REBUTTAL TESTIMONY

of

MICHAEL McNALLY

Finance Department

Financial Analysis Division

Illinois Commerce Commission

Commonwealth Edison Company

Proposed General Increase In Rates For Delivery Service

Docket No. 05-0597

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WITNESS IDENTIFICATION

Q1. Please state your name and business address.

A1. My name is Michael McNally. My business address is 527 East Capitol Avenue, Springfield, IL 62701.

Q2. Are you the same Michael McNally who testified previously in this proceeding?

A2. Yes, I am.

Q3. Please state the purpose of your rebuttal testimony.

A3. The purpose of my rebuttal testimony is to respond to the rebuttal testimony of Commonwealth Edison Company ("ComEd") witness Samuel C. Hadaway (ComEd Ex. 21.0) and to the direct testimony of Citizens Utility Board and Cook County States Attorney Office ("CUB-CCSAO") witness Edward C. Bodmer (CUB-CCSAO Exhibit 1.0).

RESPONSE TO DR. HADAWAY

Q4. Dr. Hadaway states that combining your 10.19% cost of equity recommendation with Staff witness Kight's capital structure "entirely ignores the additional financial risk that Ms. Kight's capital structure represents and would fail to meet any financial test of reasonableness."[1] Please comment.

A4. Ms. Kight addresses the financial impact of Staff's recommendations in her direct and rebuttal testimonies.[2, 3]

Q5. Dr. Hadaway suggests that your cost of equity recommendation is "extremely low" relative to "the appropriate returns for electric utilities being determined throughout the United States."[4] Please comment.

A5. Dr. Hadaway indicates that the average allowed returns on common equity for electric utilities throughout the country during 2004 and 2005 were 10.75% and 10.54% respectively.[5] Although Staff's cost of equity recommendation is presumably included in the "other parties'" recommendations, it is surprising to think that anyone may view my 10.19% recommendation as "extremely low" relative to those allowed returns, the higher of which is only 56 basis points above my estimate. Indeed, the average allowed return for the more recent year is closer to Staff's recommendation than to Dr. Hadaway's.

[1] ComEd Ex. 21.0, pp. 6-7, lines 135-138.
[2] ICC Staff Exhibit 4.0, p. 8, lines 148-164.
[3] ICC Staff Exhibit 15.0, pp. 3-4, lines 46-50.
[4] ComEd Ex. 21.0, pp. 1-2, lines 21-23.
[5] ComEd Ex. 21.0, p. 2, lines 25-26.

Regardless, Dr. Hadaway's comparison suffers from one of the same major flaws that afflicts his risk premium analysis, both of which appear to be based on the same allowed return data source. Specifically, as I explained in my direct testimony, any attempt to assess the appropriate return in this proceeding via comparison to the authorized returns Dr. Hadaway cites is of no value, since he did not identify all critical factors, including the relative risk of the utilities, involved in those return decisions.[6]

Moreover, contrary to Dr. Hadaway's findings, a closer review of the underlying rate decisions he cites suggests that my recommendation is, in fact, very similar to rates authorized specifically for electric distribution services and that, conversely, his recommendation is overstated. The data source Dr. Hadaway apparently relies on is a study published by Regulatory Research Associates, Inc., a copy of which is included among his rebuttal work papers and is attached to my testimony as Schedule 16.1. The footnotes to that study indicate that only 6 of the 48 authorized electric utility returns Dr. Hadaway cites are applicable to electric distribution rates only. Since the purpose of this case is to set rates for ComEd's electric distribution service, a comparison to allowed returns for electric distribution service alone would be more appropriate. The six allowed returns for electric distribution during 2004 and 2005 averaged 10.07%, which indicates that my 10.19% cost of equity recommendation is not understated at all when compared to a more appropriate benchmark. Nevertheless, as noted above, such a comparison, while more accurate than the comparison Dr. Hadaway promotes, is still very imprecise, as we do not know all of the critical factors involved in those return decisions.

[6] ICC Staff Exhibit 5.0, p. 25, lines 473-490.

Q6. Please respond to Dr. Hadaway's criticism that your DCF analysis is deficient because your growth rates were obtained from only one source.[7]

A6. As explained in my direct testimony, the growth rates published by Zacks represent a compilation of various analyst growth rates.[8] Thus, although I did obtain my growth rate estimates from a single publisher, each estimate from that publisher incorporates multiple estimates from different sources. Indeed, the Zacks growth rate estimate for each company in my sample incorporates at least 4 separate estimates, with an average of nearly 7 estimates each.

Q7. Dr. Hadaway criticizes your DCF analysis, stating that "[a]nalysts' 3-to-5-year earnings forecasts for utilities currently are not appropriate in the DCF analysis because such forecasts are presently 100 to 200 basis points lower than they were just five years ago."[9] **Please comment.**

A7. Dr. Hadaway's argument is based on a logical fallacy; he assumes the conclusion. That is, he implicitly assumes that the growth rates from 2001 are the "correct" growth rates, leading him to conclude that any differing growth rates are "incorrect." Of course, one could just as easily assume that current growth rates are "correct," making the growth rates from 2001 "incorrect." Dr. Hadaway's argument invites the question of which set of 3-to-5-year growth rates more closely aligns with investors' unobservable expectations for utilities' sustainable growth.[10]

[7] ComEd Ex. 21.0, p. 7, lines 149-150.
[8] ICC Staff Exhibit 5.0, p. 6, lines 108-109.
[9] ComEd Ex. 21.0, p. 7, lines 152-154.
[10] Hereafter, I use the term "sustainable growth" to mean growth that a company can maintain over an infinite period, all else equal.

Dr. Hadaway has provided no support for his assumption that investors view 2001 growth rates as normal, sustainable growth rates. Indeed, it is difficult to believe they would. From 1994-2003, the average end-of-year analyst growth forecasts for my Comparable Sample and Dr. Hadaway's two samples were each at or near their peaks in 2001.[11] Thus, contrary to Dr. Hadaway's implication, 2001 growth forecasts were not "normal" growth rates for those samples, but rather, were atypically high. In contrast, for my Comparable Sample, the average of the Zacks growth rates used in my analysis is very similar to the average of the year-end sample averages over the 1994-2003 period.[12] Moreover, the average of the Zacks growth forecasts used in my analysis are also much more similar to the long-run sustainable growth rate implied by historical, current, and projected retention rates, which I discuss later in this testimony, than are the 2001 growth forecasts Dr. Hadaway adopts as his benchmark. Therefore, the current Zacks growth forecasts I used, rather than the 2001 growth forecasts, are more consistent with likely investor long-term growth expectations for the companies in my Comparable Sample.

