditions. In principle, the concept of a fair and reasonable return does not reduce to a simple mathematical construct. It would be unreasonable to view it as such.

[13] As stated in Bonbright, "No single or group test or technique is conclusive." (James C. Bonbright, Albert L. Danielsen, David R. Kamerschen, *Principles of Public Utility Rates*, 2nd Ed., Arlington, Va.: Public Utilities Reports, Inc., March 1988).

In contrast to the cost of debt, the cost of equity is not directly observable. No one knows with certainty what "cost of equity" is in each equity investor's mind, or even what cost of equity is required by the "consensus" of investors who set equity market prices through their buying and selling of shares. The cost of equity must be inferred using relatively simple models that attempt to quantify the way investors collectively price common equity. Since individual investors commit capital for many different reasons, there is no way to be certain what factors account for their decisions.

Discounted cash flow and equity risk premium models represent conceptually different ways that investors might approach estimating the return they require on the market value of an equity investment. Both the discounted cash flow and equity risk premium approaches are intuitively appealing, and both types of tests are relatively simple in principle to apply. Nevertheless, any DCF or ERP test is a simplified, stylized model of complex behavior with different assumptions and inputs. These differences can result in a range of estimates of the return that investors require to provide equity capital. Ultimately, establishing a fair return requires informed judgment to ensure that both the capital attraction and comparable return requirements of the fair return standard are met.

## B. Discounted Cash Flow Model

### 1. Conceptual Underpinnings

**Q. Please discuss the conceptual basis for the DCF model.**

A. The discounted cash flow approach proceeds from the proposition that the price of a common stock is the present value of the future expected cash flows to the investor, discounted at a rate that reflects the riskiness of those cash flows. If the price of the security is known (can be observed), and if the expected stream of cash flows can be estimated, it is possible to approximate the investor's required return (or capitalization rate) as the rate that equates the price of the stock to the discounted value of future cash flows.

### 2. DCF Models

**Q. What DCF models did you use?**

A. There are multiple versions of the discounted cash flow model available to estimate the investor's required return. An analyst can employ a constant growth model or a multiple period growth model to estimate the cost of equity. One can also utilize different timing of receipt of cash flow assumptions, e.g., annual or quarterly.

The constant growth model rests on the assumption that investors expect cash flows to grow at a constant rate throughout the life of the stock. Similarly, a multiple period growth model rests on the assumption that growth rates will change over the life of the stock. In determining the DCF cost of equity for the electric utilities that are a proxy for AmerenIP's electric utility operations, I utilized both constant growth and three-stage growth models.

### 3. Proxy Companies

**Q. To what companies did you apply the DCF test?**

A. I applied the DCF test to a sample of companies that includes every electric utility:

1. classified by *Value Line* as an electric utility and has *Value Line* forecasts;

2. that is rated in the BBB category;

3. which have greater than 50% of total assets (2008) in regulated activities, equivalent to the Edison Electric Institute's categories of "Regulated" and "Mostly Regulated";

4. that has I/B/E/S[14] forecasts of long-term growth rates for each of the preceding 12 months;

5. that has not omitted dividends since 1st Quarter 2008; and,

6. is not publicly known to be an acquisition target or involved in a merger.

The resulting 29 electric utilities are listed on AmerenIP Exhibit 12E, Schedule E-3.

**Q. Did you apply the discounted cash flow test specifically to Ameren Corporation?**

A. No, I did not apply the model specifically (or solely) to AmerenIP' parent, Ameren Corporation, for three reasons. First, while Ameren Corporation is

[14] The consensus forecasts are obtained from I/B/E/S, a leading provider of earnings expectations data. The data are collected from over 7,000 analysts at over 1,000 institutions worldwide, and cover companies in more than 60 countries.

primarily an electric utility, any DCF estimate which relies only on data for a single company is subject to measurement error. Second, the application of the test to the "subject" utility entails considerable circularity. Third, the application of the DCF test solely to Ameren Corporation is incompatible with the comparable returns criterion for estimating a fair and reasonable return. It is the performance of companies comparable to the utility in terms of risk that must be the focus of the return on equity analysis.

**Q. What is "measurement error"?**

A. In this context, measurement error refers to the use of an input to the model which is theoretically inconsistent with the other inputs to the model. Specifically, the application of the DCF approach requires inferring investor growth expectations; the resulting DCF cost estimate is very sensitive to the inferred growth expectations. Measurement error results when the forecast of growth used in the DCF model does not equate to the investors' expectation of growth that is embedded in the dividend yield component. By relying on a sample of companies, the amount of "measurement error" in the data can be reduced. The larger the sample, the more confidence the analyst has that the sample results are representative of the cost of equity. As noted in a widely utilized finance textbook:

> Remember, [a company's] cost of equity is not its personal property. In well-functioning capital markets investors capitalize the dividends of all securities in [the company's] risk class at exactly the same rate. But any estimate of [the cost of equity] for a single common stock is noisy and subject to error. Good practice does not put too much weight on single-

> company cost-of-equity estimates. It collects samples of similar companies, estimates [the cost of equity] for each, and takes an average. The average gives a more reliable benchmark for decision making.[15]

**Q. What factual support do you have for the existence of potential measurement error?**

A. In principle, the cost of equity for firms of similar risk in the same industry should be quite similar. The fact that individual company DCF costs differ widely (AmerenIP Exhibit 12E, Schedules E-4 to E-6) is a strong indication that a single company DCF cost does not lead to a reliable estimate of the cost of equity.

### 4. Application of the DCF Test

#### a. Constant Growth Model

**Q. Please summarize the premises of the constant growth model.**

A. The assumption that investors expect a stock to grow at a constant rate over the long-term is most applicable to stocks in mature industries. Growth rates in these industries will vary from year to year and over the business cycle, but will tend to deviate around a long-term expected value.

The annual constant growth model is expressed as follows:

$$\text{Cost of Equity (k)} = \frac{D_1}{P_o} + g,$$

where,

$D_1$ = next expected dividend
$P_o$ = current price
$g$ = constant growth rate

[15] Richard A. Brealey, Stewart C. Myers and Franklin Allen, *Principles of Corporate Finance,* Eighth Edition, Boston, MA: Irwin McGraw Hill, 2006, p. 67 (emphasis added).

**Q. How does the model set forth above reflect a simplification of reality?**

A. First, it is based on the notion that investors expect all cash flows to be derived through dividends. Second, the underlying premise is that dividends, earnings, and price all grow at the same rate,[16] While capital appreciation (price growth) is implicit in the model, it is not an explicit input to the model. It is likely that, at any given point in time, investors expect growth in dividends, earnings and prices to be different from each other, and, in the near term, to deviate from their long-run values. Third, the annual version of the DCF model assumes investors receive their dividends annually and that the dividend grows at an annually compounded rate. The annual growth rate DCF model simplifies from the reality that dividends are received by investors quarterly and can be reinvested so as to compound quarterly. Finally, the model is perpetual. It literally assumes that an investor's holding period is equal to infinity. Clearly that is a simplification of reality.

**Q. Did you incorporate quarterly compounding into your estimates of the DCF cost of equity?**

A. Yes. I have incorporated quarterly compounding to capture the impact on the cost of equity of the reinvestment of dividends. The quarterly compounding constant growth DCF model is expressed as follows:

$$\text{Cost of Equity (k)} = [\underline{d_1}*(1+k)^{.75}+\underline{d_2}*(1+k)^{.5}+\underline{d_3}*(1+k)^{.25}+\underline{d_4}] + g,$$

[16] Additional assumptions include: a constant price/earnings multiple, a constant growth rate in book value per share, a constant retention ratio and a constant payout ratio.

$$P_o$$

where,

| | | |
|---|---|---|
| $k$ | = | required return on equity |
| $d_i$ | = | dividends expected over coming year |
| $P_o$ | = | current price |
| $g$ | = | constant growth rate |

The model is solved iteratively because the required return on equity (k) appears on both sides of the equation.

**Q. Has the Illinois Commerce Commission ("ICC") accepted the premise of the quarterly compounding model?**

A. Yes, it has, most recently in Docket 08-0363 ( *See, Northern Illinois Gas Company d/b/a Nicor Gas Company (Tariffs filed April 29, 2008), Proposed general increase in rates, and revision to other terms and conditions of service,* Docket No. 08-0363, March 25, 2009 at pages 69-70).

**Q. How does one apply the constant growth model given the potential disparity between forecasts of earnings, dividends and price growth?**

A. The model can be applied by recognizing that all investor returns must ultimately come from earnings. Hence, focusing on investor expectations of earnings growth will encompass all of the sources of investor returns (i.e., dividends and retained earnings).

**b. Three-Stage Growth Model**

**Q. Please explain your application of the three-stage growth model.**

A. My application of the three-stage growth model is based on the premise that investors expect the growth rate for the sample of electric utilities to be equal to company-specific growth rates for the near-term (Stage 1 Growth), but, in the longer-term (from Year 6 onward) will migrate to the expected long-run rate of growth in the economy (nominal GDP Growth).

