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MISSOURI PUBLIC SERVICE COMMISSION
UTILITY SERVICES DIVISION

REBUTTAL TESTIMONY

OF

DAVID MURRAY

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

CASE NO. ER-2012-0166

Jefferson City, Missouri
August 2012

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1 the specific technical concerns that I have with each witnesses' methodologies in this case,
2 giving particular attention to Mr. Hevert's methodologies because his COE estimates are
3 much higher than Mr. Gorman's COE estimates.

4 **SUMMARY OF MR. HEVERT'S AND MR. GORMAN'S COST OF EQUITY**
5 **ESTIMATES**

6 Q. Please summarize Mr. Hevert's estimated COE and his resulting
7 recommended ROE.

8 A. Mr. Hevert's recommended ROE is 10.75%, based primarily on his use of two
9 Discounted Cash Flow ("DCF") methodologies, a constant-growth DCF and a multi-stage
10 DCF. Mr. Hevert's recommended ROE of 10.75% is based on the mid-point of his estimated
11 COE range of 10.50% to 11.00%. Mr. Hevert also applies the Capital Asset Pricing Model
12 ("CAPM") and the risk premium methods to test the reasonableness of his DCF estimates.
13 Mr. Hevert's CAPM results are based on two different forward looking equity risk premium
14 estimates. The first is based on his application of the DCF to the S&P 500 to determine an
15 expected market return. The second is based on a novel approach that involves analyzing
16 excess returns as compared to option volatility (Sharpe/Vix ratio). Mr. Hevert's risk
17 premium methodology is based on the spread of allowed ROEs as they compare to 30-year
18 Treasury bond yields over an historical period.

19 Q. Please summarize Mr. Gorman's estimated COE and resulting recommended
20 ROE.

21 A. Mr. Gorman's recommended ROE is 9.30%, based on an estimated COE
22 range of 9.20% to 9.40%. Mr. Gorman uses three primary methodologies (DCF, CAPM and
23 risk premium). Mr. Gorman applied his DCF and CAPM to the same proxy group selected

1 by Mr. Hevert. Mr. Gorman applied three variants of the DCF – a constant-growth DCF
2 using equity analysts' growth rates, a constant-growth DCF using sustainable growth rates,
3 and a multi-stage DCF analysis (see Table 4 on page 26 of Mr. Gorman's Direct Testimony).
4 Mr. Gorman's COE estimates for the various methodologies were as follows: 9.40% using
5 the DCF, 8.70% using the CAPM and 9.20% using a risk premium method (see Table 5 on
6 page 36 of Mr. Gorman's Direct Testimony). Because the 9.40% COE estimate using the
7 DCF methodology was based the high-end of Mr. Gorman's DCF estimates and this high-end
8 estimate was estimated through use of the multi-stage DCF methodology, it appears
9 Mr. Gorman gave the multi-stage DCF method primary weight for the COE generated
10 through his DCF analyses.

11 Q. Please compare and contrast Mr. Hevert's and Mr. Gorman's COE
12 methodologies.

13 A. Both witnesses use variations of the same three methodologies, the DCF
14 method, risk premium method and the CAPM method.

15 Each witness performs a constant-growth DCF using equity analysts' 5-year EPS
16 forecasts as their assumed constant growth rate. Although there are various reasons
17 why each witness' constant-growth DCF estimate is different from the other, the primary
18 driver of the higher COE estimates using this approach is the assumption that dividends per
19 share ("DPS") can grow in perpetuity at the same rate as equity analysts' 5-year EPS
20 projections. Staff has **never** seen an equity analyst use his/her EPS projections in this
21 fashion to estimate a fair value for utility stocks. If equity analysts' investment advice is not
22 based on this assumption, it is not logical to assume that this assumption is embodied in stock
23 prices.

1 Each witness performs a multi-stage DCF analysis. For at least one version of their
2 multi-stage DCF analyses, each witness assumes that regulated electric utility companies'
3 DPS will grow in perpetuity at the same rate as a long-term projected overall economic
4 growth rate, as measured by gross domestic product ("GDP"). Staff provided an extensive
5 discussion of this issue in the Staff Report. For this reason, Staff will only briefly summarize
6 the fallacies of this assumption, based both on empirical evidence and logic. Most
7 importantly, Staff has **never** seen an investment analyst make this assumption when directly
8 estimating the value of regulated electric utility assets or indirectly through the valuation of
9 regulated electric utility stocks. Considering that ROR witnesses are attempting to solve for
10 the required return used by investors in their analyses, using growth rates that have no
11 practical or empirical support will cause unreliable COE estimates. Although Staff disagrees
12 with the use of an aggregate GDP growth rate as a proxy for electric utility perpetual growth,
13 if the Commission accepts this logic, then it should rule conservatively in determining a
14 long-term GDP growth estimate. Although Mr. Gorman's projected economic growth is
15 within a range of reasonableness, it is at the high end of most projections. Mr. Hevert's GDP
16 growth rate is well outside the zone of reasonableness of long-term expected growth for
17 aggregate GDP.

18 Each witness performs a similar risk premium methodology. Both evaluate the
19 historical spread between allowed ROEs and a selected bond yield index. Unlike Mr. Hevert,
20 Mr. Gorman does not adjust his spread based on a regression analysis. The problem with
21 performing a regression analysis on the spread between allowed ROEs and a bond yield
22 index is that this analysis is not based on COE estimates currently implied in the market.

1 Mr. Hevert's adjustment perpetuates the inherent circularity of setting the allowed ROE
2 based on other allowed ROEs rather than market-driven COE estimates.

3 Finally, each witness performs some type of CAPM analysis. This methodology
4 provides the most widely-divergent results between the witnesses. Mr. Hevert's much higher
5 CAPM results can be attributed to his ex-ante, i.e., forward-looking, equity risk premium
6 estimates that are far higher than those used by investors when valuing utility stocks.
7 Although Mr. Hevert did not rely on his CAPM to directly estimate the COE in this case,
8 Staff will provide information that shows the upward bias in Mr. Hevert's COE analysis
9 when considering the lower expected returns used by professional investors. Mr. Gorman
10 estimates his equity risk premiums based on historical data, which explains his lower CAPM
11 results.

12 **STAFF'S SPECIFIC CONCERNS WITH MR. HEVERT'S COST OF COMMON**
13 **EQUITY ANALYSIS**

14 Q. What is the primary reason for the wide discrepancy between your COE
15 estimate and Mr. Hevert's COE estimate in this case?

16 A. Growth rate assumptions with the perpetual growth rate having the largest
17 overall impact. Mr. Hevert relies primarily on his multi-stage DCF analyses to support his
18 COE estimate and ROE recommendation of 10.75%. I also relied primarily upon my multi-
19 stage DCF cost-of-equity estimate in estimating a COE range in the high 7% to high 8%
20 range, even though I ultimately recommended an ROE of 9%. Consequently, my testimony
21 will focus on this methodology in particular. Obviously, we have fairly fundamental
22 differences in our execution of this methodology since we have over a 200 basis point
23 difference in our COE estimates. Although our perpetual growth rate is the largest cause for

1 our large difference, there are also other reasons for our widely divergent estimates. I will
2 address each of these issues to help explain how Mr. Hevert and I can arrive at such different
3 COE estimates even though we both rely primarily on the same methodology. However, in
4 order to be able to identify the differences due to methodology and assumed inputs, we need
5 to start with the same comparable group, i.e. use the same proxy group, and use capital
6 market information as of the same date. I will develop what I consider to be a reasonable
7 “control group” that I believe Mr. Hevert would accept at least for purposes of helping
8 reconcile the differences between our multi-stage methodologies.