[11] December IBES reports for 1994-2003. The 1994-2003 period was selected because it represents the most recent decade for which Staff has access to growth rate information from a single source. The Commission terminated its contract with IBES in March 2004.

[12] Since Zacks and IBES growth rates may differ, any comparison across those sources will be imperfect. However, such comparisons are instructive, as IBES and Zacks growth rates both represent analysts' expectations of the future and are generally consistent with respect to one another.

Q8. Dr. Hadaway also implies that the current 3-to-5-year growth rates you used are not consistent with investors' very long-term expectations, whereas analysts' estimates from 2001 were consistent with long-term growth in the overall U.S. economy, as measured by nominal GDP.[13] Please comment.

A8. Once again, Dr. Hadaway's argument relies on an assumed conclusion, namely that investors expect the long-term growth rates for *utilities* to be similar to his estimate of the long-term growth rate for the *overall economy*. At the heart of this issue is the evaluation of which estimate better represents investors' unobservable long-term expectations for utility growth, Dr. Hadaway's GDP growth rate estimate or current analyst estimates of utility growth.

Regrettably, Dr. Hadaway's reference to 2001 analyst forecasts of utility growth introduces a third growth rate that serves only to confuse that evaluation. He implies that because the 2001 utility growth rates and his GDP growth rate estimate are consistent, they share each others' underlying attributes. Specifically, he ascribes to the 2001 analyst utility growth rates, which are 3-to-5-year forecasts, the longer term expectations he claims his GDP growth rate estimate represents. Thus, he claims that the 3-to-5-year analyst utility growth forecasts from 2001 represent investors' long-term expectations for utility growth and are, therefore, superior to current 3-to-5-year analyst utility growth forecasts, which he criticizes as representing 3-to-5-year expectations. However, simply because the analyst growth forecasts from 2001 happen to coincide with his estimate of the long-term growth rates for the *entire market*, does not mean they are superior to current analyst growth forecasts as estimates of investors' long-

[13] ComEd Ex. 21.0, pp. 7-8, lines 151-177.

term growth expectations for *utilities*. Such an assumption would only be reasonable if one first assumes that investors' long-term expectations are the same for both GDP and utilities (i.e., if one assumes that utilities will be average growth companies over the long-term). Dr. Hadaway has provided no data to warrant such an assumption. In fact, that assumption requires us to ignore historical growth rates as well as historical, current, and projected retention rates, which suggest that the current growth rates I used are more likely consistent with investors' long-term expectations for the companies in my Comparable Sample, as discussed above.

More significantly, since utilities are, and typically have been, below average growth companies, the assumption that utilities will be average growth companies over the long-term is dubious at best. As explained in my direct testimony, not only are utilities below average in risk, and thus earn a below average return, but they also have below average retention rates.[14] Since sustainable growth is the product of the return and the retention rate, and utilities are below average in both factors, one would expect utilities to have below average growth rates relative to the overall economy, as measured by nominal GDP. Dr. Hadaway has provided no data to suggest that investors expect otherwise. Thus, it is doubtful that investors' long-term expectations would coincide with the 2001 growth rates, since they are similar to Dr. Hadaway's GDP growth rate estimate, but rather, would likely be more in line with the lower current analyst utility growth estimates.

[14] ICC Staff Exhibit 5.0, pp. 22-23, lines 429-442.

In addition to the foregoing, the accuracy of Dr. Hadaway's long-term GDP growth rate estimate as a gauge of long-term GDP growth expectations is questionable. Indeed, his estimate of long-term GDP growth is not actually a forecast at all, but rather, an average of achieved growth rates over various periods during the last 57 years.[15] Dr. Hadaway has not demonstrated that investors set their long-term expectations of future growth on growth achieved over that past 57 years. Even if investors do rely on historical achieved growth rates in setting their expectations of the future, he has not shown that they derive their expectations in the manner he did. Furthermore, the actual, published GDP forecasts I cited in my direct testimony indicate that expectations for future GDP growth are lower than the GDP growth rate Dr. Hadaway employed.[16] Thus, it is highly dubious to assume that investors expect 6.60% long-term growth for GDP, let alone for utilities.

Q9. Dr. Hadaway claims that both your analysis and your critique of his analysis are flawed because they are based on the incorrect usage of 3-to-5-year forecasts.[17] Is he correct?

A9. No. Since no one can forecast the future with certainty, any assessment of the future will be flawed. Nevertheless, uncertainty concerning the future does not render my arguments or my analysis incorrect. Since we can never directly observe investor expectations, we must rely on *estimates* of those expectations. However, we do not have company-specific estimates of investor expectations for the extreme long-run; all we have is historical, current, and 3-to-5-year projected data. From that data we may observe trends that we can use to

[15] ComEd Exhibit 8.5.
[16] ICC Staff Exhibit 5.0, pp. 12-13, lines 238-248.
[17] ComEd Ex. 21.0, pp. 7-8, lines 149-204.

estimate whether, and to what extent, investors will expect the future to differ. As I have explained, historical, current, and 3-to-5-year projected data suggests that one would expect utilities to be below-average growth companies. Dr. Hadaway has provided no foundation for his implication that investors expect marked change in the future. Yet Dr. Hadaway's entire argument requires us to disregard the established patterns from the available data and simply accept the unfounded assumption that investors expect the long-term future for utilities, relative to the overall market, to be significantly different from both the past and present as well as from current projections of the future three to five years hence.

Q10. Please respond to Dr. Hadaway's attempt to defend his assumptions regarding long-term growth expectations for utilities.[18]

A10. Dr. Hadaway's defense relies on the "possibilities" that investors "may" expect a 12.55% return on reinvested earnings, and "may" expect 52.59% retention rates, both of which must be realized in order to sustain a 6.60% growth rate. Yet he provided no support for the notion that investors expect the companies in either his samples or mine to maintain retention rates dramatically higher than the historical, current, and projected retention rate data indicate. Neither has he provided sufficient evidence to demonstrate that investors expect a 12.55% return on reinvested earnings over the long run for the companies in either his samples or mine; indeed, he assessed the investor required return on common equity for his samples to be 11.0%. His sole basis for speculating that investors may expect a 12.55% return on reinvested earnings stems from the allowed returns on equity from a diverse assortment of electric utility proceedings during the 1980-2005 period, which were made by various regulatory bodies across the

[18] ComEd Ex. 21.0, pp. 8-9, lines 178-204.

country.[19] However, as explained previously, any attempt to assess the appropriate return in this proceeding via comparison to those authorized returns is useless, since Dr. Hadaway could not identify the relative risk of the utilities involved in those return decisions. Moreover, he has not established that investors perceive the 1980-2005 period to be representative of their expectations of the future. The Commission should not base rate setting decisions on an estimate with so little support.