**Q. Why did you use a three-stage, rather than a two-stage, model as you have done in previous cases?**

A. The two-stage model implicitly assumes that investors' growth expectations will suddenly change, either upward or downward, from the Stage 1 growth rate to the long-term growth rate at the end of Stage 1. The three-stage model is based on the more realistic assumption that investors would expect the utilities' growth prospects to gradually trend toward the longer-term growth rate.

**Q. Why would you expect utilities to grow at the overall rate of growth in the economy in the long-term?**

A. Industries go through various stages in their life cycle. Utilities are generally considered to be a mature industry. Mature industries are those whose growth parallels that of the overall economy.

**Q. Is reliance on expected GDP growth as an estimate of the longer-term growth rate an accepted approach?**

A. Yes. Use of forecast GDP growth as the long-term growth component is a widely utilized approach. For example, the Merrill Lynch discounted cash flow model

for valuation utilizes GDP growth as a proxy for long-term growth expectations. The Federal Energy Regulatory Commission relies on GDP growth to estimate expected long-term growth in its standard DCF models (applied to companies with conventional corporate structures) for gas and oil pipelines. Most recently, in Docket 08-0363 (Nicor, March 25, 2009, page 70) the ICC found that the use of a terminal growth rate in a non-constant DCF analysis "that effectively caps the terminal growth rate for companies in the sample at the GDP growth rate, which is a reasonable proxy for growth in the U.S. economy, will provide useful information and produce a reasonable estimate of the cost of common equity".

**Q. How is the DCF cost estimated using a three-stage DCF model?**

A. The DCF cost of equity is estimated as the internal rate of return that causes the price of the stock to equal the present value of all future cash flows to the investor.

The cash flows, in annualized terms, are as follows:

Year 1, cash flow is equal to:

Last Paid Annualized Dividend x (1 + Stage 1 Growth)

For each of years 2 through 5, cash flow is defined as:

Cash Flow $_{t-1}$ x (1 + Stage 1 Growth)

Cash flows from Year 6 through 10 are estimated as:

Cash Flow $_{t-1}$ x (1 + Average of Stage 1 Growth and GDP Growth)

Cash flows from Year 11 and onward are estimated as:

Cash Flow $_{t-1}$ x (1 + GDP Growth)

**Q. Have you incorporated quarterly compounding in your application of the three-stage DCF cost of equity model?**

A. Yes. In the quarterly compounding three-stage model, the present value of each quarterly cash flow is calculated as follows:

$$\text{Cash flow}_{Qi} = d_i/(1+k)^N$$

where,

- Qi = quarter for i = 1 to 40
- k = required return on equity
- $d_i$ = dividends expected in quarter i
- N = the percentage of days in a year until dividend is paid.[17]

The dividend is increased in the same quarter each year by an amount equal to the I/B/E/S growth rate during the first 20 quarters (5 years) and by an amount equal to the average of the I/B/E/S growth rate and rate of growth in GDP during the next 20 quarters. A final (terminal value) cash flow is calculated as follows:

$$\text{Cash Flow}_{Final} = \{ [d_1*(1+k)^{.75}+d_2*(1+k)^{.50}+d_3*(1+k)^{.25}+d_4]/(k-g_2)\}/(1+k)^N$$

where,

- k = required return on equity
- $d_i$ = dividends expected in next four quarters
- $g_2$ = GDP growth
- N = value of N in period 40

The model is solved iteratively to find the value for k which causes the current price of the stock to equal the present value of all future cash flows ($\text{Cash Flow}_{Qi}$ plus $\text{Cash Flow}_{Final}$) to the investor.

[17] For the first observation, N = the number of days from the last payment until the next payment divided by the number of days in the year. In subsequent observations, 0.25 is added to this value.

### 5. Investor Growth Expectations for the DCF Models

**Q. Please discuss how you have estimated investor growth expectations.**

A. In the application of the constant growth model, I relied upon both the I/B/E/S consensus earnings forecasts and an estimate of the sustainable growth rate. The sustainable growth rate was derived from *Value Line* forecasts. In the application of the three-stage growth model, I relied upon the I/B/E/S consensus earnings forecasts as the estimate of investor growth expectations during Stage 1. During the second stage, I relied upon an average of the Stage 1 and Stage 3 growth rates. Use of an average of the I/B/E/S growth rate (Stage 1) and the consensus forecast for long-term growth in the economy (Stage 3) is consistent with the expectation that the adjustment to the long-term growth rate would occur gradually rather than abruptly.

**Q. Please explain sustainable growth.**

A. Sustainable growth, or earnings retention growth, is premised on the notion that future dividend growth depends on both internal and external financing. Internal growth is achieved by the firm retaining a portion of its earnings in order to produce earnings and dividends in the future. External growth measures the long-run expected stock financing undertaken by the utility and the percentage of funds from that investment that are expected to accrue to existing investors. The internal growth rate is estimated as the fraction of earnings (b) expected to be retained multiplied by expected return on equity (r). The external growth rate is estimated by the forecast growth in common stock outstanding (s) multiplied by

the fraction of the investment expected to be retained (v). The sustainable growth rate is then calculated as the sum of br and sv. The external growth component recognizes that investors may expect future growth to be achieved not only through the retention of earnings but also through the issuance of additional equity capital which is invested in projects that are accretive to earnings.

**Q. Why have you utilized only forecast growth rates and not historic growth rates?**

A. I have utilized forecast growth rates for the following reasons. First, various studies have concluded that analysts' forecasts are a better predictor of growth than naïve forecasts equivalent to historic growth; moreover, analysts' forecasts have been shown to be more closely related to investors' expectations.[18]

[18] Empirical studies that conclude that investment analysts' growth forecasts serve as a better surrogate for investors' expectations than historic growth rates include Lawrence D. Brown and Michael S. Rozeff, "The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from Earnings", *The Journal of Finance*, Vol. XXXIII, No. 1, March 1978; Dov Fried and Dan Givoly, "Financial Analysts' Forecasts of Earnings, A Better Surrogate for Market Expectations", *Journal of Accounting and Economics,* Vol. 4, 1982; R. Charles Moyer, Robert E. Chatfield, Gary D. Kelley, "The Accuracy of Long-Term Earnings Forecasts in the Electric Utility Industry", *International Journal of Forecasting,* Vol. I, 1985; Robert S. Harris, "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return", *Financial Management*, Spring 1986; James H. Vander Weide and William T. Carleton, "Investor Growth Expectations: Analysts vs. History", *The Journal of Portfolio Management,* Spring 1988; and David Gordon, Myron Gordon and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management,* Spring 1989.

The Vander Weide and Carleton study cited

> …found overwhelming evidence that the consensus analysts' forecast of future growth is superior to historically oriented growth measures in predicting the firm's stock price [and that these results] also are consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy-and-sell decisions.

The Gordon, Gordon and Gould study concluded,

> …the superior performance by KFRG [forecasts of [earnings] growth by securities analysts] should come as no surprise. All four estimates [securities analysts' forecasts plus past growth in earnings and dividends and historic retention growth rates] rely upon past data, but in the case of KFRG a larger body of past data is used, filtered through a group of security analysts who adjust for abnormalities that are not considered relevant for future growth."

Second, to the extent history is relevant to the outlook for earnings, it should already be reflected in the forecasts.

### 6. Application of the Constant Growth DCF Model

**Q. Please summarize your application of the constant growth DCF model.**

A. I applied the constant growth DCF model to the sample of 29 electric utilities using the following inputs to calculate the dividend yield:

1. the most recent annualized dividend paid prior to March 26, 2009 as $D_o$; and

2. the average of the daily closing stock prices for the period February 26 to March 26, 2009 as $P_o$.

**Q. Why did you rely on an average price, rather than a "spot" price?**

A. The use of an average price lowers the possibility that the estimated cost of equity is not attributable to any capital market anomalies that may arise due to transitory investor behavior. In other words, using an average price reduces the possibility of "measurement error" as discussed above. The use of an average price is particularly critical in current market conditions which have been characterized by significant volatility.

**Q. What are the results of the constant growth model?**

A. The results of my application of the constant growth model are detailed in AmerenIP Exhibit 12E, Schedules E-4 and E-5 and summarized below:

**Table 4**

| | Mean | Median | Average |
|---|---|---|---|
| **I/B/E/S** | 13.9% | 13.2% | 13.6% |
| **Sustainable Growth** | 12.2% | 11.3% | 11.8% |

### 7. Three-Stage Growth Model

**Q. Please summarize the results of your application of the three-stage growth model.**

A. The three-stage growth model, as previously noted, relies on the I/B/E/S consensus of analysts' earnings forecasts for Stage 1 (20 quarters), and the average of this growth rate with the forecast nominal growth in the economy for the Stage 2 (second 20 quarters). In the long-run (Stage 3), represented by the model's terminal value, growth equals the forecast nominal rate of growth in the economy (GDP). The expected long-run rate of growth in the economy is based on the consensus of economists' forecasts found in Blue Chip *Economic Indicators* (March 2009). The consensus expected long-run (2011-2020) nominal rate of growth in GDP is 5.0%.