9 Although Mr. Hevert did not rely as heavily on the other methods for purposes of his
10 COE estimate, I will address my major points of concern with these methodologies and the
11 assumptions used in these methodologies for the main purpose of calling Mr. Hevert’s
12 credibility into question regarding the reasonableness of assumptions he may use in any COE
13 model.

14 **Proxy Group**

15 Q. Did Mr. Hevert select an appropriate proxy group to estimate a COE
16 consistent with Ameren Missouri’s low-risk, rate-regulated electric utility operations?

17 A. No.

18 Q. What companies should be eliminated from Mr. Hevert’s proxy group?

19 A. Edison International, Otter Tail Corporation and Integrys Energy.

20 Q. Why should Edison International be eliminated?

21 A. Edison International has significant merchant generation exposure through its
22 subsidiary, Edison Mission Group (“EMG”). EMG makes up approximately 20% of Edison
23 International’s assets and revenues. It is Ameren’s exposure to this similar business risk

1 through Ameren Generating Company (“Genco”), held under Ameren Energy Resources
2 Company, LLC (“AER”), that caused Staff to exclude Ameren from its proxy group.

3 Q. Are there significant business risk differences between regulated electric
4 utility operations and non-regulated electric power operations?

5 A. Absolutely. The current low natural gas price environment and sluggish
6 economic growth environment has caused this segment of the electric utility business to
7 struggle significantly. In fact, most independent power companies cannot support an
8 investment grade credit rating.

9 Q. Is this currently true for both Ameren’s and Edison International’s non-
10 regulated subsidiaries, Genco and EMG, respectively?

11 A. Yes. Genco currently has an S&P credit rating of ‘BB-’ and EMG currently
12 has an S&P rating of ‘CCC’.

13 Q. Why are these operations viewed so negatively by rating agencies?

14 A. Because they are not protected by the monopoly status afforded to generating
15 facilities that are under the protection of rate regulation. Basically, regardless of the type of
16 fuel, the efficiency of the plant, and/or the current economic climate, the recovery of
17 expenses and capital costs for non-regulated investments are at the mercy of the market.

18 Q. Is there a significant difference in COE estimates used to estimate the value of
19 regulated electric utility companies compared to that of non-regulated merchant generation
20 operations?

21 A. Yes. Staff attempted to discover (through Staff Data Request No. 253) more
22 recent COE estimates Ameren used for purposes of discounting expected cash flow for
23 non-regulated assets when it determined it had to write-down its Duck Creek plant by

1 \$377 million in the first quarter of 2012. Staff considers these types of analysis to be helpful
2 in testing the reasonableness of rate case COE estimates because it is necessary to estimate
3 the COE appropriate for the risk of the asset being valued. Because this type of analysis is
4 performed for purposes of reporting the company's financial condition to investors, it is
5 presumed that this would limit the likelihood a company would use unreasonable
6 assumptions. However, Ameren Missouri objected to this data request on the basis that this
7 information was not under its possession or control and it would not lead to relevant
8 information for purposes of setting Ameren Missouri's rates. Fortunately, in Ameren
9 Missouri's last rate case, Staff was able to discover information that indicated that Ameren
10 used a cost of equity for its non-regulated operations that was over twice that used for
11 its regulated utility operations (** ____ ** for regulated as compared to ** ____ ** for
12 non-regulated). If Ameren were to use rates anywhere close to those estimated by
13 Mr. Hevert for Ameren's regulated electric utility operations, the estimated value of these
14 assets would be significantly less than Ameren estimated itself for purposes of financial
15 reporting.

16 Because Staff believes the COE for regulated electric utility operations has declined
17 since Ameren Missouri's last rate case, at least on relative terms, it would seem logical to
18 conclude that a 2-to-1 ratio in COE would still hold for regulated versus non-regulated
19 electric utility operations. Consequently, we will assume that Edison International's
20 relationship is similar, which seems likely considering that EMG has a lower credit rating
21 than Genco. Knowing that Mr. Hevert's multi-stage DCF cost of equity estimate is based on
22 Edison International's consolidated operations, Mr. Hevert's 11.15% COE estimate
23 necessarily has to be based on the weighted average cost of equity of both its regulated and

1 non-regulated operations. According to SNL Energy, EMG accounts for roughly 20% of
2 Edison International's consolidated revenues and assets. Based on these weightings and a
3 2- to-1 COE ratio between non-regulated and regulated operations, this would necessitate a
4 downward COE adjustment of approximately 185 basis points. However, because this is just
5 one company of the 11 companies used by Mr. Hevert, the adjustment would be 1/11 of this
6 if equal weight is given to each company. Staff notes that Mr. Hevert did not provide
7 information in his direct testimony that indicates he reviewed all of his comparable
8 companies for the possibility of higher risks due to non-regulated operations, even though he
9 did review different regulatory mechanisms for each holding company's regulated electric
10 utility operations. This illustrates the bias of Mr. Hevert's analysis in only reviewing
11 elements he believes may allow the Commission to justify a higher allowed ROE for Ameren
12 Missouri's low-risk regulated electric utility operations.

13 Q. Why should Otter Tail Corporation ("Otter Tail") be eliminated from
14 Mr. Hevert's proxy group?

15 A. Otter Tail has several business segments that are sizeable enough that they are
16 required to be reported as separate segments in Otter Tail's financial statements. Under
17 Generally Accepted Accounting Principles ("GAAP"), companies must report certain
18 disaggregated financial information if a business segment makes up at least 10% of a
19 company's assets or revenues. Otter Tail currently has four other reportable business
20 segments (Wind Energy, Manufacturing, Construction, and Plastics) in addition to its
21 regulated electric utility operations. Staff has not observed expert COE estimates for these
22 industries nor has Staff created its own COE estimates for these industries. However, Staff
23 notes that due to Otter Tail's exposure to these industries, S&P ranks Otter Tail's business

1 risk profile as “satisfactory,” which is actually below the business risk profile S&P assigns to
2 Edison International due to its non-regulated merchant generation operations. Consequently,
3 this would imply that the COE of these other operations may be at least twice as high as that
4 of the regulated electric utility operations. However, since Staff is not attempting to
5 “correct” Mr. Hevert’s analysis, but just explain why Staff would have excluded this
6 company from the proxy group, Staff will not attempt to quantify how much Otter Tail’s cost
7 of equity should be adjusted.