Dr. Hadaway's speculation notwithstanding, even if one accepts the highly questionable premise that investors do expect such high equity returns and retention rates for the companies in his and my samples over the long run, those companies cannot sustain the higher resulting growth rate (i.e., approximately 6.60%), given their current and forecasted dividend policies. That is, if investors expect very long-run growth rates to be approximately 6.60%, they must also expect a significant change to those companies' dividend payout policies, all else equal. That change must be reflected in the DCF model, if one wishes to obtain an unbiased cost of equity estimate; unfortunately, Dr. Hadaway's analysis does not incorporate the necessary shift in dividend payment policies. Thus, in addition to relying on the unfounded assumption that investors expect a dramatic rise in retention rates, Dr. Hadaway's DCF analysis also implies that that rise in retention rates has already occurred, since it does not model any transition from the current retention rates to the higher retention rates that would be needed over the long run. In doing so, he effectively overstates his cost of equity by combining the higher dividend yield resulting from the lower actual current

[19] ComEd Exhibit 8.8A, p. 1 and ComEd's response to Staff data request MGM 1.17.

retention rate with the higher growth rate associated with a higher assumed future retention rate.

Q11. Why is it inappropriate to assume an immediate rise in retention rates to 52.59% or higher?

A11. Dr. Hadaway has presented no evidence to suggest that investors *ever* expect the companies in his or my samples to retain 52.59% or more of their earnings, let alone to *maintain* such a high retention rate into perpetuity.[20] To the contrary, recent history and 3-to-5-year projections suggest their retention rates will not rise to those levels, at least not in the near future. The mean of the annual sample average retention rates for the years 2000-2006 for Dr. Hadaway's LDC and Electric samples is 23.87% and 29.76%, respectively.[21] Further, Value Line forecasts average retention rates for the 2008-2010 period for Dr. Hadaway's LDC and Electric samples of 34.01% and 31.88%, respectively. Significantly, as shown in Schedule 16.2, those historical and projected growth rates are all quite consistent, with a standard deviation of less than five percentage points for each sample and not one annual sample average retention rate exceeding 35%, indicating a low likelihood of the drastic change Dr. Hadaway suggests. Thus, the assumption that investors expect retention rates to rise immediately from approximately 25-35% to 52.59% or higher is not only unfounded, but is contrary to both a history of consistently low retention rates and the low 3-to-5-year

[20] The 52.59% retention rate benchmark is based on a 12.55% return on equity, which Dr. Hadaway has not shown to reflect investor expectations. Indeed, he himself assessed the investor required return on equity to be 11.0%. If one assumes an equity earnings rate of 11.0%, a 60% retention rate would be required to sustain a 6.60% growth rate.

[21] Based on actual data from 2000-2004 and Value Line projections for 2005 and 2006. I assumed a 0% retention rate for each negative retention rate published. Had I not done so, the retention rate averages would be even lower.

retention rate forecasts from one of Dr. Hadaway's sources for growth rate estimates.

Q12. Are you suggesting that the companies in Dr. Hadaway's and your samples could never attain a 6.60% sustainable growth rate given their current retention rates?

A12. No. However, without a substantial rise in their retention rates, they would need to sustain an extraordinarily high return on reinvested earnings. For example, as explained in my direct testimony, in order to sustain 6.60% growth given the 3-to-5-year Value Line retention rate forecasts, the return on reinvested earnings for the companies in Dr. Hadaway's LDC Sample and Electric Sample would have to average 20.54% and 22.31%, respectively.[22] Based on their lower recent historical retention rates, those returns would have to be even higher. Such extreme sustained returns on equity are highly unlikely, particularly for a utility under rate regulation. Indeed, those returns are approximately twice as high as the highest cost of equity recommendation in this proceeding. Thus, if a 6.60% growth rate is to be assumed, a change in dividend policy is a more realistic possibility, since dividend payout policy is entirely within the control of a utility company's board of directors. However, as noted above, if one were to assume higher retention rates in the future, it would be necessary to model the transition from the current high dividend, low retention rate policy to a future low dividend, high retention rate policy with a multi-stage DCF analysis.

[22] ICC Staff Exhibit 5.0, p. 21, lines 399-405.

Q13. What effect would the inclusion of a transition from current retention rates to the higher retention rates necessary to sustain 6.60% growth have on Dr. Hadaway's DCF results?

A13. Modeling the transition from the current retention rates of Dr. Hadaway's samples to the higher retention rate required to maintain a 6.60% growth rate, would decrease his cost of equity estimate. Staff Exhibit 16.3 illustrates the effects of various assumptions on a hypothetical company under Dr. Hadaway's Constant Growth DCF Model. Scenario I shows the effects of assuming a 6.60% growth rate, as Dr. Hadaway's did, given the 31.10% initial retention rate from his Electric sample and the 12.55% return on reinvested earnings Dr. Hadaway speculates that investors may expect. Based on those assumptions, the stock price at the beginning of year one would be $145.33 per share, assuming an investor required return (i.e., discount rate) of 12.55% ($P_0 = D_1 / (k – g)$ or $8.65 / (12.55% – 6.60%) = $145.33). Significantly, this example shows that a 6.60% growth rate is unsustainably high, based on current retention rates and a 12.55% return on reinvested earnings. That is, given the company's relatively low initial retention rate (i.e., its high dividend relative to its earnings), it cannot continue to increase its dividend by 6.60% without paying out an increasingly higher percentage of its earnings each year. Beginning in year 11 in this example, the investors would have to begin to liquidate the company in order to continue a 6.60% dividend growth rate, which would lead to negative earnings growth beginning in year 12. That trend would continue until the company is fully liquidated by the end of year 22.[23]

[23] The assumption of the current 20.23% retention rate of Dr. Hadaway's LDC sample in this example rather than the 30.31% retention rate of his Electric sample would accelerate this process.

Scenario II shows that, based on the same initial retention and earnings rates used in Scenario I, the actual sustainable growth rate for that hypothetical company is 3.90%. This is the appropriate growth rate to be applied in a single-stage DCF model. Based on the same observed $145.33 stock price calculated in Scenario I and a 3.90% sustainable growth rate, a single-stage DCF model would produce an investor required return of 9.85%.