**Q. What are the estimated DCF costs of equity using the three-stage growth model?**

A. As detailed in AmerenIP Exhibit 12E, Schedule E-6, the three-stage DCF model estimates of the cost of equity for the electric utility sample are as follows:

**Table 5**

| Mean | Median | Average |
|---|---|---|
| 12.6% | 12.1% | 12.4% |

**8. DCF Cost of Equity**

**Q. What do the constant growth and three-stage growth models together indicate is the cost of equity for the proxy sample of electric utilities?**

A. The results of the two DCF models indicate a required return of approximately 12.6%.

**Q. Do the results of the DCF test underscore the importance of using proxy groups and multiple DCF models in estimating the investors' required return on equity?**

A. Yes. First, the individual company values vary widely among utilities that are of relatively similar total investment risk. To illustrate, the DCF costs of equity based on the I/B/E/S earnings forecasts, even excluding the two highest and two lowest values, range from 10.8% to almost 18%, a difference of almost eight percentage points. Second, the different growth estimates result in widely divergent costs of equity for an individual company. For example, the I/B/E/S consensus earnings forecast for Otter Tail Corp is 8.5% whereas the sustainable growth rate developed from *Value Line forecasts* is 4.1%. The resulting constant growth estimates of Otter Tail's DCF cost of equity are 15.7% and 10.8%,

respectively. These examples underscore the importance both of using proxy groups rather than a single company and the application of more than one model.

### C. Equity Risk Premium Tests

#### 1. Conceptual Underpinnings

**Q. What is the underlying premise of equity risk premium tests?**

A. The premise of all equity risk premium tests is the basic concept of finance that there is a direct relationship between the level of risk assumed and the return required. Since an investor in common equity is exposed to greater risk than an investor in bonds, the former requires a premium above bond yields as compensation for the greater risk. Like the DCF test, the equity risk premium test results are a measure of the market-related cost of attracting capital, i.e., a return on the market value of the common stock, not the book value.

**Q. What equity risk premium tests did you apply?**

A. I used the capital asset pricing model ("CAPM"), plus two direct estimates of utility equity risk premiums. The first of the two direct estimates was made by reference to historic achieved equity returns and risk premiums for both electric and natural gas distribution utilities (an *ex post* model); the second direct approach is based on differences between DCF cost of equity estimates for my proxy sample of 29 electric utilities and contemporaneous interest rates (an *ex ante* model).

#### 2. Capital Asset Pricing Model

### a. Conceptual Underpinnings of CAPM

**Q. Please discuss the assumptions that underpin the CAPM.**

A. The CAPM is a formal equity risk premium model, which specifies that the required return on an equity security is a linear function of the required return on a risk-free investment. In its simplest form, the CAPM posits the following relationship between the required return on the risk-free investment and the required return on an individual equity security (or portfolio of equity securities):

$$R_E = R_F + b_e (R_M - R_F)$$

where,

$R_E$ = Required return on individual equity security
$R_F$ = Risk-free rate
$R_M$ = Required return on the market as a whole
$b_e$ = Beta on individual equity security

The CAPM relies on the premise that an investor requires compensation for non-diversifiable risks only. Non-diversifiable risks are those risks that are related to overall market factors (e.g., interest rate changes, economic growth). Company-specific risks, according to the CAPM, can be diversified away by investing in a portfolio of securities, and therefore the shareholder requires no compensation to bear those risks.

The non-diversifiable risk is captured in the beta, which, in principle, is a forward-looking measure of the expected volatility of a particular stock or group of stocks, relative to the market. Specifically, the beta is equal to:

$$\frac{\text{Covariance } (R_E, R_M)}{\text{Variance } (R_M)}$$

The variance of the market return is intended to capture the uncertainty related to economic events as they impact the market as a whole. The covariance between the return on a particular stock and that of the market reflects how responsive the required return on an individual security is to changes in events, which also change the required return on the market.

In simplistic terms, the CAPM requires determining the equity risk premium required for the market as a whole ("market risk premium"), then adjusting it to account for the risk of the particular security or portfolio of securities using the beta. The result (market risk premium multiplied by beta) is an estimate of the equity risk premium specific to the particular security or portfolio of securities.

### b. Risk-Free Rate

**Q. What is the proxy for the risk-free rate?**

A. The simple CAPM model is a single holding period model which, if the model were applied assuming a single year holding period, would entail using a short-term government interest rate as the risk-free rate. However, it is widely recognized that short-term rates are largely the effect of monetary policy and, as such, are administered, rather than market-driven, rates. In principle, a longer-term Treasury should be used, so as to more closely match the duration of the risk-free rate and common equities, whose values reflect expected cash flows that are perpetual in nature. Hence, in the application of the CAPM, most analysts rely on a long-term government yield, which is risk-free in that there is no default risk associated with U.S. Treasury securities. Thus, I have utilized forecast yields

on the 30-year Treasury bond as a proxy for the risk-free rate in the simple CAPM model.

**Q. In past proceedings before the ICC, you used the forecast of 10-year Treasury bonds in your application of the CAPM? Why have you switched to the 30-year forecast?**

A. For two reasons. First, as stated above, the duration of the 30-year Treasury bond more closely matches the perpetual life of equities. Second, the Federal Government had stopped issuing 30-year bonds in 2002 as a result of reduced financing requirements, leaving the 10-year Treasury bond as the benchmark. The government began issuing 30-year Treasury bonds again in 2006, and is highly likely to continue to do so in light of the significant government deficits that have been created in recent months. The 30-year Treasury bond is once again considered a benchmark bond for the purpose of pricing securities.

**Q. What is your forecast of the risk-free rate in the CAPM analysis?**

A. Over the next five years, 2009-2013, as the economy recovers from the current crisis, yields on the 30-year Treasury are expected to average 4.7%. In the longer term, 2011-2020, the 30-year Treasury is expected to average approximately 5.6%.[19] I have utilized both forecasts in my CAPM analysis, as explained in further detail below.

**c. Beta**

[19] Blue Chip *Financial Forecasts*, December 2008 and Blue Chip *Economic Indicators*, March 2009.

**Q. What is the appropriate beta to be used for the sample of LDCs?**

A. In estimating the appropriate beta, there were two main considerations:

1. Empirical studies have shown that the CAPM understates the return requirement for companies with betas less than the market mean of 1.0.[20] Reliance on *Value Line* betas, which are adjusted for the tendency of betas to trend toward the market mean of 1.0, assists in mitigating the model's tendency toward understatement of required returns for low beta (e.g., utility) stocks.

2. The beta is a forward-looking concept. However, typically, betas are calculated from historic data.[21] The applicability of a calculated historic beta to a future period must be analyzed in the context of events that gave rise to the calculation.

**Q. What are the recent betas for the sample of electric utilities that you used?**

[20] Evidence of this is found in the following studies:

Fisher Black, Michael C. Jensen, and Myron S. Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," Studies *in the Theory of Capital Markets*, edited by Michael Jensen. (New York: Praeger, 1972), pp. 79-121.

Marshall E. Blume and Irwin Friend, "A New Look at the Capital Asset Pricing Model," *Journal of Finance*, Vol. XXVIII (March 1973), pp. 19-33.

Eugene F. Fama, and James D. MacBeth, "Risk, Return and Equilibrium: Empirical Tests." Unpublished Working Paper No. 7237, University of Chicago, Graduate School of Business, August 1972.

Nancy Jacob, "The Measurement of Systematic Risk for Securities and Portfolios: Some Empirical Results," *Journal of Financial and Quantitative Analysis*, Vol. VI (March 1971), pp. 815-833.

[21] Calculated betas are typically simple regressions between the daily, weekly or monthly price changes for individual stocks and the corresponding price changes of the market index for a period of five years.

A. The most recent *Value Line* betas for the comparable electric utilities are in the range of 0.70-0.72 (midpoint of 0.71); see AmerenIP Exhibit 12E, Schedule E-3, page 1 of 2.

### d. Market Risk Premium

#### (1) Conceptual Considerations

**Q. Please discuss your estimates of the required market risk premium.**

A. While the market risk premium concept is deceptively simple, its quantification is, in principle, quite complex, because the level of the risk premium expected or required by investors is not static; it changes with economic and capital market conditions (particularly with inflation expectations), as well as with investors' willingness to bear risk.

The required market equity risk premium can be developed (1) from estimates of prospective market risk premiums and (2) from an analysis of experienced market risk premiums. With respect to the former, the discounted cash flow model can be used to estimate the cost of equity, where the expected return is comprised of the dividend yield plus investor expectations of longer-term growth based on prevailing capital market conditions. The estimated market equity risk premiums are obtained by subtracting the corresponding government bond yield from the estimated cost of equity.

#### (2) Market Risk Premium from DCF Cost of Equity for the Market

**Q. Please explain why an estimate of a forward-looking market risk premium is of value.**

A. It is widely accepted that the required market risk premium is not static, but varies with the outlook for inflation, interest rates and profits. Hence, a direct measure of the prospective market risk premium may provide a more accurate measure of the current level of the expected differential between stock and bond returns than experienced risk premiums. In particular, the application of a current interest rate to a longer-term average may be unrepresentative of investor expectations in a specific capital market environment. An estimate of a forward-looking market risk premium provides value because 1) the equivalence of past return to what were investors' *ex ante* expectations may be pure coincidence and 2) the determination of a fair return on equity reflective of the expected interest rate environment requires a direct assessment of current stock market expectations.