8 Q. Why should Integrys Energy Group, Inc. (“Integrys”) be eliminated from
9 Mr. Hevert’s Proxy Group?

10 A. Integrys does not receive a majority of its revenues from regulated electric
11 utility operations. According to the May 2012 AUS Utility Report, Integrys received only
12 28% of its revenues from regulated electric utility operations. Although Integrys does not
13 receive a majority of its revenues from regulated electric utility operations, it does receive an
14 additional 42% of revenues from regulated gas utility operations. The remainder of its
15 revenues are generated by Integrys’ non-regulated subsidiary, Integrys Energy Services.
16 Integrys Energy Services markets electricity and natural gas in retail markets, serving
17 commercial and industrial customers, as well as direct and “aggregated” small commercial
18 and residential customers.¹ Although Integrys Energy Services' business risks are higher
19 than Integrys' regulated electric and natural gas utility operations, Staff does not understand
20 this risk to be as high as the business risks associated with Edison International’s and Otter
21 Tail’s non-regulated operations. Regardless, Staff would still exclude this company from a

¹ Integrys Energy Group, Inc., 2011 SEC Form 10-K Filing.

1 proxy group intended to estimate the COE for Ameren Missouri's regulated electric utility
2 operations.

3 Q. After eliminating all three of these companies from Mr. Hevert's proxy group,
4 what company is in Mr. Hevert's proxy group that is not in your proxy group?

5 A. Portland General Electric.

6 Q. Do you have a fundamental problem with including Portland General Electric
7 in a proxy group to estimate the COE for Ameren Missouri's regulated electric utility
8 operations?

9 A. No. Staff typically prefers to have at least ten years of historical data to
10 review for purposes of companies it includes in its proxy group, but this does not necessarily
11 cause the company's risk profile to be inconsistent with that of a regulated electric utility
12 company.

13 Q. If you included Portland General Electric in your proxy group and eliminated
14 Alliant, Xcel and Wisconsin Energy, would you be working from a proxy group that includes
15 companies that both you and Mr. Hevert considered comparable to Ameren Missouri?

16 A. Yes.

17 Q. Will this help isolate the effect of the assumptions you and Mr. Hevert make
18 in your multi-stage DCF analysis?

19 A. Yes. This is why I would classify this proxy group as a "control group."

20 Q. Do you still consider Alliant, Excel and Wisconsin Energy to be appropriate
21 companies for your COE estimate?

1 A. Yes. I am just establishing the control group for purposes of identifying the
2 major causes for the differences in Mr. Hevert's multi-stage COE estimate compared to my
3 multi-stage COE estimate.

4 **Comparison of Staff's and Mr. Hevert's Multi-Stage Methodologies**

5 Q. Using the control group along with capital market information Mr. Hevert had
6 available at the time when he did his analysis (through year-end 2011), what COE is
7 indicated from your multi-stage methodology compared to Mr. Hevert's multi-stage
8 methodology?

9 A. Using my high-end perpetual growth rate of 4%, I estimate a COE of 8.81%
10 (*see* Schedule 1), whereas Mr. Hevert's methodology using a 5.61% perpetual growth rate
11 results in a COE estimate of 10.62% (*see* Schedule 2), a difference of 181 basis points.

12 Q. How will you approach reconciling the differences between Mr. Hevert's and
13 your COE estimate using the multi-stage DCF methodology?

14 A. I will start with my spreadsheet model in which I estimated a COE of 8.81%
15 and then I will make incremental changes to the assumptions in the spreadsheet model to
16 gradually increase the COE until it equals the results achieved using Mr. Hevert's
17 spreadsheet model. This will allow for an understanding of the sensitivity of the model to
18 our differing assumptions.

19 Q. How much of this sensitivity is due to the assumed perpetual growth rate?

20 A. If I had used a 5.61% perpetual growth rate my indicated COE would have
21 been 10.03% (*see* Schedule 3). This is a difference of 122 basis points (10.03% – 8.81%).
22 Consequently, using a reasonable perpetual growth rate is critical to estimating a reliable
23 COE.

1 Q. This still leaves an approximate 60 basis point difference, what is the next
2 major factor that causes a higher estimate using Mr. Hevert's methodology?

3 A. Another approximate 22 basis points (10.25% - 10.03%) can be explained by
4 Mr. Hevert's use of the mid-year discounting convention (*see* Schedule 4).

5 Q. What upward bias did Mr. Hevert create by combining a mid-year discounting
6 convention with the use of 5-year compound annual EPS growth rate forecasts?

7 A. Mr. Hevert essentially took 5-year compound EPS growth rates and
8 compressed them into 4.5 years. Because Mr. Hevert assumes the terminal period is in year
9 4.5 rather than year 5, this causes a higher growth rate than those that were provided by
10 equity analysts.

11 If one applies mid-year discounting to annual compound growth rates, then it is
12 necessary to adjust the growth rates applied to the assumed cash flows. Mr. Hevert applies
13 5-year annual compound growth rates to the previous year's EPS to arrive at annual EPS
14 estimates for the next 5-years. An example using one of Mr. Hevert's comparable companies
15 will illustrate how using the mid-year convention without making a corresponding
16 adjustment to analysts' 5-year EPS projections results in a compound annual growth rate
17 higher than analysts' actual estimates.

18 Mr. Hevert indicates that the consensus 5-year annual compound EPS growth rate
19 forecasts for American Electric Power was 4.12%. Mr. Hevert correctly applies this growth
20 rate to the current EPS to determine estimates for annual EPS over the next 5 years.
21 However, when converting the EPS forecasts into cash flows, Mr. Hevert assumes an
22 investor will realize the full annual compound growth rate estimate within the first half-year
23 of his multi-stage DCF analysis. Consequently, Mr. Hevert is taking analysts' 5-year annual

1 compound growth rate forecasts and assuming this full growth can be achieved in 4.5 years.
2 Using a 4.5 year growth rate period rather than a 5-year growth rate period inflates the annual
3 compound growth rate to 4.59% from the actual 4.12% provided by analysts (*see* Schedule
4 5). Considering the fact that Mr. Hevert makes this assumption in the early stages of the
5 multi-stage methodology, this problem is magnified due to the compounding of this higher
6 value into perpetuity.

7 Q. What causes the remaining 37 basis point difference between your and
8 Mr. Hevert's multi-stage DCF COE estimates for the control group?

9 A. In Schedule 6, Staff reproduced Mr. Hevert's 10.62% COE using the control
10 group. The increase in the COE from 10.25% to 10.62% is caused by the assumed cash
11 flows during the first 14.5 years of the model. Mr. Hevert estimates the EPS over the next
12 fifteen years, assumes a certain dividend payout ratio for each of these years, and then
13 assumes the payout ratio will converge to a constant average payout ratio. This methodology
14 results in some fairly unreasonable assumptions about expected dividend payments.

15 For example, Hevert's assumed dividend for Pinnacle West in 2011 was \$2.47 when
16 it was actually \$2.10 and had been for 4 years prior to 2011. Value Line expects Pinnacle
17 West's dividend to be \$2.10 in 2012 as well. However, Hevert's methodology actually
18 expects it to increase to \$2.52 in 2012. To be fair, there are a couple of companies in
19 Hevert's proxy group (American Electric Power and Portland General Electric) that have a
20 Value Line expected dividend that is higher than the dividend projected by Hevert using his
21 methodology. However, on average, Hevert's methodology results in higher expected
22 dividends for his proxy group than those that are projected by Value Line. This inflates
23 Hevert's COE estimate.