Scenario III demonstrates how a company could attain a 6.60% sustainable growth rate by adjusting from an initial dividend retention rate of 31.10% to a retention rate of 52.59%. Unlike Scenario I, Scenario III recognizes and models the transition period required before a sustainable 6.60% growth rate period can begin. Specifically, Scenario III shows that, given the current 31.10% retention rate, the company's dividend must first decline 28.50% in year two before the 6.60% sustainable growth period can begin in year three. Based on the same observed $145.33 stock price used in Scenarios I and II and a post-transition 6.60% sustainable growth rate, a multi-stage DCF model would produce an investor required return of 10.66%.[24]

[24] The investor required return estimate produced under Scenario III is greater than that produced under Scenario II because the expected return on reinvested earnings exceeds the investor required return under both scenarios. Due to this difference in returns, an investor is better off reinvesting a higher percentage of earning back into the company, as under Scenario III, than to receive a higher percentage of earnings in dividends, as under Scenario II. In contrast, if the expected return on reinvested earnings were lower than the investor required return, the reverse would be true (i.e., the investor required return estimate produced under Scenario II would be greater than that produced under Scenario III). Finally, if the expected rate of return on reinvested earnings equaled the investor required rate of return, there would be no difference between the investor required return under the two scenarios.

Q14. Dr. Hadaway acknowledges that his risk premium analysis suffers from statistical deficiencies, but claims that they do not mean his approach is incorrect or not useful.[25] Please respond.

A14. Because of the statistical flaws in Dr. Hadaway's risk premium, that analysis can, at best, only be used for very general comparison purposes. However, as I noted in my direct testimony, Dr. Hadaway used the results of his risk premium analysis as an absolute benchmark by which he eliminated some of his DCF results, thereby reducing his ultimate cost of equity recommendation.[26] He has provided no data that show that the risk premium results he chose to target are any more accurate than the DCF results he eliminated. Moreover, he has provided no data to suggest that the model or the inputs underlying the DCF results he eliminated are invalid; he eliminated those results simply because they are low in relation to his risk premium results. Curiously, to support his initial risk premium analysis he presents an admittedly even "less statistically valid approach."[27] However, that approach suffers from the same flaws as his initial risk premium analysis. Dr. Hadaway does not identify the relative risk of the utilities involved in the return decisions that form the basis of both analyses. Thus, in addition to the statistical flaws, neither his new approach nor his initial approach are useful, since we have no basis on which to assess comparability between the underlying authorized returns and the cost of equity estimates for ComEd.

[25] ComEd Ex. 21.0, p. 10, lines 208-214.
[26] ICC Staff Exhibit 5.0, pp. 26-27, lines 509-534.
[27] ComEd Ex. 21.0, pp. 10-11, lines 216-228.

RESPONSE TO MR. BODMER

Q15. Do you have any concerns regarding the propriety of CUB/CCSAO witness Bodmer's approach to estimating ComEd's cost of equity by inference from the weighted average cost of capital ("WACC") calculated by Morgan Stanley for the merger of Exelon and PS&G for rate setting purposes?[28]

A15. Yes. Such an approach includes many unknowns. Mr. Bodmer attempted to infer from the investment bankers' WACC estimates the unobservable cost of equity embedded therein. However, in order to back out the cost of equity from the investment bankers' WACC estimates, Mr. Bodmer first had to make numerous assumptions. Unfortunately, we do not know if those assumptions were the same as those the investment bankers used. Thus, we do not know if his cost of equity estimate is the same as that calculated by the investment bankers. For example, we do not know if they used the same approach to determining the cost of debt, what mix of debt maturities they used, or if they included short-term debt. Further, it is unclear whether the Morgan Stanley analysis was for ComEd and PECO separately or for the proposed combined entity. We also do not know if the investment bankers used the same capital structure or made the same assumptions regarding the treatment of transitional funding instruments. Because of all of the unknowns, we cannot be certain that the investment bankers used the same 7.74% cost of equity he inferred or, even if they did, that that estimate represents the required rate of return on equity appropriate for rate setting purposes.

[28] CUB-CCSAO Exhibit 1.0, pp. 34-40, lines 1032-1202.

Q16. Mr. Bodmer notes that recent research indicates that analyst growth rates are upwardly biased.[29] Do you agree with his implication that those studies can be applied to utility growth rates?

A16. No. The studies he cites tend to report generalized findings and do not specifically suggest that growth rates for utilities are overstated relative to achieved growth. Indeed, one of the studies he cites specifically indicates that analyst growth rate estimates for utilities are not overstated. The authors of that study sorted by growth rate all domestic firms with available IBES long-term growth rate estimates, forming value-weighted portfolios in each quintile after each year, and found that the growth rates for portfolios of companies falling in the highest quintiles (i.e., having the highest growth rates) tend to be overstated relative to the growth achieved over the five years post ranking.[30] However, that study also indicates that the growth rates for portfolios of companies falling in the lowest quintile show no such tendency. That study further notes that the bottom quintile portfolios predominantly comprise firms in mature industries, with approximately 25% of those firms being utilities. Thus, utility growth rates do not appear to be upwardly biased estimators of achieved growth five years ex post.

Q17. Mr. Bodmer states that the DCF model "only works if the market is assumed to be efficient and if investor expectations are rational."[31] Do you agree?

A17. No. Cost of capital witnesses use the DCF model to assess the investor required return on common equity. Those witnesses need not assess whether the

[29] CUB-CCSAO Exhibit 1.0, pp. 11-12, lines 336-339; pp. 15-16, lines 442-488; and pp. 74-75, lines 2265-2315.
[30] Chan, Karceski, and Lakonishok, "The Level and Persistence of Growth Rates," *Journal of Finance*, April 2003, pp. 671-676.
[31] CUB-CCSAO Exhibit 1.0, p. 66, lines 2006-2012.

underlying expectations are rational or not; their objective should be solely to measure those expectations as accurately as possible.

Q18. Mr. Bodmer states that "[i]f the stock market is efficient and analyst growth rates are too high…use of analyst forecasts as the growth rate will result [sic] over-estimate the cost of [equity] capital…."[32] Do you agree?