**Q. Please explain how your estimate of the forward-looking market risk premium was calculated.**

A. The forward-looking market premium may be determined by an application of the discounted cash flow model to the S&P 500. To estimate the DCF cost of equity for the S&P 500, an expected dividend yield and an expected growth rate are required. The expected dividend yield is equal to the average of the month-end February and March 2009 market-value weighted expected dividend yields for the S&P 500 companies of 3.7%.[22] For the expected growth rate, the market-value

[22] The current dividend yield of 3.4% was adjusted by the expected growth rate to estimate the expected

929 weighted consensus forecasts of earnings growth for the companies in the S&P
930 500 were used as a proxy for investor expectations of long-term growth. The
931 market-value weighted average I/B/E/S forecast of five-year growth for the S&P
932 500 companies was approximately 10.1%. The resulting expected market return
933 is 13.8%.

934 For the risk-free rate, I used the forecast 30-year Treasury yield expected to
935 prevail over the same five-year time frame for which the forecast growth rates for
936 the market are made. The use of the five-year forecast also recognizes that
937 currently government bond yields are abnormally low, partly as a response to
938 monetary policy initiatives and partly the result of a flight to quality, as discussed
939 in Section IV.A. With a forecast 30-year Treasury yield of 4.7%, the resulting
940 forward-looking estimate of the market risk premium is 9.1%.

941 **Q. Do the current economic and financial circumstances cause you to give**
942 **greater weight to the DCF-based market risk premium than you have in the**
943 **past?**

944 A. Yes. As discussed in Section IV.C, the equity markets are currently experiencing
945 significant turmoil and uncertainty. Given the extent of equity market risk at
946 present, the current level of the market risk premium is undoubtedly higher by a
947 significant margin than its long-term average. As a result, I have made two
948 CAPM estimates of the cost of equity, one based on *ex post* market risk premiums
949 and one based on an *ex ante* estimate of the market risk premium.

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dividend yield.

### (3) Experienced Market Risk Premiums

**Q. Please explain your estimate of the market risk premium from historic values.**

A. The estimation of the expected market risk premium from achieved (*ex post* or experienced) market risk premiums is premised on the notion that investors' expectations are linked to their past experience. Basing calculations of achieved risk premiums on the longest periods available reflects the notion that it is necessary to include as broad a range of event types as possible to avoid overweighting periods that represent unusual circumstances. On the other hand, since the objective of the analysis is to assess investor expectations in the current economic and capital market environment, weight should be given to periods whose equity characteristics, on balance, are more closely aligned with what today's investors are likely to anticipate over the longer term.

**Q. What type of average is required when an estimated market risk premium is developed from historic average returns?**

A. When historic risk premiums are used as a basis for estimating the expected risk premium, arithmetic averages, rather than geometric averages, need to be used.[23]

[23] The arithmetic average is the sum of the holding period returns divided by the number of returns in the sample. The geometric average, also referred to as the constant rate of return, is calculated by adding one to each of the holding period returns, multiplying all of the values together, raising the product of the values to the power of one divided by the number of returns in the sample, and then subtracting one.

The appropriateness of arithmetic averages, as opposed to geometric averages, for this purpose is succinctly explained by Ibbotson Associates[24] (*Stocks, Bonds, Bills and Inflation, 1998 Yearbook*, pp. 157-159):

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values . . . in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.

Expressed simply, the arithmetic average recognizes the uncertainty in the stock market; the geometric average removes the uncertainty by smoothing over annual differences. Equity risk premiums were calculated for two historic periods: 1926-2008 and 1947-2008. The year 1926 represents the first year for which the seminal Ibbotson Associates risk premium data are available. The data for the post-World War II period (1947-2008) were also relied upon, because the end of World War II marked significant changes in the economic structure, which remain relevant today.[25]

[24] Now owned by Morningstar.

[25] The key structural changes that have occurred since the end of World War II are:

1. The globalization of the economy, which has been facilitated by the reduction in trade barriers of which GATT (1947) was a key driver;
2. The exertion of the independence of the Federal Reserve commencing in 1951, and its focus on promoting domestic economic stability, which has been instrumental in tempering economic cyclicality;
3. Demographic changes, specifically suburbanization and the rise of the middle class, which have impacted the patterns of consumption;
4. Transition from a predominately manufacturing to a service-oriented economy; and,
5. Technological change, particularly in the areas of telecommunications and computerization, which have facilitated both market globalization and rising productivity.

**Q. What should be the measure of the historic risk-free rate used when calculating historic risk premiums?**

A. It should be the income return, as contrasted with the total return on long-term government bonds. The income return represents the riskless portion of the bond return. Since the CAPM requires a riskless return, the income return is the appropriate measure for estimating the historic differential between equity market returns and the risk-free rate.

**Q. What were the historic market risk premiums?**

A. The experienced risk premiums for the two periods were as follows:

**Table 6**

| 1926-2008 | 1947-2008 |
|---|---|
| 6.5% | 6.2% |

Source: AmerenIP Exhibit 12E, Schedule E-7, page 1 of 2.

**e. CAPM Risk Premiums**

**Q. Please provide your CAPM risk premiums for your sample of electric utilities based on your estimated values for the market risk premium and the proxy electric utility sample beta.**

A. The CAPM analysis above gives rise to two separate estimates of the market risk premium, the *ex ante* DCF-based premium of 9.1% and the *ex post* historic risk premium of 6.25% to 6.5%. Applying the sample beta to the two risk premium estimates results in CAPM risk premiums as follows:

CAPM Risk Premium = Beta X Market Risk Premium

Based on DCF-based market risk premium:

6.5% = 0.71 X 9.1%

Based on historic market risk premium:

4.5% = 0.71 X (6.25% to 6.5%)

### f. CAPM Returns on Equity

**Q. What is the CAPM return on equity produced by the *ex ante* DCF-based market risk premium approach?**

A. The application of the CAPM using the DCF-based market risk premium approach to estimating the market return relies on the same forecast of the 30-year Treasury bond yield of 4.7% as the risk-free rate in both places in the model in which a risk-free rate is required. The resulting CAPM cost of equity is:

Cost of Equity = Risk-free Rate + Beta X (Market Return – Risk-free Rate)

11.2% = 4.7% + 0.71 X (13.8%-4.7%)

**Q. What is the CAPM return on equity produced by the *ex post* (or historic) market risk premium approach?**

A. If the CAPM is to be applied to the long-run average equity risk premium, the corresponding risk-free rate needs to be representative of the long-term expected risk-free rate also. The long-term average forecast 30-year Treasury bond yield is 5.6% as indicated in Section IV.B above. The long-term average expected bond yield of 5.6% is quite close to the historic average levels of 5.2% to 6.0% for

1926-2008 and 1946-2008, respectively, as shown in AmerenIP 12E, Schedule E-7, page 1 of 2.

**Q. The preceding historic average risk premiums reflect differentials between equity market returns and income returns on a 20-year government security. Did you adjust the risk premiums for the fact that you are using a 30-year Treasury note as the risk-free rate?**

A. No. From October 1993 to March 2009, the longest period for which data for both series are available, the average spread between 30- and 20-year Treasury bond yields was approximately 10 basis points.[26] The differential spread is minimal and thus no adjustment is warranted.

The CAPM result based on a long-term average expected risk-free rate and the long-term average market equity risk premium is:

Cost of Equity = Risk-free Rate + Beta X (Market Risk Premium)

10.1% = 5.6% + 0.71 X (6.25% to 6.5%)

**Q. What bearing does the current state of financial markets have on the weight to be given to each of these two estimates?**

A. The DCF-based market risk premium approach explicitly captures current financial market conditions and, as between the two approaches, should be given greater weight.

[26] The 20-year constant maturity yield reported by the Department of the Treasury since October 1993 is based on outstanding Treasury bonds with approximately 20 years remaining to maturity. The Treasury discontinued issuing a 20-year bond in 1986.

### 3. Equity Risk Premium Test Based on Utility Achieved Risk Premiums

**Q. Please summarize the basis for estimating the required equity risk premium by reference to historic utility data.**

A. Reliance on achieved risk premiums for the electric utility industry as an indicator of what investors expect for the future is based on the same proposition as that used in the development of the market risk premium: over the longer term, investors' expectations and experience converge. The more stable an industry, the more likely it is that this convergence will occur.

**Q. What are the historic equity risk premiums derived from historic utility data?**

A. Over the period 1947-2008, the risk premium achieved by the electric utility industry (as estimated from returns on the S&P/Moody's Electric Utility Indices) in relation to the risk-free rate (that is, the income return component of Treasury bonds) was 4.8% (AmerenIP 12, Schedule E-7, page 1 of 2). Given the historic similarity in risk between the electric and natural gas utility industries, I also considered the achieved equity risk premiums of the natural gas distribution utilities. Over the same period, the corresponding achieved equity risk premium for the S&P/Moody's Gas Distribution Utility Index was 6.1% (AmerenIP Exhibit 12E, Schedule E-7, page 1 of 2).