1 Q. What are the implied dividend growth rates for the proxy group of 8
2 companies for the first 14.5 years of Mr. Hevert's multi-stage DCF analysis?

3 A. The 14.5-year annual compound growth rates in DPS average 6.26% for the
4 8-company control group. This is based on a range of growth of 14.5-year annual compound
5 growth rates of 4.71% for Pinnacle West and 8.51% for Idacorp (see Schedule 7).

6 Q. Is a DPS growth rate of this magnitude consistent with a sustainable DPS
7 growth rate for regulated electric utilities?

8 A. No. As Staff discussed in the Staff's Report, Ameren itself indicated that a
9 ** ____ ** growth rate is what they would expect for their regulated utility assets.

10 Q. Applying the same dividend growth rate that Ameren itself considers
11 sustainable for its regulated utility assets, what COE would be implied from the proxy group?

12 A. ** ____ **

13 Q. So, doesn't the other 37 basis point difference in your and Mr. Hevert's COE
14 estimates from your multi-stage DCF analyses boil down to the assumed dividend growth
15 rates in the first two stages of the model?

16 A. Yes.

17 Q. Approximately how much of the COE difference in your multi-stage DCF
18 analyses comes down to the assumed growth rates throughout all of the stages of the model?

19 A. 160 basis points.

20 Q. Have regulated electric utility companies ever been able to grow their DPS
21 and/or EPS over the long-term at anywhere near the growth rates Mr. Hevert uses throughout
22 all stages of his multi-stage DCF analysis?

1 A. No. I provide extensive testimony in the Staff's Report that clearly
2 demonstrates that electric utilities have never been able to grow at these rates due to
3 numerous factors. No rational investor would use growth rates for the long-term similar to
4 those proposed by Mr. Hevert.

5 **General Comments about Hevert's Multi-Stage DCF**

6 Q. Mr. Hevert's multi-stage DCF assumes that his electric utility industry proxy
7 group will grow at the same rate of the economy in perpetuity. Why is this assumption
8 unreasonable?

9 A. The simplest way to illustrate the fallacy of Mr. Hevert's use of GDP growth
10 as the assumed perpetual growth rate for the electric utility industry is to consider the impact
11 of the application of this logic to the S&P 500 index. Because the S&P 500 index is
12 considered a proxy for the U.S. stock market, it intuitively makes sense that the expected
13 long-term growth of the S&P 500 may be consistent with the expected growth in GDP.
14 However, because the companies in the S&P 500 tend to have better growth prospects on
15 average than the electric utility industry, the dividend payout ratio and the dividend yield is
16 lower than that of the electric utility industry. This would imply that the growth rate for the
17 electric utility industry would have to be lower than an aggregate growth rate, i.e. GDP, used
18 for the U.S. market, i.e. the S&P 500. Using Mr. Hevert's assumed GDP growth rate of
19 5.61% in a multi-stage DCF analysis of the S&P 500 index results in an implied cost of
20 equity of 8.97% for the market as a whole (see Schedule 8).² Applying this same assumption
21 in Mr. Hevert's 90-day average stock price multi-stage DCF, results in an estimated COE of
22 10.76% for his regulated electric utility proxy group. The COE estimates derived from

² <http://www.standardandpoors.com/indices/sp-500/en/us/?indexId=spusa-500-usdof--p-us-l-->

1 Mr. Hevert's multi-stage DCF analysis using GDP as a proxy for electric utility perpetual
2 growth defies basic risk and return principles. The S&P 500 has a beta of 1.0 because it is
3 considered to be the market of available investments. Electric utilities tend to have an
4 average beta of 0.7, which implies that they are 30% less risky than the market. Mr. Hevert's
5 DCF assumptions result in COE estimates that contradict the principles of risk and return.

6 Q. If investors assumed that the perpetual growth rate of the S&P 500 was higher
7 than expected GDP growth, would this not provide a higher implied cost of equity for the
8 S&P 500?

9 A. Yes. This is exactly why the debate on a DCF estimated cost of equity
10 revolves around the constant growth rate in a single-stage DCF and the perpetual growth rate
11 in a multi-stage DCF analysis.

12 Q. Are you aware of support from the curriculum in Chartered Financial Analyst
13 ("CFA") Program that suggests that an implied expected long-term rate of return for the
14 S&P 500 can be determined based on the logic you applied to your multi-stage DCF analysis
15 of the S&P 500?

16 A. Yes. The curriculum states the following:

17 Analysts have frequently used the Gordon (constant) growth model
18 form of the dividend discount model [same as the constant-growth
19 DCF in utility ratemaking terms], solved for the required rate of return,
20 to formulate the long-term expected return of equity markets. The
21 Gordon growth model assumes that there is a long-term trend in
22 dividends and corporate earnings, which is a reasonable approximation
23 for many developed country economies...

24 ...The quantity g can be estimated most simply as the growth rate in
25 nominal gross domestic product (nominal GDP), a money measure of
26 the goods and services produced within a country's borders. Nominal
27 GDP can be estimated as the sum of the estimated real growth rate in
28 GDP plus the expected long-run inflation rate. A more advanced

analysis can take account of any perceived differences between the expected growth of the overall economy and that of the constituent companies of the particular equity index that the analyst has chosen to represent equities. The analyst can use

$$\text{Earnings growth rate} = \text{GDP growth rate} + \text{Excess corporate growth (for the index companies)}$$

where the term excess corporate growth may be positive or negative depending on whether the sectoral composition of the index companies is viewed as higher or lower growth than the overall economy. If the analyst has chosen a broad-based equity index, the excess corporate growth adjustment, if any, should be small . . . (emphasis added)

Consequently, the use of GDP for a generic perpetual growth is more aptly used when estimating the implied cost of equity of a broader index, such as the S&P 500. Additionally, this material indicates that a growth rate other than GDP for a broad-based equity index, e.g., the S&P 500, should not deviate much from GDP. However, if the equity index involves a sector that is expected to grow at a rate lower than that of the economy, e.g. a utility index, then a negative excess corporate growth rate would be considered.

Constant-growth DCF

Q. What is your primary concern regarding Mr. Hevert's constant-growth DCF cost of equity estimate?

A. He assumes that equity analysts' 5-year EPS forecasted growth rates are indicative of expected dividends per share ("DPS") growth in perpetuity. These EPS projections are intended to reflect expectations over a 5-year period. As a result, these growth rates are not sustainable into perpetuity and do not reflect the long-term fundamentals of the electric utility industry.

1 Q. What is the primary reason that Mr. Hevert's constant-growth DCF cost of
2 equity estimate is unreliable?

3 A. Mr. Hevert assumes that his proxy group can grow into perpetuity at an
4 unsustainable annual growth rate of 5.71%. It is not logical to expect electric utilities' DPS
5 to grow at a constant rate of 5.71% into the indefinite future. This growth rate is not only
6 above what is reasonable to expect for the regulated electric utility industry, but it is also
7 much higher than what investors expect for the growth in the overall economy.