A18. The appropriate answer depends on the benchmark used to determine if analyst growth rates are too high. If analysts' growth rate estimates are too high relative to investors' true growth expectations, Mr. Bodmer's statement is correct. That is, if analyst growth rates overstate investor expectations of future growth, use of those analyst growth rates will produce an overstated cost of equity. However, Mr. Bodmer's statement is made in the context of a discussion of whether or not analysts' growth estimates are too high relative to achieved growth, as measured after the fact. This suggests that he is assessing analyst growth rates on their ability to accurately predict future growth, not on their value as estimates of investors' ex ante expectations. If so, his statement is not necessarily correct. As noted above, the rationality of investors' true growth expectations is not at issue. Indeed, given that investors' growth expectations are forecasts of the future, they may differ significantly from the ex post achieved growth. A cost of equity witness only attempts to estimate what the investors' true growth expectations are. To the extent that analyst growth rates reflect the investors' true growth expectations, use of analyst growth rates will provide an accurate estimate of the cost of equity, if properly applied in a correctly specified DCF model, whether or not the predicted growth is ultimately realized.

[32] CUB-CCSAO Exhibit 1.0, p. 74, lines 2280-2284.

The statement in question is significant because, in context, it implies that analyst growth rates should be judged on their ability to accurately predict future growth, rather than on their value as proxies for investors' ex ante expectations. My belief that Mr. Bodmer misapplies the findings of the studies he cites regarding analyst growth rates' ability to accurately predict future growth notwithstanding, the more significant question is whether or not analyst growth rates accurately portray investor expectations of future growth. Mr. Bodmer has presented no evidence to demonstrate that analyst growth rates are poor proxies for investor growth expectations.

Q19. Mr. Bodmer claims that "[s]ince utility companies recover cash flows over the course of a year and not all at the end of the year, the quarterly DCF adjustment allows a company to recover more than its true cost of capital" and concludes that the quarterly DCF model is not appropriate for rate setting purposes.[33] Do you agree?

A19. No. Mr. Bodmer's has raised a working capital issue, not a cost of equity issue. His argument implicitly assumes that working capital is not correctly measured. A working capital allowance compensates a utility for any delay between the time it expends cash to provide service and the time it receives cash from its customer for that service.[34] If a utility is authorized an appropriate working capital allowance, by definition, it will receive cash to pay for all costs of service as they come due. Consequently, if one assumes an appropriate working capital allowance is authorized, Mr. Bodmer's argument is invalid because the working capital allowance will eliminate any surplus or deficit in earnings created by the

[33] CUB-CCSAO Exhibit 1.0, pp. 81-85, lines 2467-2603.
[34] Hahne and Aliff, Accounting for Public Utilities, Mathew Bender, 1991, p. 5-2.

timing of the utility's cash collections and disbursements. Thus, contrary to Mr. Bodmer's argument, since utility companies pays cash flows (i.e., dividends) over the course of a year and not all at the end of the year, use of a quarterly DCF model is not only appropriate for rate setting purposes, it is necessary for a utility recover its true cost of capital. In fact, the Commission has explicitly rejected the use of an annual DCF model in previous proceedings.[35]

Q20. Mr. Bodmer introduces a cost of equity model based on price to earnings ("P/E") ratios, which he presents as an alternative to the DCF model.[36] Do you have any concerns with that P/E model?

A20. Yes. Mr. Bodmer's P/E model can be stated as:

$$k = [(EPS \times (1 - g / ROE)] / P + g.$$ [37]

The DCF model can be stated as:

$$k = D_1 / P + g.$$

As one can see, the only difference between those two models is that Mr. Bodmer's P/E model substitutes the term $[(EPS \times (1 - g / ROE)]$ for the D_1 used in the DCF model. Thus, Mr. Bodmer's P/E model is merely a form of the DCF in which the D_1 term is not estimated directly, but rather, is calculated from the

[35] *See* Commonwealth Edison Company, Order, Docket No. 94-0065, January 9, 1995, p. 93 citing Northern Illinois Gas Company, Order, Docket No. 87-0032 et al., January 20, 1988, p. 36 and Commonwealth Edison Company, Order, Docket No. 83-0537, p. 34.

[36] CUB-CCSAO Exhibit 1.0, pp. 80-81, lines 2437-2465.

[37] The model presented on line 2456, p. 80 of CUB-CCSAO Exhibit 1.0 is misstated. The term presented on line 2456 as $[(EPS \times (1 - ROE / g)]$ should be correctly stated as $[(EPS \times (1 - g / ROE)]$.

ground up based on estimates of EPS, g, and ROE. The problem with this approach is that it increases measurement error, since it requires the estimation of unobservable investor expectations for three variable (EPS, g, and ROE) rather than two (D_1 and g).

In addition, Mr. Bodmer's claim that his P/E model "has advantages because it does not depend on the dividend payout ratio, the cost of capital is less sensitive to growth, and the cost of equity capital is driven by the fundamental drivers of value" is entirely false. First, Mr. Bodmer's P/E model clearly does depend on the dividend payout ratio, since, as we can see from the BxR growth rate model Dr. Hadaway used, the term ($1 - g / ROE$) used in Mr. Bodmer's P/E model is the formula for the dividend payout ratio. Second, his P/E model is, if anything, *more sensitive* than the DCF to growth. In both models, the growth rate estimate is added directly onto the dividend yield; however, in the P/E model, the growth rate estimate is also used in the calculation of the dividend yield. Third, the cost of equity capital derived from Mr. Bodmer's P/E model is no more driven by the fundamental drivers of value than the DCF model is, since both are essentially forms of the same model.

Q21. Please evaluate Mr. Bodmer's market to book value analysis.[38]

A21. Mr. Bodmer's market to book value analysis contains several flaws. First, market to book value ratios combine the discounted value of <u>future cash flows</u> with <u>historical book earnings</u>. The numerator and denominator of the ratio are inconsistent with respect to time and construction. Second, his analysis is based on the premise that one should expect a utility company to <u>precisely</u> earn its cost

[38] CUB-CCSAO Exhibit 1.0, pp. 40-45, lines 1204-1369.

of capital on a continuing basis.[39] That premise is oversimplified. There are many utility ratemaking practices (e.g., deferred taxes and depreciation) that could result in a utility's market value exceeding its book value. That is, the authorized return for each company in his sample is not the only factor influencing its earnings. Thus, a market to book ratio in excess of one does not necessarily mean the authorized rate of return is too high. Third, the Value Line betas for the 71 companies used in his analysis range from 0.50 to 1.75, indicating substantial variation in the riskiness of those companies.[40] Yet, his analysis suggests that there is a single correct cost of equity (i.e., 5.65%), that which would equate market value to book value, for all 71 companies in his analysis. Even if Mr. Bodmer were correct that the market to book value ratio for a utility that earned its required rate of return on common equity would equal one, companies with different risks must have different required rates of return. Thus, Mr. Bodmer's cross-sectional analysis is useless for establishing ComEd's cost of common equity given that he failed to establish that ComEd's risk is equal to the average risk of the 71 companies used in his analysis.