Based on both electric and natural gas distribution utility historic risk premiums, the indicated expected risk premium is in the range of 4.8% to 6.1%, or

approximately 5.5%. Similar to the CAPM, if the risk premium is estimated by reference to long-term historic averages, the corresponding risk-free rate should be estimated as the expected yield over the longer-term. That forecast 30-year Treasury yield over the longer term is 5.6%. The corresponding equity return at the long-term forecast 30-year Treasury bond yield of 5.6% is 11.1% (5.6% + 5.5%).

**Q. Did you estimate the historic utility equity risk premium relative to long-term utility bonds?**

A. Yes, I have estimated the historic equity risk premium relative to the total return on Moody's long-term Baa-rated public utility bonds, which represents the current average bond rating of the proxy sample of electric utilities, as well as the current rating category of the Illinois Ameren utilities.

**Q. What have been the historic equity risk premiums for utilities relative to long-term Baa-rated public utility bonds?**

A. Based on both the electric and gas historic utility returns of, respectively, 10.8% and 12.1%, (average of approximately 11.4%), and historic long-term Baa-rated public utility bond returns over the period 1947-2008 of 7.2%, the historic risk premium is 4.25%.

**Q. Does the application of the test by reference to utility bond returns require a forecast of Baa-rated public utility bond yields over the long run, similar to your application of the test using the risk-free rate?**

A. Yes, for the same reason.

**Q. What is your forecast of the Baa-rated public utility bond yield for the long term?**

A. To my knowledge, there is no readily available forecast of long-term Baa-rated public utility bond yields. On average historically, long-term Baa-rated public utility bonds have traded at a spread of approximately 165 basis points over the 30-year Treasury bond yield. Adding a 165 basis point spread to my 5.6% longer-term forecast for the 30-year Treasury bond yield results in a forecast longer-term yield of 7.25% for Baa-rated public utility bonds.

**Q. What is the corresponding equity return requirement?**

A. The corresponding equity return requirement at a 7.25% forecast long-term Baa-rated public utility bond yield is 11.5%.

### 4. DCF-Based Equity Risk Premium Test for Electric Utilities

**Q. Please summarize your DCF-based equity risk premium test.**

A. A forward-looking equity risk premium for a utility can be estimated as a time series of differences between the discounted cash flow estimates of the cost of equity for a representative sample of utilities and the corresponding long government bond yield, where the DCF cost is the sum of the expected dividend yield (that is, adjusted for expected growth) and investors' expectations of long-term growth. The I/B/E/S investment analysts' consensus forecasts of five-year

(normalized) earnings growth can be used as a proxy for investors' expectations of long-term growth.

For each electric utility used in this study,[27] monthly DCF costs were estimated as the sum of the month-end expected dividend yield and the corresponding I/B/E/S five-year earnings growth expectation. Monthly equity risk premiums were calculated as the differences between the DCF cost of equity and the month-end long-term Baa-rated public utility bond yield.

**Q. Over what period did you conduct your analysis?**

A. The analysis was limited to a period which most closely resembles current capital market conditions, that is, the period August 2007 (which represents the onset of the current capital market crisis) through March 2009.

**Q. Please explain why you chose to estimate the equity return relative to both long-term Treasury and Baa-rated public utility bond yields.**

A. As discussed in Section IV.A, the financial markets are currently characterized by long-term Treasury bond yields at levels not seen since the late 1950's. These abnormally low yields are partly the result of monetary policy decisions taken by the Federal Reserve to free up credit markets and partly the result of a flight to quality. While yields on long-term government securities have declined, the spread between long-term Baa-rated public utility bond yields and 30-year Treasury bond yields have risen dramatically, from an average of 140 basis points

[27] My DCF-based equity risk premium test utilizes the same sample of electric utilities relied upon in the application of the DCF test.

at the end of 2006, peaking at over 520 basis points in November 2008 and are now (end of March 2009) 440 basis points above Treasury bond yields as compared to the long-run yield spread of approximately 165 basis points. The absolute cost of Baa-rated public utility debt has also risen significantly, with the yield as of the end of March 2009 close to 185 basis points higher than it was at the end of 2006.

The trends in Baa-rated public utility bond yields and spreads provide some indication of the increase in the cost of capital both in the broader market and to utilities in particular over the past 20 months. (See discussion in Section IV.A above) In contrast, the downward trend in the long-term Treasury bond yields due to the flight to quality does not capture the increased cost of capital that has occurred across a broad range of debt and equity securities. Given the divergent trends in long-term Treasury bond and Baa-rated public utility bond yields and spreads, I have estimated the equity return based on the forecast long-term Baa-rated public utility bond yield.

**Q. Over what period did you forecast bond yields for purposes of applying the DCF-based risk premium test?**

A. I used the same 2009-2013 period as I did in the application of the CAPM using the DCF-based market risk premium.

**Q. What is your 2009-2013 forecast for the long-term Baa-rated public utility bond yield?**

A. Over the period of the analysis (August 2007 to March 2009), the spread between long-term Baa-rated public utility bonds and the long-term Treasury yield has averaged 290 basis points. Adding this spread to my 2009-2013 forecast for the 30-year Treasury bond yield of 4.7% results in a forecast Baa-rated public utility bond yield of 7.6%. The resulting yield is somewhat lower than the current (end of March 2009) yield of 8.04%, representing the expectation that Treasury bond yields will rise over the period but market conditions for Baa-rated public utility bonds will improve.

**Q. What is the equity risk premium above Baa-rated public utility bond yields resulting from your analysis?**

A. The resulting equity risk premium is 4.2%. (See Schedule E-8)

**Q. What cost of equity capital does the DCF-based equity risk premium test indicate?**

A. The DCF-based risk premium test result indicates an equity risk premium relative to long-term Baa-rated public utility bond yields of approximately 4.2%. At the forecast yield of 7.6% for Baa-rated public utility bonds, the indicated cost of equity is approximately 11.8%.

## D. Conclusions From The DCF And Equity Risk Premium Tests

### 1. Summary of Market-Derived Costs of Equity

**Q. Please summarize the results of your DCF and equity risk premium tests.**

A. The table below summarizes the results of the tests.

**Table 7**

| **DCF** | |
|---|---|
| Constant-I/B/E/S | 13.6% |
| Constant-Sustainable Growth | 11.8% |
| Three-Stage | 12.4% |
| **Equity Risk Premium** | |
| CAPM forward | 11.2% |
| CAPM historic | 10.1% |
| Historic-utility vs. risk free rate | 11.1% |
| Historic-utility vs. Baa-rated public utility bonds | 11.5% |
| DCF based RP vs. Baa-rated public utility bonds | 11.8% |

The results of the various tests indicate a required equity return in the range of 10.1% (historic CAPM) to 13.6% (constant growth DCF based on I/B/E/S). Based on all of the tests, the indicated cost of equity as applied to the proxy sample of electric utilities is approximately 11.75%.

### 2. Adjustment for Market Value Capital Structures

**Q. Is the indicated 11.75% return derived from the DCF and equity risk premium tests equivalent to a fair return on equity for AmerenIP's electric utility operations?**

A. No. The DCF and equity risk premium cost of equity estimates are derived from market values of equity capital, and represent investors' expected returns on the market value. Consequently, for the purposes of determining a fair return on equity for a utility, a critical factor that needs to be recognized is that the cost of capital is determined in the capital markets. The cost of capital reflects the market value of the firms' capital, both debt and equity. The market value capital structures may be quite different from the book value capital structures. When the

market value common equity ratio is higher (lower) than the book value common equity ratio, the market is attributing less (more) financial risk to the firm than is "on the books" as measured by the book value capital structure. Higher financial risk leads to a higher cost of common equity, all other things equal.

To put this concept in common sense terms, assume that I purchased my home 10 years ago for $100,000 and took out a mortgage for the full amount. My home is currently worth $250,000 and my mortgage is now $85,000. If I were applying for a loan, the bank would consider my net worth (equity) to be $165,000 (market value of $250,000 less the $85,000 unpaid mortgage), not the "book value" of the equity in my home of $15,000, which reflects the original purchase price less the unpaid mortgage loan amount. It is the market value of my home that determines my financial risk to the bank, not the original purchase price. The same principle applies when the cost of common equity is estimated. The book value of the common equity shares is not the relevant measure of financial risk to investors; it is their market value, that is, the value at which the shares could be sold.

Regulatory convention applies the allowed equity return to a book value capital structure. Application of the market-derived cost of equity for a sample whose average market value common equity ratios have been, for example, approximately 55% to a ratemaking (book value) common equity ratio of 45% would fail to recognize the higher financial risk in the latter. To recognize this fact, the cost of equity estimated using the comparable utilities needs to be

increased when applied to a lower ratemaking book value common equity ratio. The converse is also true.

The relevant financial principles and the quantification of the incremental required equity return are as follows. The rationale for the differences in the required return on equity for companies of similar business risk but different financial risk begins with the recognition that the overall cost of capital for a firm is primarily a function of business risk. In the absence of both the deductibility of interest expense for income tax purposes and costs associated with excessive debt (e.g., bankruptcy), the overall cost of capital to a firm does not change materially when a firm changes its capital structure. Costs associated with bankruptcy and the loss of financing flexibility will increase the overall cost of capital at high degrees of leverage, but the conclusion that the cost of capital is essentially flat applies across a broad range of capital structures.