8 While I do not believe the perpetual growth rate for the electric utility industry should
9 be equivalent to the expected growth in GDP, expected long-term growth in GDP does
10 influence expected growth for the electric utility industry. In this respect, an accurate
11 measure of GDP is relevant, but not determinative. Because the electric utility industry's
12 DPS, EPS and book value per share ("BVPS")³ have not grown anywhere near the same rate
13 of GDP in the past, it would take a leap of faith from investors to anticipate this higher rate of
14 growth when determining a fair price to pay for electric utility stocks.

15 **CAPM**

16 Q. What causes Mr. Hevert's CAPM cost of equity estimates to be so high?

17 A. Mainly his estimation of high equity risk premiums, which are far above those
18 Staff has observed in professional investment analysis. Mr. Hevert uses estimated equity risk
19 premiums in the range of 9.94% to 10.18% in his other CAPM analysis. These equity risk
20 premium estimates are far above what most investors expect as a total return for the total
21 market, much less an additional return over the risk-free rate. Quite frankly, it is widely
22 understood that our current low-interest rate, low-economic growth environment cannot offer

³ Per share figures that are often analyzed to determine a sustainable long-term growth rate for the DCF methodology.

1 such high expected returns. I know of no institutional investors that are using equity risk
2 premiums anywhere near this level when making investment decisions in the current
3 investment environment. Although Mr. Hevert only uses his CAPM to test the
4 reasonableness of his DCF estimates, Mr. Hevert's inclination to inflate his equity risk
5 premiums well above rational estimates should cause concern about Mr. Hevert's tendency to
6 use higher estimates regardless of the cost of equity methodology employed.

7 Tests of reasonableness should be based on independent third-party analyses
8 (preferably from analysts/investors not involved in the utility regulatory rate case process),
9 not the same analyst using different models with a bias introduced in each methodology.
10 Staff has frequently provided such information to demonstrate the reasonableness of its cost
11 of equity estimates.

12 Q. Although the merits of Mr. Hevert's risk premium estimates are questionable
13 even without exploring the details of his methodologies, how did he go about making these
14 estimates and what are the fundamental problems with his methodologies?

15 A. The simplest risk premium estimate to refute is the estimate Mr. Hevert
16 derived by estimating the S&P 500 market return using the DCF methodology. Actually,
17 Mr. Hevert's use of the DCF methodology to estimate S&P 500 market returns magnifies the
18 fallacies of assuming 5-year EPS forecasts can be used to estimate long-term market returns
19 for any index or proxy group, let alone the S&P 500. In estimating the long-term market
20 returns for the S&P 500, Mr. Hevert makes the entirely illogical assumption that the S&P
21 500 can attain capital gains equivalent to the 5-year EPS growth forecasts, which were
22 10.68% at the time he prepared his testimony. Adding this growth forecast to the S&P 500

1 dividend yield of approximately 2.12% results in Mr. Hevert's estimated return for the S&P
2 500 of 12.91%.

3 Again, Staff knows of no professional investors that expect a 12.91% return for the
4 S&P 500 in the long-run, let alone even a double-digit return for the S&P 500. Staff
5 provided information in the Staff's Report from the first Quarter 2012 *Survey of Professional*
6 *Forecasters* that projected a 6.80% projected return on the S&P 500. Staff also provided
7 information from Burton G. Malkiel, author of a study used by ROR witnesses to support the
8 use of equity analysts' 5-year EPS forecasts in a constant-growth DCF, which indicated that
9 the S&P 500 should produce a return of approximately 7%. If you subtract the approximate
10 30-year risk-free rate of 3% used by Mr. Hevert from these projected returns, the result is a
11 market risk premium of approximately 4%.

12 Q. Mr. Hevert also estimates an equity risk premium by evaluating a historical
13 Sharpe Ratio, which is a measure of excess return to the volatility of that return, and
14 estimating the implied volatility of the market by analyzing the VIX, which is a measure of
15 the options volatility on the S&P 500 in the near future. Has Staff ever seen this
16 methodology used by investment analysts when estimating a fair price to pay for utility
17 stocks?

18 A. No. I have never seen an approach such as this used in practice for purposes
19 of determining a fair price to pay for at least utility stocks. That being said, I think it is
20 important to think conceptually about what the market has been telling us recently. As Staff
21 explained at length in the Staff's Report, regulated electric utility companies are currently
22 trading at a premium (in terms of price-to-earnings ratios) to the S&P 500 even though, on
23 average, they historically have traded at a discount. While I agree with Mr. Hevert that the

1 S&P 500 has been more volatile in the recent past, this does not translate into a higher COE
2 for regulated utility companies. As Staff explained in the Staff Report, regulated electric
3 utility stocks have had a cumulative total return of 38.05% over the last two years, while the
4 S&P 500 has had a cumulative total return of 17.17%, or less than half of that of EEI's
5 regulated electric utility index.

6 The excess returns for regulated electric utilities are not due to higher EPS growth
7 expectations for regulated electric utilities, because the average 5-year EPS growth forecasts
8 for Mr. Hevert's electric utility proxy group is 5.71%, whereas he indicates the average
9 5-year EPS growth forecasts for the S&P 500 is 10.68%. Therefore, the main force
10 supporting regulated electric utilities' better stock performance than that of the S&P 500 is a
11 decrease in regulated utility discount rates, i.e. the cost of equity, due to the extremely low
12 interest rate environment and investors' flight to safe investments, such as regulated utilities.

13 Consequently, Staff believes the short-term volatility of the S&P 500 is not a reason
14 for a higher regulated electric utility cost of equity estimate. If anything, it is a reason for a
15 lower regulated electric utility cost of equity estimate.

16 **Bond Yield Plus Risk Premium Analysis**

17 Q. How does Mr. Hevert estimate the COE using the bond-yield risk premium
18 approach?

19 A. First, I should state that I don't consider Mr. Hevert's bond-yield risk
20 premium approach to be based on market-implied costs. As I explained in detail in Staff's
21 Report, there is a difference between the allowed ROE and the COE. There is no doubt that
22 investors expect (or maybe hope) allowed ROEs will stay at or slightly below 10%, but that
23 doesn't mean this is their COE. In fact, Ameren's own internal analysis corroborated that the

1 COE it uses to discount its regulated electric utility cash flows is lower than the allowed
2 ROEs assumed for cash flow modeling purposes. Consequently, I think it is more
3 appropriate to characterize Mr. Hevert's analysis as a "bond yield plus allowed ROE
4 premium analysis."