Q22. Mr. Bodmer criticizes the use in the CAPM of betas adjusted for reversion to the market mean of 1.0.[41] Why did you adjust your raw beta estimates?

A22. As Mr. Bodmer notes, the beta parameter is generally derived from historical data, but, in theory, should be a forward-looking number.[42] I adjusted the raw (i.e., historical) betas for the companies in my samples to estimate forward-looking betas. Ex post empirical tests of the CAPM suggest that the linear

[39] ComEd Ex. 21.0, p. 40, lines 1209-1211 and p. 41, lines 1239-1243.
[40] CUB-CCSAO Exhibit 1.04.
[41] CUB-CCSAO Exhibit 1.0, pp. 55-56, lines 1661-1699.
[42] CUB-CCSAO Exhibit 1.0, p. 52, lines 1576-1577.

relationship between risk, as measured by raw beta, and return is flatter than the CAPM predicts.[43] That is, securities with raw betas less than one tend to realize higher returns than the CAPM predicts. Conversely, securities with raw betas greater than one tend to realize lower returns than the CAPM predicts. Adjusting the raw beta estimate towards the market mean of 1.0 results in a linear relationship between the beta estimate and realized return that more closely conforms to the CAPM prediction. Securities with betas less than one are adjusted upwards thereby increasing the predicted required rate of return towards observed realized rates of return. Conversely, securities with betas greater than one are adjusted downwards thereby decreasing the predicted rate of return towards observed realized rates of return. Thus, adjusted betas surpass raw betas as predictors of future returns and are, therefore, superior forward-looking betas. Consistently, the Armitage text Mr. Bodmer cites with regard to this argument notes that studies have shown that such adjustments result in appreciably better forecasts, finding that the reduction in both bias and inefficiency is greater the further away from one the beta in question is.[44]

Q23. The Armitage text that Mr. Bodmer cites also "refers to a study by Gombola and Kahl that suggested that the adjustment for utility company betas should not push the statistic toward 1.0, but rather toward .5."[45] Do you agree with Mr. Bodmer's conclusion that use of an adjusted beta is wrong?

A23. Armitage states that the observed flatness of the Securities Market Line discussed above is due to two factors: 1) error in the estimation of true betas

[43] Litzenberger, Ramaswamy and Sosin, "On the CAPM Approach to the Estimation of A Public Utility's Cost of Equity Capital," Journal of Finance, May 1980, pp. 375-376.
[44] Armitage, S., The Cost of Capital: Intermediate Theory, 2005, pp. 284-285.
[45] CUB-CCSAO Exhibit 1.0. p. 56, lines 1684-1686.

(i.e., the further above (or below) the mean an observed beta is, the more likely it is that the estimate error is positive (or negative)) and 2) regression toward the mean (i.e., moderation in risk over time).[46] Mr. Bodmer cites the Gombola and Kahl article to suggest that the benchmark mean for utilities should be 0.5 rather than the market mean of 1.0. However, the applicability of the Gombola and Kahl findings in this proceeding is doubtful. To begin with, the Gombola and Kahl study does not specifically conclude that utilities should be assumed to revert to a mean of 0.5. Rather, they more broadly conclude that the market mean of 1.0 is too high, and the typical adjustment rate of 0.35 is too low.[47] Regardless, the Gombola and Kahl study is based on a 15-year sample period ending in 1981. It is likely utility betas have changed since that time, rendering the 0.5 mean inapplicable anyway. Finally, the derivation of the true industry mean beta is problematic. Gombola and Kahl's findings are based on an industry portfolio beta mean. As noted above, the farther below the market mean a raw beta is, the more likely its estimate error is to be negative. Thus, the average of a portfolio of low betas, each of which is likely to be biased downward, will, itself, likely be biased downward.

Q24. Does this conclude your rebuttal testimony?

A24. Yes, it does.

[46] Armitage, S., The Cost of Capital: Intermediate Theory, 2005, p. 283.

[47] Gombola, Michael J. and Douglas R. Kahl, "Time Series Processes of Utility Betas: Implications for Forecasting Systematic Risk," *Journal of the Financial Management Association*, Volume 19, p. 92.

Regulatory Focus

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Regulatory Study
January 12, 2006

MAJOR RATE CASE DECISIONS--JANUARY 2004-DECEMBER 2005
SUPPLEMENTAL STUDY

In conjunction with the preparation of the Regulatory Study entitled *Major Rate Case Decisions--January 1990-December 2005*, which will be distributed in the next few weeks, RRA has prepared chronological listings of all cases in that study for the years 2004 and 2005, by type of utility service. These listings, with key data concerning each case, appear on pages 5 through 10 of this Supplemental Study. Tables summarizing cases decided in the last 11 years appear on pages 2 and 3. The average return on equity (ROE) authorized electric utilities in 2005 approximated 10.5%, down slightly from 10.8% in 2004. There were 29 electric ROE determinations in 2005, and 19 in 2004. The average ROE authorized gas utilities also approximated 10.5% in 2005, compared to 10.6% in 2004. There were 26 gas cases that included an ROE determination in 2005, and 20 in 2004. For the telecommunications industry, there was one ROE determination (10.5%) in 2005 and one (10%) in 2004. We note that the above ROEs are simple, non-weighted averages.

After reaching a low in the late-1990's and early-2000's, the number of equity return determinations for energy companies has generally increased over the last several years. In fact, the total number of ROE determinations for electric, gas, and telecommunications companies in 2005 was 56, the most since the 57 determinations in 1995. Increased costs (especially medical insurance and pension expenses) and the need for generation and delivery system infrastructure upgrades and expansion at many companies, argue for a continuation of the increased level of rate case activity over the next several years. However, relatively low inflation and interest rates, competitive pressures, technological improvements, the use of settlements that do not specify return parameters, and a reduced number of companies due to mergers, may prevent the number of rate cases and equity return determinations from increasing dramatically. We note that electric industry restructuring in many states has led to the unbundling of rates, with state commissions authorizing revenue requirement and return parameters for distribution and/or transmission operations only (which we footnote in our chronology table), thus complicating historical data comparability.