The use of debt creates a class of investors whose claims on the resources of the firm take precedence over those of the equity holder. However, the sum of the available cash flows does not change when debt is added to the capital structure. The available cash flows are now split between debt and equity holders. Since there are fixed debt costs that must be paid before the equity shareholder receives any return, the variability of the equity return increases as debt rises. The higher the debt ratio, the higher the potential volatility of the equity return. Hence, as the debt ratio rises, the cost of equity rises. The higher cost rates of both the debt and

equity offset the higher proportion of debt in the capital structure, so that the overall cost of capital does not change.

The deductibility of interest expense for corporate income tax purposes may alter the conclusion that the cost of capital is constant across all capital structures. The deductibility of interest expense for income tax purposes means that there is a cash flow advantage to equity holders from the assumption of debt. When interest expense is deductible for corporate income tax purposes, in the absence of offsetting factors, the after-tax cost of capital would tend to decline as more debt is used. However, there are offsetting factors that severely limit a company's ability to reduce its overall cost of capital by raising the debt ratio. First, there is a loss of financial flexibility and the increasing potential for bankruptcy as the debt ratio rises. The loss of financing flexibility tends to increase the cost of capital as leverage is increased. Particularly, as the percentage of debt in the capital structure increases, the credit rating of the company may decline and its cost of debt will increase.

Second, although interest expense is tax deductible at the corporate level, the corresponding interest income is taxable to individual investors at a higher rate than equity. Thus, personal income taxes on interest offset some of the advantage of using debt in the capital structure.

It is impossible to state with precision whether, within a broad range of capital structures, raising the debt ratio will leave the overall cost of capital unchanged or result in some decline. However, what is indisputable is that the cost of equity

does change when the debt ratio changes; increasing when the debt ratio increases and, conversely, decreasing when the debt ratio falls.

I have used two approaches to quantify the range of the impact of a change in financial risk on the cost of equity. The first approach is based on the widely accepted view that the overall cost of capital does not change materially over a relatively broad range of capital structures. The second approach is based on the theoretical model which assumes that the overall cost of capital declines as the debt ratio rises due to the income tax shield on interest expense. The second approach does not account for any of the factors that offset the corporate income tax advantage of debt, including the costs of bankruptcy/loss of financing flexibility, the impact of personal income taxes on the attractiveness of issuing debt, or the flow-through of the benefits of interest expense deductibility to ratepayers. Thus, the results of applying the second approach will over-estimate the impact of leverage on the overall cost of capital and understate the impact of increasing financial leverage on the cost of equity.

**Q. How do you apply the two approaches using the proxy sample of electric utilities?**

A. To quantify the required increase in the DCF and risk premium cost of equity estimates to recognize the difference in financial risk between the market value capital structures of the electric utility sample and AmerenIP's book value capital structure, the following steps were taken:

(1) Determine the market value capital structures of the sample companies over the period which corresponds to the relevant period of analysis for the specific cost of equity.

The market value of common equity is calculated by multiplying the number of shares outstanding by the price of the common stock equity. This value is added to the book value of total debt and preferred shares, which for simplicity, were assumed to be trading at par (that is, the embedded cost of debt and preferred are the same as the current cost).

The market value capital structures were calculated over three periods:

- For the DCF test, the prices used were the same as those used in the application of the DCF test, i.e., average daily closing prices over the period February 26 to March 26, 2009; the book value of debt and preferred represents the year-end 2008 amounts.

- For the CAPM test, the average monthly closing prices over the period January 2004 to December 2008 were used, consistent with the historic period over which the beta is measured. The book values of debt and preferred shares represent the averages of year-ends 2004-2008.

- For the DCF-based risk premium test, the average monthly closing prices over the period August 2007 to March 2009 were used. The

book values of debt and preferred shares represent the average of year-ends 2007 and 2008.

No market value capital structure was calculated for the purpose of the historic risk premium test. It would be impossible to accurately measure the market value capital structure represented by the underlying companies due to the changes in the composition of the indices over time.

The sample average market value common equity ratios which correspond to the DCF, CAPM and DCF-based risk premium test are shown below:

**Table 8**

| Test | Market Value Equity Ratio |
|---|---|
| **DCF** | 44% |
| **CAPM** | 56% |
| **DCF-Based RP** | 53% |

Source: AmerenIP Exhibit 12E, Schedule E-9

(2) Using the appropriate market value common equity ratio and cost of equity, estimate the electric utility sample's weighted average cost of capital using market value capital structures.

(3) Estimate the change in common equity return requirement for each of the DCF, CAPM and DCF-based risk premium tests required to account for the difference between the sample average market value common equity ratio and AmerenIP's book value common equity ratio of 44.1% (see AmerenIP Exhibit 12E, Schedule E-10).

The results are summarized in the table below:

**Table 9**

| | Market Value Equity Ratio | Cost of Equity | ROE Adjusted for AmerenIP's Equity Ratio |
|---|---|---|---|
| **DCF** | | | |
| Constant-I/B/E/S | 44% | 13.6% | 13.6% |
| Constant-Sustainable Growth | 44% | 11.8% | 11.8% |
| Three-Stage | 44% | 12.4% | 12.4% |
| **Equity Risk Premium** | | | |
| CAPM Forward | 56% | 11.2% | 12.4% |
| CAPM Historic | 56% | 10.1% | 11.1% |
| Historic – Utility vs. risk-free rate | N/A | 11.1% | 11.1% |
| Historic – Utility vs. Baa-rated public utility bonds | N/A | 11.5% | 11.5% |
| DCF-based RP vs. Baa-rated public utility bonds | 53% | 11.8% | 12.8% |
| **Recommendation** | | | **12.25%** |

On average, the difference between AmerenIP's 44.1% ratemaking common equity ratio and the relevant market value common equity ratios results in an upward adjustment of 50 basis points to the 11.75% estimated cost of equity for the proxy utilities for a recommended return on equity of 12.25%.

**Q. In Docket 07-0585, the Ameren utilities accepted Staff's recommended cost of equity. As a result, Docket 07-0585 *et al.* (Cons.) was silent on the issue of market value adjustments as the basis for establishing the cost of common equity. However, the ICC has previously rejected this approach.[28] In doing so, it has observed that the Ameren utilities do not have market traded stock**

[28] *See*, *Central Illinois Light Company d/b/a AmerenCILCO Central Illinois Public Service Company d/b/a AmerenCIPS; Illinois Power Company d/b/a AmerenIP Proposed general increase in rates, and revision to other terms and conditions of service (Tariffs filed December 27, 2005)* Docket Nos. 06-0070/06-0071/06-0072 (Cons.) November 21, 2006 at page 141

**and therefore do not have an observable market value. Please address these observations.**

A. The application of a market-derived cost of equity to the book value (ratemaking) capital structure without recognition of the financial risk differences between the market value capital structures that underpin the estimates of the cost of equity and the book value (ratemaking) capital structures of the Ameren utilities will understate the Ameren utilities' cost of equity. The absence of observable market value capital structures for the Ameren utilities does not detract from this conclusion, as the relevant comparison is between the financial risk inherent in the market value capital structures of proxy utilities and the financial risk inherent in the book value (ratemaking) capital structures of the Ameren utilities.

**Q. Have any other regulators accepted this type adjustment for differences in financial risk?**

A. Yes. The Pennsylvania Public Utility Commission (PPUC) has accepted such an adjustment in six decisions, the most recent of which was in February 2007. In Docket No. R-00049255 (Pennsylvania Public Utility Commission *et al.* v. PPL Electric Utilities Corporation, Rulemaking Proceeding), the PPUC stated:

> We find it reasonable that a financial risk adjustment, as proposed by PPL, is necessary to compensate PPL for the mismatched application of a market based cost of common equity to a book value common equity ratio. The adjustment is necessary because the DCF method produces the investor required return based on the current market price, not the return on the book value capitalization.

Most recently (March 19, 2009), the National Energy Board of Canada (NEB) accepted the appropriateness of reliance on market value capital structures.[29] Its decision stated:

> …..the Board is of the view that market-value weights should be used to emulate the actual financial risk which each capital component bears. In the Board's view, market values reflect the level of financial risk that equity holders bear for the sample companies. These market values, and ultimately the financial risk, are determined by aggregate expectations of all financial market participants. (page 28)

The NEB explicitly adopted a weighted average cost of capital for a pipeline which was based on market value capital structures. This same regulator has historically relied upon book value capital structures in conjunction with market-derived costs of equity estimated using the traditional cost of equity tests (e.g., equity risk premium).

## E. Comparable Earnings Test

### 1. Conceptual Underpinnings

**Q. Please discuss the conceptual underpinnings of the comparable earnings test.**

A. The comparable earnings test provides a measure of the fair return based on the concept of opportunity cost. Specifically, the test is derived from the premise that capital should not be committed to a venture unless it can earn a return commensurate with that available prospectively in alternative ventures of comparable risk. Since regulation is intended to be a surrogate for competition, the opportunity cost principle entails permitting utilities the opportunity to earn a

[29] National Energy Board, *Reasons for Decision: Trans Québec and Maritimes Pipelines Inc. RH-1-2008*, March 19, 2009.

return commensurate with the levels achievable by competitive firms of similar risk.