5 Mr. Hevert compounds the circularity involved in using allowed ROEs to estimate the
6 COE by suggesting that the COE should be adjusted due to his observation that allowed
7 ROEs are negatively correlated with changes in utility bond yields. While Staff believes it is
8 safe to conclude that risk premiums are not constant over time, Staff also believes that the
9 use of actual or allowed ROE data to interpret the market's required risk premium is of
10 questionable value. For example, Eugene Fama and Kenneth French concluded that *earned*
11 ROEs over the period of 1950 through 2000 were not consistent with *required* ROEs over the
12 same period.⁴ Fama and French arrived at this conclusion by using the DCF method to
13 compare the cost of equity to the return on equity over the same period. The Fama and
14 French study also helps explain what is currently happening with regulated utility stocks.
15 Investors didn't require a cumulative 38.05% return on regulated electric utility stocks over
16 the last couple of years. If this were the case, then no ROR witness was accurately
17 estimating the COE for the last couple of years. Investors in regulated utility stocks have
18 benefited from a continued decline in interest rates, just as investors in bonds have benefited
19 from a continued decline in interest rates (increase in bond prices). Because of the higher
20 value placed on bonds and dividend-paying stocks, such as regulated electric utilities, the
21 issuers of these securities now realize much lower costs when they need to raise capital. In
22 the instance of bonds, it is easy to measure this lower cost because the lower rate is indicated

⁴ Eugene F. Fama and Kenneth R. French, "The Equity Premium," *The Journal of Finance*, (April 2002).

1 directly in the lower coupon rates attached to the bonds. However, in the instance of stock, it
2 must be measured by judgment, but considering the bond-like characteristics of regulated
3 utility stocks, it really should be fairly intuitive that the cost of equity for regulated utility
4 companies is well below 10%.

5 Additionally, for periods prior to 1980 a negative relationship between equity risk
6 premiums and interest rates was not observed.⁵ Many experts attribute the decrease in equity
7 risk premiums during the 1980s to the volatility of bonds, not a lower required return for
8 stocks. Consequently, the volatility of interest rates is a more important factor to determining
9 the equity risk premium as opposed to the level of interest rates. With the exception of the
10 financial crisis in late 2008 and early 2009, interest rates had been fairly stable over the last
11 decade or more. Before the financial crisis, most investors and academicians believe the
12 equity risk premium was far lower than that indicated by historical earned return spreads,
13 including Fama and French mentioned above.

14 Mr. Hevert also made the error of adding his estimated risk premium to projected
15 bond yields. This is inappropriate because it is akin to using projected stock prices in a DCF
16 analysis. A rate of return witness should not attempt to estimate where he thinks stock prices
17 and bond yields will be in the future because then he is substituting his judgment for that of
18 the market. Bond prices already reflect investors' expectations of future interest rates.

19 Staff's concerns notwithstanding, if the Commission desires to incorporate this
20 methodology in estimating a fair ROE, then Staff advises the Commission to use actual
21 utility bond yields and an unadjusted risk premium to estimate an "allowed ROE risk
22 premium" cost of equity estimate.

⁵ Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, "The Risk Premium Approach to Measuring a Utility's Cost of Equity," *Financial Management*, Spring 1985.

1 **Regulatory Risks**

2 Q. Does Mr. Hevert indicate that his proxy group may have lower business risk
3 than Ameren Missouri due to regulatory factors?

4 A. Yes.

5 Q. Did Mr. Hevert analyze all of the risk factors of his comparable companies
6 when suggesting a risk adjustment consideration may be appropriate?

7 A. No.

8 Q. Is it appropriate to apply Ameren's consolidated COE estimate to Ameren
9 Missouri?

10 A. No, because Ameren Missouri is less risky than the holding company.

11 Q. Did you discuss the problems with Mr. Hevert's proxy group already?

12 A. Yes.

13 Q. Did Mr. Hevert make any downward adjustments to his COE estimates to take
14 into consideration the fact that his proxy group includes at least two companies with
15 significant non-regulated operations?

16 A. No. Not only did he not consider any downward adjustments to reflect this
17 fact, but he actually chose to focus on a variety of regulatory issues that he believes justifies
18 an allowed ROE in the upper part of his estimated COE range. Mr. Hevert mentioned all of
19 these regulatory issues even though he could not quantify the amount of revenue associated
20 with each of these regulatory mechanisms.⁶

21 Q. Is it possible to determine the amount of non-regulated exposure that not only
22 Otter Tail and Edison International have, but also Hevert's other comparable companies?

⁶ Michael P. Gorman's July 6, 2012, Direct Testimony in Case No. ER-2012-0166, at p. 59.

1 A. Yes, a simple review of publicly-available financial statements would allow
2 for this determination, but Hevert chose not to consider this aspect of his comparable
3 companies.

4 Q. Do you believe the non-regulated risks are much more prominent than many
5 of the other factors suggested by Mr. Hevert?

6 A. Yes. I have never seen any specific COE adjustments made by investment
7 analysts for any of the factors discussed by Mr. Hevert.

8 Q. Does Mr. Hevert discuss various regulatory risks he claims causes Ameren
9 Missouri to have greater business risk than his proxy group?

10 A. Yes. Mr. Hevert discusses various regulatory issues on pages 39 through 47
11 of his direct testimony that he believes the Commission should consider when deciding on an
12 allowed ROE for Ameren Missouri.

13 Q. Did Mr. Hevert discuss Ameren Missouri's demand-side programs and
14 Demand-Side Programs Investment Mechanism ("DSIM") proposed under the Missouri
15 Energy Efficiency Investment Act ("MEEIA") in Case No. EO-2012-0142?

16 A. No.

17 Q. Does the Missouri Code of State Regulations require the Commission to
18 consider the effect of the DSIM on Ameren Missouri's business risk?

19 A. Yes. 4 CSR 240-20.093(2)(D) states, "In addition to any other changes in
20 business risk experienced by the electric utility, the commission shall consider changes in the
21 utility's business risk resulting from establishment... of the DSIM in setting the electric
22 utility's allowed return on equity in general rate proceedings."

1 Q. Did Ameren Missouri's rate increase contemplate the implementation of the
2 DSIM?

3 A. Yes. Ameren Missouri's rate increase request in this case included two large
4 adjustments to the annual revenue requirement related to Ameren Missouri's Application for
5 a DSIM in Case No. EO-2012-0142 that are contained in the direct testimony of Ameren
6 Missouri's witness Gary S. Weiss: 1) Energy Efficiency Program Cost Recovery Adjustment
7 # 20 in the amount of \$49,431,000 and 2) Energy Efficiency Performance Mechanism
8 Adjustment # 21 in the amount of \$32,487,000.

9 Mr. Hevert filed his testimony on February 3, 2012. Consequently, Mr. Hevert
10 should have been aware of Ameren Missouri's requested DSIM and its impact on Ameren
11 Missouri's rates in this case.

12 Q. Has the Commission approved a stipulation and agreement concerning
13 Ameren Missouri's Application for a DSIM in Case No. EO-2012-0142?

14 A. Yes. On August 1, 2012, the Commission approved a DSIM agreed-to by the
15 Company and all parties in Case No. EO-2012-0142. That DSIM includes the following:
16 1) one third of the estimated 3-year programs' costs of \$49,108,352 and 2) ninety percent of
17 the estimated amount of Ameren Missouri's throughput disincentive net shared benefits
18 ("TD-NSB") share of \$30,450,000.

19 Q. Could investment analysts view Ameren Missouri's Commission-approved
20 demand-side programs and Commission-approved DSIM favorably?