The individual electric, gas, and telecommunications cases listed on pages 5 through 10 are presented with the decision date shown first, followed by the company name, the abbreviation of the state issuing the decision, the authorized rate of return (ROR) and ROE, and the common equity component in the adopted capital structure. If the capital structure contained cost-free capital or investment tax credit balances at the overall rate of return, an asterisk (*) follows the number in this column. Next we show the month and year in which the adopted test year ended, whether the commission utilized an average or a year-end rate base, and the amount of the permanent rate change authorized. The dollar amount represents the permanent rate change ordered at the time a decision was issued. In a few cases, an interim rate change was previously ordered. Fuel adjustment clause rate changes are not reflected in this study.

(Text continued on page 4.)

2. RRA

Average Equity Returns Authorized January 1995 - December 2005

(Return Percent - No. of Observations)

	Period	Electric Utilities	Gas Utilities	Telephone Utilities
1995	Full Year	11.55 (33)	11.43 (16)	12.08 (8)
1996	Full Year	11.39 (22)	11.19 (20)	11.74 (4)
1997	Full Year	11.40 (11)	11.29 (13)	11.56 (5)
1998	Full Year	11.66 (10)	11.51 (10)	11.30 (1)
1999	1st Quarter	10.58 (4)	10.82 (3)	13.00 (1)
	2nd Quarter	10.94 (4)	10.82 (3)	--- (0)
	3rd Quarter	10.63 (8)	--- (0)	--- (0)
	4th Quarter	11.08 (4)	10.33 (3)	--- (0)
1999	Full Year	10.77 (20)	10.66 (9)	13.00 (1)
2000	1st Quarter	11.06 (5)	10.71 (1)	11.50 (1)
	2nd Quarter	11.11 (2)	11.08 (4)	--- (0)
	3rd Quarter	11.68 (2)	11.33 (5)	11.25 (1)
	4th Quarter	12.08 (3)	12.50 (2)	--- (0)
2000	Full Year	11.43 (12)	11.39 (12)	11.38 (2)
2001	1st Quarter	11.38 (2)	11.16 (4)	--- (0)
	2nd Quarter	10.88 (2)	10.75 (1)	--- (0)
	3rd Quarter	10.78 (8)	--- (0)	--- (0)
	4th Quarter	11.50 (6)	10.65 (2)	--- (0)
2001	Full Year	11.09 (18)	10.95 (7)	--- (0)
2002	1st Quarter	10.87 (5)	10.67 (3)	--- (0)
	2nd Quarter	11.41 (6)	11.64 (4)	--- (0)
	3rd Quarter	11.06 (4)	11.50 (3)	--- (0)
	4th Quarter	11.20 (7)	10.78 (11)	--- (0)
2002	Full Year	11.16 (22)	11.03 (21)	--- (0)
2003	1st Quarter	11.47 (7)	11.38 (5)	--- (0)
	2nd Quarter	11.16 (4)	11.36 (4)	--- (0)
	3rd Quarter	9.95 (5)	10.61 (5)	--- (0)
	4th Quarter	11.09 (6)	10.84 (11)	--- (0)
2003	Full Year	10.97 (22)	10.99 (25)	--- (0)
2004	1st Quarter	11.00 (3)	11.10 (4)	10.00 (1)
	2nd Quarter	10.54 (6)	10.25 (2)	--- (0)
	3rd Quarter	10.33 (2)	10.37 (8)	--- (0)
	4th Quarter	10.91 (8)	10.66 (6)	--- (0)
2004	Full Year	10.75 (19)	10.59 (20)	10.00 (1)
2005	1st Quarter	10.51 (7)	10.65 (2)	--- (0)
	2nd Quarter	10.05 (7)	10.54 (5)	--- (0)
	3rd Quarter	10.84 (4)	10.47 (5)	10.50 (1)
	4th Quarter	10.75 (11)	10.40 (14)	--- (0)
2005	Full Year	10.54 (29)	10.46 (26)	10.50 (1)

Electric Utilities--Summary Table*

	Period	ROR %	ROE %	Eq. as % Cap. Struc.	Amt. $ Mil.
1995	Full Year	9.44 (30)	11.55 (33)	45.90 (30)	455.7 (43)
1996	Full Year	9.21 (20)	11.39 (22)	44.34 (20)	-5.6 (38)
1997	Full Year	9.16 (12)	11.40 (11)	48.79 (11)	-553.3 (33)
1998	Full Year	9.44 (9)	11.66 (10)	46.14 (8)	-429.3 (31)
1999	Full Year	8.81 (18)	10.77 (20)	45.08 (17)	-1,683.8 (30)
2000	Full Year	9.20 (12)	11.43 (12)	48.85 (12)	-291.4 (34)
2001	Full Year	8.93 (15)	11.09 (18)	47.20 (13)	14.2 (21)
2002	Full Year	8.72 (20)	11.16 (22)	46.27 (19)	-475.4 (24)
2003	Full Year	8.86 (20)	10.97 (22)	49.41 (19)	313.8 (22)
2004	1st Quarter	8.94 (3)	11.00 (3)	44.94 (3)	-716.4 (4)
	2nd Quarter	7.88 (6)	10.54 (6)	45.59 (6)	641.8 (11)
	3rd Quarter	9.01 (2)	10.33 (2)	45.05 (2)	119.4 (4)
	4th Quarter	8.55 (7)	10.91 (8)	49.64 (6)	1,047.8 (11)
2004	Full Year	8.44 (18)	10.75 (19)	46.84 (17)	1,092.6 (30)
2005	1st Quarter	8.57 (6)	10.51 (7)	44.55 (7)	482.1 (8)
	2nd Quarter	8.27 (5)	10.05 (7)	48.30 (5)	180.2 (9)
	3rd Quarter	7.78 (4)	10.84 (4)	43.58 (4)	40.2 (5)
	4th Quarter	8.37 (11)	10.75 (11)	48.55 (11)	671.2 (14)
2005	Full Year	8.31 (26)	10.54 (29)	46.73 (27)	1,373.7 (36)