The concept that regulation is a surrogate for competition implies that the regulatory application of a fair return to an original cost rate base should result in a value to investors commensurate with that of similar risk competitive ventures. The fact that a return is applied to an original cost rate base does not mean that the original cost of the assets is the appropriate measure of their fair market value. The comparable earnings standard, as well as the principle of fairness, suggests that, if competitive industrial firms of similar risk are able to maintain the value of their assets considerably above book value, the return allowed to utilities should likewise not foreclose them from maintaining the value of their assets as reflected in current stock prices.

**Q. In Docket 06-0070/06-0071/06-0072 (Cons.), the ICC concluded that the comparable earnings test is "faulty because it incorrectly assumes that earned returns on book common equity are the same as, or representative of, investor-required returns on common equity."[30] Please respond.**

A. I agree that the comparable earnings test does not measure the investor's opportunity cost of attracting equity capital as measured relative to market values. The comparable earnings test is an implementation of the comparable earnings

[30] *See*, *Central Illinois Light Company d/b/a AmerenCILCO Central Illinois Public Service Company d/b/a AmerenCIPS; Illinois Power Company d/b/a AmerenIP Proposed general increase in rates, and revision to other terms and conditions of service (Tariffs filed December 27, 2005)* Docket Nos. 06-0070/06-0071/06-0072 (Cons.) November 21, 2006 at page 141-142.

standard, as distinguished from the cost of attracting capital standard. It provides a measure of the fair return based on the concept of opportunity cost.

Specifically, the test arises from the notion that capital should not be committed to a venture unless it can earn a return commensurate with that available prospectively in alternative ventures of comparable risk. Since regulation is a surrogate for competition, the opportunity cost principle entails permitting utilities the opportunity to earn a return commensurate with the levels achievable by competitive firms facing similar risk.

The comparable earnings test recognizes that (1) utility costs are measured in vintaged dollars and (2) rates are based on accounting costs, not economic costs. In contrast, the cost of attracting capital tests rely on costs expressed in dollars of current purchasing power, i.e., a market-related cost of capital. The comparable earnings test remains the only test that explicitly recognizes that, in the North American regulatory framework, the return is applied to an original cost (book value) rate base. The application of the comparable earnings test recognizes that, to achieve the competitive result, the measurement of the return (in percentage terms) needs to match conceptually the measurement of the assets (or in the case of the utility, the rate base) to which the return is applied.

Nevertheless, the comparable earnings test was solely applied for purposes of testing the reasonableness of the market-derived cost of equity results. The comparable earnings returns are not incorporated into my recommended ROE.

**Q. Why have you applied the comparable earnings test to competitive firms, and not utilities?**

A. Application of the test to utilities would be circular. The achieved returns of utilities are influenced by allowed returns. In contrast, the earnings of competitive firms represent returns available to alternative investments independent of the regulatory process.

### 2. Principal Application Issues

**Q. What are the principal issues arising in the application of the comparable earnings test?**

A. The principal issues in the application of the comparable earnings test are:

- Selection of a sample of industrials of reasonably comparable risk to a utility;
- Selection of an appropriate time period over which returns are to be measured in order to estimate prospective returns; and
- Assessment of the total investment risk of the sample of utilities relative to that of the selected industrials.

**Q. Please discuss the selection process.**

A. The selection process starts with the recognition that industrials are generally exposed to higher business risk, but lower financial risk, than utilities. The selection of industrials focuses on total investment risk, i.e., the combined

business and financial risks. The comparable earnings test is based on the premise that industrials' higher business risks can be offset by a more conservative capital structure, thus permitting selection of industrial samples of reasonably comparable total investment risk to a sample of utilities.

The U.S. industrials were selected as follows: The initial universe consisted of all companies actively traded in the U.S. from S&P's Research Insight database in Global Industry Classification Standard (GICS) sectors 20-30.[31] The resulting universe contained 2,585 companies. Companies were removed which:

- Are not incorporated in the U.S.;
- Had 2007 equity less than $100 million;
- Had missing or negative common equity during 1991-2007;
- Had less than five years of market data;
- Paid no dividends in any year 2004-2008;
- Traded fewer than 5% of their outstanding shares in 2007;
- Had an S&P rating below BBB-;
- Had a *Value Line* Rank of "4" or "5";

[31] The sectors represented by the GICS codes in this range are: Industrials, Consumer Discretionary and Consumer Staples. Included in these sectors are major industries such as: Food Retail, Food Distributors, Tobacco, Packaged Foods, Soft Drinks, Distillers, Household Appliances, Aerospace and Defense, Electrical Components & Equipment, Industrial Machinery, Publishing & Printing, Department Stores, and General Merchandise.

- Had a *Value* Line beta of 1.0 or higher.

These screens narrowed the universe to 91 companies. From this group, those companies whose 1996-2007 returns were greater than ±1 standard deviation from the average were removed to eliminate companies whose earnings have been chronically depressed or which have been extraordinarily profitable. The final sample of comparable risk U.S. industrials comprises 81 companies.

### 3. Period for Measurement of Returns

**Q. Over what period did you measure the industrials' returns?**

A. The measurement of returns for competitive industrials starts with historical returns. However, like every test used to estimate a fair return, this test is intended to be prospective in nature. Therefore, the returns earned in the past should be analyzed in the context of the longer-term outlook for the economy to determine the reasonableness of relying on past returns as a proxy for the future. Since returns on equity tend to be cyclical, the returns should be measured over an entire business cycle, in order to give fair representation to years of expansion and decline.

The forward-looking nature of the estimate of the fair return requires selection of a cycle that is reasonably representative of prospective economic conditions. The business cycle, measured from peak to peak, covering the period 1991-2007 meets those criteria. It reflects a nominal rate of growth (5.2%; see AmerenIP

Exhibit 12E, Schedule E-1) that is very close to the 5.0% consensus forecast of nominal GDP growth for the longer-term.[32]

The achieved returns on equity of the 81 companies for 1991-2007 are as follows:

**Table 10**

| | |
|---|---|
| Average | 15.9% |
| Median | 14.9% |
| Average of Annual Medians | 15.7% |

Source: AmerenIP Exhibit 12E, Schedule E-11

### 4. Relative Risk Assessment

**Q. What are the industrial sample's quantitative risk measures relative to those of the electric utilities?**

A. The industrial sample has the following risk measures, compared to the sample of electric utilities:

**Table 11**

| | **Industrials** | | **Sample of 29 Electric Utilities** | |
|---|---|---|---|---|
| | Median | Mean | Median | Mean |
| S&P Debt Ratings | A- | A- | BBB | BBB+ |
| *Value Line* Risk Measures: | | | | |
| Safety | 3 | 2 | 2 | 2 |
| Earnings Predictability | 85 | 79 | 60 | 56 |
| Financial Strength | B++ | A | B++ | B++ |
| Beta | 0.80 | 0.80 | 0.70 | 0.72 |

Source: AmerenIP Exhibit 12E, Schedules E-3 and E-11

[32] Blue Chip *Economic Indicators,* March 10, 2009.

A comparison of risk statistics for the electric utilities and industrials indicates that, on balance, the electric utilities and the industrials are in approximately the same risk class and would be considered comparable risk investments.

### 5. Relevance of Comparable Earnings Test

**Q. What is the relevance of the comparable earnings test?**

A. Since the objective of regulation is to simulate competition, it is critical that the determination of a fair return explicitly consider the returns achievable by competitive firms on a risk-adjusted basis. This avoids the circularity that a focus on other regulated companies alone entails and ensures that the objective of regulation is achieved.

The results of the comparable earnings test can be used as an indicator of whether the market-based test cost of equity results are reasonable. The DCF test and equity risk premium tests, as adjusted for AmerenIP's book value capital structure, indicate a fair return of 12.25%. The comparable earnings test indicates that competitive firms of similar investment risk to the sample of electric utilities are able to earn returns on book value of 15.0-16.0%. An allowed return on equity for AmerenIP's electric utility operations of 12.25%, as indicated by the DCF and equity risk premium tests as adjusted for AmerenIP's book value capital structure, is conservative when compared to the earnings level of relatively comparable risk unregulated companies.

## F. Recommendation

**Q. Please summarize your recommendation.**

A. As indicated earlier in my testimony, my recommendation is based on the results of the market-derived tests, the discounted cash flow and equity risk premium tests. The DCF and equity risk premium test results as adjusted for AmerenIP's book value capital structure indicate that a fair return on equity for AmerenIP's electric utility operations is 12.25%.

## VI. CONCLUSION

**Q. Does this conclude your testimony?**

A. Yes, it does.

# APPENDIX

## QUALIFICATIONS OF KATHLEEN C. McSHANE

Kathleen McShane is President and senior consultant with Foster Associates, Inc., where she has been employed since 1981. She holds an M.B.A. degree in Finance from the University of Florida, and M.A. and B.A. degrees from the University of Rhode Island. She has been a CFA charterholder since 1989.