21 A. Yes. The Commission-approved DSIM provides for contemporaneous
22 recovery of demand-side programs' costs and contemporaneous recovery of 90% of
23 estimated lost margin revenue due to its demand-side programs with a true-up to 100% of

1 lost margin revenue based on actual energy efficiency measures installed. Further, the
2 Company will have an opportunity to increase earnings through the performance incentive
3 component of its DSIM should the Company reach at least 70% of its Commission-approved
4 3-year energy savings target. The DSIM should reduce Ameren Missouri's need to make
5 long-term investments to meet future customer load, as would be the case with generating
6 facilities, and it protects Ameren Missouri from downside risks due to the Company's
7 Commission-approved energy efficiency programs. Although Staff is not sure how to
8 quantify the reduced risk in basis points, Staff urges the Commission to consider that
9 Mr. Hevert did not give Ameren Missouri's MEEIA programs or its DSIM any consideration
10 in his testimony concerning Missouri's regulatory environment. If Staff discovers that
11 investors are giving any specific consideration to the DSIM in the price they are willing to
12 pay for Ameren's stock, then Staff will bring this to the Commission's attention.

13 **DIRECT RESPONSE TO MR. GORMAN'S COST OF EQUITY ESTIMATES**

14 Q. Generally, what are your concerns about Mr. Gorman's analysis?

15 A. He uses projected interest rates when providing risk premium estimates. This
16 is akin to performing a DCF analysis on projected stock prices. Current bond prices reflect
17 investors' expectations about the risks of volatility and changes in interest rates.

18 He gives some weight to a constant-growth DCF that assumes that equity analysts'
19 5-year EPS forecasted growth should be used to estimate dividend growth in perpetuity.
20 These growth rates are not used as perpetual growth rates by investors for purposes of
21 valuing utility stocks.

1 Mr. Gorman's risk premium analyses assume that allowed ROEs represent a market-
2 determined cost of equity for purposes of determining required returns. While Staff believes
3 that investment analysts use allowed returns to model cash flows, these are not necessarily
4 the returns required by investors.

5 Q. What COE estimate forms the basis for the high-end of Mr. Gorman's range
6 of COE estimates?

7 A. His multi-stage DCF analysis.

8 Q. What causes Mr. Gorman's multi-stage DCF to be higher than your COE
9 estimate?

10 A. His assumption that regulated electric utilities' DPS can grow at a 4.90% rate
11 in perpetuity.

12 Q. What is the basis for Mr. Gorman's 4.90% perpetual growth rate?

13 A. Mr. Gorman assumes that electric utilities' DPS can grow at the same rate of
14 projected aggregate GDP growth information provided in the June 1, 2012 *Blue Chip*
15 *Financial Forecasts*. The 4.90% growth rate is supposed to represent the mid-point of two
16 consecutive 5-year compound growth rate projections for the years 2014 through 2018 and
17 then 2019 through 2023.

18 Q. What is the compound growth rate projection for the later 5-year period?

19 A. 4.6%. If the Commission accepts Mr. Gorman's and Mr. Hevert's theory of
20 using an aggregate GDP growth rate as a proxy for perpetual growth, then this would be a
21 much more reasonable long-term estimate.

22 Q. What COE is indicated from the use of a 4.6% growth rate?

23 A. 9.15%.

1 **SUMMARY AND CONCLUSIONS**

2 Q. Please summarize the conclusions of your rebuttal testimony.

3 A. Based on Staff's review of both ROR witnesses' testimony, it appears that we
4 all accept a multi-stage DCF methodology as being reliable for purposes of estimating a
5 regulated electric utility company's cost of equity. However, we have fairly widely
6 divergent results. Mr. Hevert's estimates fall between 10.64% and 10.81%, depending on
7 how many days of stock prices he includes in his model. Mr. Gorman's COE estimate of
8 9.40% is higher than my COE range of 7.82% to 8.61% mainly due to his assumption that
9 regulated electric utility companies can grow at the same rate as projected GDP growth in
10 perpetuity. I provided an extensive amount of empirical and academic support in the Staff
11 Report that discredits this assumption. In addition, investment professionals do not make this
12 assumption in practice. As I indicated in the Staff Report, investors and utility companies do
13 not equate the allowed ROE to the COE when making investment decisions. In fact, Staff
14 provided information in Ameren Missouri's last rate case that shows that Ameren Missouri
15 uses a COE in the ** — ** range when discounting cash flows generated by its regulated
16 utility assets and this was before the additional decline in interest rates. Consequently, Staff
17 believes focus should be given to the appropriate margin over the COE to allow rather than
18 pretending the COE is something that it is not.

19 Q. Does this conclude your rebuttal testimony?

20 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of Union Electric Company d/b/a)
Ameren Missouri's Tariffs to Increase Its) Case No. ER-2012-0166
Revenues for Electric Service)
)

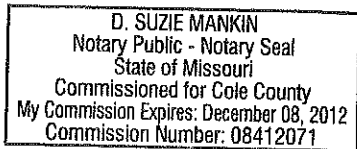
AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

David Murray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, consisting of 30 pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.


DAVID MURRAY

Subscribed and sworn to before me this 14th day of August, 2012.



Sheryl Hanken
Notary Public

Union Electric Company d/b/a Ameren Missouri
File No. ER-2012-0166

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American Electric Power	\$1.88	4.12%	4.10%	4.08%	4.06%	4.04%	4.02%	4.00%	9.09%
Cleco Corp.	\$1.25	5.33%	5.11%	4.89%	4.67%	4.44%	4.22%	4.00%	7.97%
Great Plains Energy	\$0.85	5.53%	5.28%	5.02%	4.77%	4.51%	4.26%	4.00%	8.79%
IDACORP, Inc.	\$1.20	4.40%	4.33%	4.27%	4.20%	4.13%	4.07%	4.00%	7.24%
Pinnacle West Capital	\$2.10	5.63%	5.36%	5.09%	4.82%	4.54%	4.27%	4.00%	9.35%
Portland General Electric	\$1.06	6.13%	5.78%	5.42%	5.07%	4.71%	4.36%	4.00%	9.18%
Southern Company	\$1.89	5.67%	5.39%	5.11%	4.84%	4.56%	4.28%	4.00%	9.05%
Westar Energy, Inc.	\$1.28	6.56%	6.13%	5.71%	5.28%	4.85%	4.43%	4.00%	9.79%
									8.81%

Sources: Column 1 = Value Line Annualized 4th Quarter 2011 Dividend
Column 2 = Robert Hevert's Direct Testimony, Schedule RBH-E2, p. 2.
Column 8 = Staff's Cost of Service Report, Appendix 2, Schedule 13-3.

Union Electric d/b/a Ameren Missouri
File No. ER-2012-0166

RESULTS OF HEVERT'S ORIGINAL
MULTI-STAGE DCF MODEL – 90-DAY AVERAGE PRICE
with EDISON INTERNATIONAL, INTEGRYS ENERGY AND OTTER TAIL CORPORATION ELIMINATED

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Stock Price	2010 EPS	Earnings Growth	GDP Growth	Payout Ratio 2011	2015	2025	Solver Cells Delta	ROE
American Electric Power Company, Inc.	AEP	\$38.69	\$2.60	4.12%	5.61%	59.00%	55.00%	66.42%	\$0.00	10.11%
Cleco Corp.	CNL	\$35.57	\$2.29	5.33%	5.61%	46.00%	59.00%	66.42%	\$0.00	10.31%
Great Plains Energy Inc.	GXP	\$20.28	\$1.53	5.53%	5.61%	63.00%	60.00%	66.42%	\$0.00	11.32%
IDACORP, Inc.	IDA	\$39.48	\$2.95	4.40%	5.61%	39.00%	45.00%	66.42%	\$0.00	10.44%
Pinnacle West Capital Corp.	PNW	\$45.08	\$3.08	5.63%	5.61%	76.00%	65.00%	66.42%	\$0.00	10.97%
Portland General Electric Company	POR	\$24.24	\$1.66	6.13%	5.61%	53.00%	52.00%	66.42%	\$0.00	10.81%
Southern Company	SO	\$43.09	\$2.37	5.67%	5.61%	73.00%	68.00%	66.42%	\$0.00	9.94%
Westar Energy, Inc.	WR	\$26.84	\$1.80	6.56%	5.61%	72.00%	59.00%	66.42%	\$0.00	11.09%
AVERAGE										10.62%

Union Electric Company d/b/a Ameren Missouri
File No. ER-2012-0166

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

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American Electric Power	\$1.88	4.12%	4.37%	4.62%	4.87%	5.11%	5.36%	5.61%	10.29%
Cleco Corp.	\$1.25	5.33%	5.38%	5.42%	5.47%	5.52%	5.56%	5.61%	9.25%
Great Plains Energy	\$0.85	5.53%	5.54%	5.56%	5.57%	5.58%	5.60%	5.61%	10.01%
IDACORP, Inc.	\$1.20	4.40%	4.60%	4.80%	5.01%	5.21%	5.41%	5.61%	8.57%
Pinnacle West Capital	\$2.10	5.63%	5.63%	5.62%	5.62%	5.62%	5.61%	5.61%	10.54%
Portland General Electric	\$1.06	6.13%	6.04%	5.96%	5.87%	5.78%	5.70%	5.61%	10.38%
Southern Company	\$1.89	5.67%	5.66%	5.65%	5.64%	5.63%	5.62%	5.61%	10.26%
Westar Energy, Inc.	\$1.28	6.56%	6.40%	6.24%	6.09%	5.93%	5.77%	5.61%	10.94%
									10.03%

Sources: Column 1 = Value Line Annualized 4th Quarter 2011 Dividend

Columns 2 and 8 = Robert Hevert's Direct Testimony, Schedule RBH-E2, p. 2.

Union Electric Company d/b/a Ameren Missouri
File No. ER-2012-0166

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

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Cleco Corp.	\$1.25	5.33%	5.38%	5.42%	5.47%	5.52%	5.56%	5.61%	9.41%
Great Plains Energy	\$0.85	5.53%	5.54%	5.56%	5.57%	5.58%	5.60%	5.61%	10.23%
IDACORP, Inc.	\$1.20	4.40%	4.60%	4.80%	5.01%	5.21%	5.41%	5.61%	8.69%
Pinnacle West Capital	\$2.10	5.63%	5.63%	5.62%	5.62%	5.62%	5.61%	5.61%	10.79%
Portland General Electric	\$1.06	6.13%	6.04%	5.96%	5.87%	5.78%	5.70%	5.61%	10.62%
Southern Company	\$1.89	5.67%	5.66%	5.65%	5.64%	5.63%	5.62%	5.61%	10.49%
Westar Energy, Inc.	\$1.28	6.56%	6.40%	6.24%	6.09%	5.93%	5.77%	5.61%	11.22%
									10.25%

Sources: Column 1 = Value Line Annualized 4th Quarter 2011 Dividend

Columns 2 and 8 = Robert Hevert's Direct Testimony, Schedule RBH-E2, p. 2.

Union Electric d/b/a Ameren Missouri
File No. ER-2012-0166

EXAMPLE OF HIGHER GROWTH RATE CAUSED BY HEVERT'S MID-YEAR CONVENTION

	<u>12/31/2011</u>	<u>7/1/2012</u>	<u>7/1/2013</u>	<u>7/1/2014</u>	<u>7/1/2015</u>	<u>7/1/2016</u>	
American Electric Power	\$2.71	\$2.82	\$2.94	\$3.06	\$3.18	\$3.31	<u>Effective "5-Year" Growth Rate</u> 4.59%
	<u>12/31/2011</u>	<u>12/31/2012</u>	<u>12/31/2013</u>	<u>12/31/2014</u>	<u>12/31/2015</u>	<u>12/31/2016</u>	
American Electric Power	\$2.71	\$2.82	\$2.94	\$3.06	\$3.18	\$3.31	<u>Actual 5-Year Growth Rate</u> 4.12%

Union Electric Company d/b/a Ameren Missouri
File No. ER-2012-0166

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

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American Electric Power	\$1.88	4.12%	4.37%	4.62%	4.87%	5.11%	5.36%	5.61%	10.11%
Cleco Corp.	\$1.25	5.33%	5.38%	5.42%	5.47%	5.52%	5.56%	5.61%	10.31%
Great Plains Energy	\$0.85	5.53%	5.54%	5.56%	5.57%	5.58%	5.60%	5.61%	11.31%
IDACORP, Inc.	\$1.20	4.40%	4.60%	4.80%	5.01%	5.21%	5.41%	5.61%	10.44%
Pinnacle West Capital	\$2.10	5.63%	5.63%	5.62%	5.62%	5.62%	5.61%	5.61%	10.97%
Portland General Electric	\$1.06	6.13%	6.04%	5.96%	5.87%	5.78%	5.70%	5.61%	10.81%
Southern Company	\$1.89	5.67%	5.66%	5.65%	5.64%	5.63%	5.62%	5.61%	9.94%
Westar Energy, Inc.	\$1.28	6.56%	6.40%	6.24%	6.09%	5.93%	5.77%	5.61%	11.09%
									10.62%

Sources: Column 1 = Value Line Annualized 4th Quarter 2011 Dividend

Columns 2 and 8 = Robert Hevert's Direct Testimony, Schedule RBH-E2, p. 2.

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14.5 Year Compound Dividend Growth Rates Using Mr. Hevert's Methodology

American Electric Power	5.73%
Cleco Corp.	7.48%
Great Plains Energy	5.85%
IDACORP, Inc.	8.51%
Pinnacle West Capital	4.71%
Portland General Electric	7.33%
Southern Company	4.88%
Westar Energy, Inc.	5.58%
	<hr/>
	6.26%

SCHEDULE 8

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

Union Electric d/b/a Ameren Missouri
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Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Standard & Poor's 500 Index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
S&P 500	\$29.12	10.68%	9.84%	8.99%	8.15%	7.30%	6.46%	5.61%	8.97%

Quarterly Dividend 7.28
as of year-end 2011

Source: <http://www.standardandpoors.com/indices/sp-500/en/us/?indexId=spusa-500-usdof--p-us-l-->