Ms. McShane worked for the University of Florida and its Public Utility Research Center, functioning as a research and teaching assistant, before joining Foster Associates. She taught both undergraduate and graduate classes in financial management and assisted in the preparation of a financial management textbook.

At Foster Associates, Ms. McShane has worked in the areas of financial analysis, energy economics and cost allocation. Ms. McShane has presented testimony in more than 190 proceedings on rate of return, capital structure and other ratemaking issues before federal, state, provincial and territorial regulatory boards, on behalf of U.S. and Canadian gas distributors and pipelines, electric utilities and telephone companies. These testimonies include the assessment of the impact of business risk factors (e.g., competition, rate design, contractual arrangements) on capital structure and equity return requirements. She has also testified on various ratemaking issues, including deferral accounts, rate stabilization mechanisms, excess earnings accounts, cash working capital, and rate base issues. Ms. McShane has provided consulting services for numerous U.S. and Canadian companies on financial and regulatory issues, including financing, dividend policy, corporate structure, cost of capital, automatic adjustments for return on equity, form of regulation (including performance-based regulation), unbundling, corporate separations, stand-alone cost of debt, regulatory climate, income tax allowance for partnerships, change in fiscal year end, treatment of inter-corporate financial transactions, and the impact of weather normalization on risk.

Ms. McShane was principal author of a study on the applicability of alternative incentive regulation proposals to Canadian gas pipelines. She was instrumental in the design and preparation of a study of the profitability of 25 major U.S. gas pipelines, in which she developed estimates of rate base, capital structure, profit margins, unit costs of providing services, and various measures of return on investment. Other studies performed by Ms. McShane include a comparison of municipal and privately owned gas utilities, an analysis of the appropriate capitalization and financing for a new gas pipeline, risk/return analyses of proposed water and gas distribution companies and an independent power project, pros and cons of performance-based regulation, and a study on pricing of a competitive product for the U.S. Postal Service. She has also conducted seminars on cost of capital for regulated utilities, with focus on the Canadian regulatory arena.

## Publications, Papers and Presentations

- *Utility Cost of Capital: Canada vs. U.S.,* presented at the CAMPUT Conference, May 2003.
- *The Effects of Unbundling on a Utility's Risk Profile and Rate of Return*, (co-authored with Owen Edmondson, Vice President of ATCO Electric), presented at the Unbundling Rates Conference, New Orleans, Louisiana sponsored by Infocast, January 2000.
- *Atlanta Gas Light's Unbundling Proposal: More Unbundling Required?* presented at the 24th Annual Rate Symposium, Kansas City, Missouri, sponsored by several commissions and universities, April 1998.
- *Incentive Regulation: An Alternative to Assessing LDC Performance*, (co-authored with Dr. William G. Foster), presented at the Natural Gas Conference, Chicago, Illinois sponsored by the Center for Regulatory Studies, May 1993.
- *Alternative Regulatory Incentive Mechanisms*, (co-authored with Stephen F. Sherwin), prepared for the National Energy Board, Incentive Regulation Workshop, October 1992.

# EXPERT TESTIMONY/OPINIONS
# ON
# RATE OF RETURN AND CAPITAL STRUCTURE

| Client | Date |
|---|---|
| Alberta Natural Gas | 1994 |
| AltaGas Utilities | 2000 |
| Ameren (Central Illinois Public Service) | 2000, 2002, 2005, 2007 (2 cases) |
| Ameren (Central Illinois Light Company) | 2005, 2007 (2 cases) |
| Ameren (Illinois Power) | 2004, 2005, 2007 (2 cases) |
| Ameren (Union Electric) | 2000 (2 cases), 2002 (2 cases), 2003, 2006 (2 cases) |
| ATCO Electric | 1989, 1991, 1993, 1995, 1998, 1999, 2000, 2003 |
| ATCO Gas | 2000, 2003, 2007 |
| ATCO Pipelines | 2000, 2003, 2007 |
| ATCO Utilities | 2008 |
| Bell Canada | 1987, 1993 |
| Benchmark Utility Cost of Equity (British Columbia) | 1999 |
| Canadian Western Natural Gas | 1989, 1996, 1998, 1999 |
| Centra Gas B.C. | 1992, 1995, 1996, 2002 |
| Centra Gas Ontario | 1990, 1991, 1993, 1994, 1995 |
| Direct Energy Regulated Services | 2005 |
| Dow Pool A Joint Venture | 1992 |
| Edmonton Water/EPCOR Water Services | 1994, 2000, 2006, 2008 |
| Enbridge Gas Distribution | 1988, 1989, 1991-1997, 2001, 2002 |
| Enbridge Gas New Brunswick | 2000 |
| Enbridge Pipelines (Line 9) | 2007 |
| Enbridge Pipelines (Southern Lights) | 2007 |
| FortisBC | 1995, 1999, 2001, 2004 |
| Gas Company of Hawaii | 2000, 2008 |

| | |
|---|---|
| Gaz Metropolitain | 1988 |
| Gazifère | 1993, 1994, 1995, 1996, 1997, 1998 |
| Generic Cost of Capital, Alberta (ATCO and AltaGas Utilities) | 2003 |
| Heritage Gas | 2004, 2008 |
| Hydro One | 1999, 2001, 2006 (2 cases) |
| Insurance Bureau of Canada (Newfoundland) | 2004 |
| Laclede Gas Company | 1998, 1999, 2001, 2002, 2005 |
| Laclede Pipeline | 2006 |
| Mackenzie Valley Pipeline | 2005 |
| Maritimes NRG (Nova Scotia) and (New Brunswick) | 1999 |
| Multi-Pipeline Cost of Capital Hearing (National Energy Board) | 1994 |
| Natural Resource Gas | 1994, 1997, 2006 |
| New Brunswick Power Distribution | 2005 |
| Newfoundland & Labrador Hydro | 2001, 2003 |
| Newfoundland Power | 1998, 2002, 2007 |
| Newfoundland Telephone | 1992 |
| Northland Utilities | 2008 (2 cases) |
| Northwestel, Inc. | 2000, 2006 |
| Northwestern Utilities | 1987, 1990 |
| Northwest Territories Power Corp. | 1990, 1992, 1993, 1995, 2001, 2006 |
| Nova Scotia Power Inc. | 2001, 2002, 2005, 2008 |
| Ontario Power Generation | 2007 |
| Ozark Gas Transmission | 2000 |
| Pacific Northern Gas | 1990, 1991, 1994, 1997, 1999, 2001, 2005 |
| Plateau Pipe Line Ltd. | 2007 |
| Platte Pipeline Co. | 2002 |
| St. Lawrence Gas | 1997, 2002 |
| Southern Union Gas | 1990, 1991, 1993 |
| Stentor | 1997 |
| Tecumseh Gas Storage | 1989, 1990 |
| Telus Québec | 2001 |

| | |
|---|---|
| Terasen Gas | 1992, 1994, 2005, 2009 |
| Terasen Gas (Whistler) | 2008 |
| TransCanada PipeLines | 1988, 1989, 1991 (2 cases), 1992, 1993 |
| TransGas and SaskEnergy LDC | 1995 |
| Trans Québec & Maritimes Pipelines | 1987 |
| Union Gas | 1988, 1989, 1990, 1992, 1994, 1996, 1998, 2001 |
| Westcoast Energy | 1989, 1990, 1992 (2 cases), 1993, 2005 |
| Yukon Electrical Company | 1991, 1993, 2008 |
| Yukon Energy | 1991 1993 |

# EXPERT TESTIMONY/OPINIONS
# ON
# OTHER ISSUES

| Client | Issue | Date |
|---|---|---|
| New Brunswick Power Distribution | Interest Coverage/Capital Structure | 2007 |
| Heritage Gas | Revenue Deficiency Account | 2006 |
| Hydro Québec | Cash Working Capital | 2005 |
| Nova Scotia Power | Cash Working Capital | 2005 |
| Ontario Electricity Distributors | Stand-Alone Income Taxes | 2005 |
| Caisse Centrale de Réassurance | Collateral Damages | 2004 |
| Hydro Québec | Cost of Debt | 2004 |
| Enbridge Gas New Brunswick | AFUDC | 2004 |
| Heritage Gas | Deferral Accounts | 2004 |
| ATCO Electric | Carrying Costs on Deferral Account | 2001 |
| Newfoundland & Labrador Hydro | Rate Base, Cash Working Capital | 2001 |
| Gazifère Inc. | Cash Working Capital | 2000 |
| Maritime Electric | Rate Subsidies | 2000 |
| Enbridge Gas Distribution | Principles of Cost Allocation | 1998 |
| Enbridge Gas Distribution | Unbundling/Regulatory Compact | 1998 |
| Maritime Electric | Form of Regulation | 1995 |
| Northwest Territories Power | Rate Stabilization Fund | 1995 |
| Canadian Western Natural Gas | Cash Working Capital/ Compounding Effect | 1989 |
| Gaz Metro/ Province of Québec | Cost Allocation/ Incremental vs. Rolled-In Tolling | 1984 |