Gas Utilities--Summary Table*

1995	Full Year	9.64 (16)	11.43 (16)	49.98 (15)	-61.5 (31)
1996	Full Year	9.25 (23)	11.19 (20)	47.69 (19)	193.4 (34)
1997	Full Year	9.13 (13)	11.29 (13)	47.78 (11)	-82.5 (21)
1998	Full Year	9.46 (10)	11.51 (10)	49.50 (10)	93.9 (20)
1999	Full Year	8.86 (9)	10.66 (9)	49.06 (9)	51.0 (14)
2000	Full Year	9.33 (13)	11.39 (12)	48.59 (12)	135.9 (20)
2001	Full Year	8.51 (6)	10.95 (7)	43.96 (5)	114.0 (11)
2002	Full Year	8.80 (20)	11.03 (21)	48.29 (18)	303.6 (26)
2003	Full Year	8.75 (22)	10.99 (25)	49.93 (22)	260.1 (30)
2004	1st Quarter	8.52 (4)	11.10 (4)	45.61 (4)	56.3 (6)
	2nd Quarter	8.21 (3)	10.25 (2)	46.90 (2)	121.7 (9)
	3rd Quarter	8.27 (8)	10.37 (8)	42.92 (8)	113.4 (8)
	4th Quarter	8.40 (6)	10.66 (6)	49.72 (6)	12.1 (8)
2004	Full Year	8.34 (21)	10.59 (20)	45.90 (20)	303.5 (31)
2005	1st Quarter	8.19 (3)	10.65 (2)	43.00 (1)	50.8 (4)
	2nd Quarter	8.17 (5)	10.54 (5)	47.69 (4)	99.5 (6)
	3rd Quarter	8.15 (6)	10.47 (5)	49.54 (5)	75.3 (7)
	4th Quarter	8.33 (15)	10.40 (14)	49.03 (14)	232.8 (17)
2005	Full Year	8.25 (29)	10.46 (26)	48.66 (24)	458.4 (34)

Telephone Utilities--Summary Table*

1995	Full Year	9.81 (8)	12.08 (8)	55.02 (7)	-264.0 (14)
1996	Full Year	9.65 (2)	11.74 (4)	56.00 (2)	-348.2 (11)
1997	Full Year	9.57 (5)	11.56 (5)	55.84 (5)	-154.4 (7)
1998	Full Year	9.37 (1)	11.30 (1)	52.00 (1)	-323.3 (13)
1999	Full Year	11.34 (1)	13.00 (1)	66.90 (1)	-570.1 (19)
2000	Full Year	9.52 (2)	11.38 (2)	56.59 (2)	-390.4 (14)
2001	Full Year	9.61 (1)	--- (0)	--- (0)	-130.0 (8)
2002	Full Year	--- (0)	--- (0)	--- (0)	7.7 (4)
2003	Full Year	--- (0)	--- (0)	--- (0)	-62.6 (2)
2004	1st Quarter	8.02 (1)	10.00 (1)	44.18 (1)	3.1 (1)
	2nd Quarter	--- (0)	--- (0)	--- (0)	--- (0)
	3rd Quarter	--- (0)	--- (0)	--- (0)	--- (0)
	4th Quarter	--- (0)	--- (0)	--- (0)	--- (0)
2004	Full Year	8.02 (1)	10.00 (1)	44.18 (1)	3.1 (1)
2005	1st Quarter	--- (0)	--- (0)	--- (0)	--- (0)
	2nd Quarter	--- (0)	--- (0)	--- (0)	71.9 (2)
	3rd Quarter	8.72 (1)	10.50 (1)	54.00 (1)	-8.2 (1)
	4th Quarter	--- (0)	--- (0)	--- (0)	--- (0)
2005	Full Year	8.72 (1)	10.50 (1)	54.00 (1)	63.7 (3)

ndicated in parentheses.

The table on page 2 shows the average ROE authorized annually since 1995 and by quarter since 1999, in major electric, gas, and telecommunications rate decisions, followed by the number of observations in each period. The tables on page 3 show the composite electric, gas, and telecommunications industry data for all the cases included in the chronology of this and earlier reports, summarized annually since 1995 and by quarter for the past eight quarters.

The table below tracks the average equity return authorized for all electric, gas, and telecommunications rate cases combined, by year, for the last 16 years. As the table reveals, since 1990 authorized ROEs have generally trended downward, reflecting the significant decline in interest rates that has occurred over this time frame. The combined average equity returns authorized for all utilities in each of the years 1990 though 2005, and the number of observations for each year are as follows:

1990	12.71%	(84)	1998	11.57%	(21)
1991	12.57	(96)	1999	10.81	(30)
1992	12.08	(84)	2000	11.41	(26)
1993	11.44	(89)	2001	11.05	(25)
1994	11.42	(70)	2002	11.10	(43)
1995	11.59	(57)	2003	10.98	(47)
1996	11.33	(46)	2004	10.64	(40)
1997	11.38	(29)	2005	10.50	(56)

Dennis Sperduto

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ELECTRIC UTILITY DECISIONS

Date	Company (State)	ROR %	ROE %	Common Eq. as % Cap. Str.	Test Year & Rate Base	Amt. $ Mil.
1/13/04	Madison Gas and Electric (WI)	9.37 (G)	12.00	55.91	12/04-A	11.7
2/26/04	Pacific Gas and Electric (CA)	---	---	---	---	-799.0 (B)
3/2/04	PacifiCorp (WY)	8.42	10.75	44.95	9/02-YE	22.9
3/26/04	Nevada Power (NV)	9.03	10.25	33.97	5/03-YE	48.0
2004	***1ST QUARTER AVERAGES/TOTAL***	**8.94**	**11.00**	**44.94**		**-716.4**
	OBSERVATIONS	**3**	**3**	**3**		**4**
4/5/04	Interstate Power and Light (MN)	9.05	11.25 (R)	47.15	12/02-A	0.6 (I,R)
4/13/04	Aquila-MPS (MO)	---	---	---	---	14.5 (B)
4/13/04	Aquila-L&P (MO)	---	---	---	---	3.3 (B)
5/5/04	Wisconsin Electric Power (WI)	---	---	---	12/04-A	59.0
5/18/04	PSI Energy (IN)	7.30	10.50	44.44 *	9/02-YE	107.3
5/20/04	Rochester Gas & Electric (NY)	---	---	---	4/05-A	7.4 (B,1)
5/25/04	Idaho Power (ID)	7.85	10.25	45.97	12/03-A	39.5 (R,B,Z)
5/27/04	Sierra Pacific Power (NV)	9.26	10.25	35.77	7/03-YE	46.7 (B)
6/2/04	Pacific Gas & Electric (CA)	---	---	---	12/03-A	274.0 (B)
6/30/04	Kentucky Utilities (KY)	7.00 (G)	10.50	51.58	9/03-YE	46.1 (B,2)
6/30/04	Louisville Gas and Electric (KY)	6.79 (G)	10.50	48.60	9/03-YE	43.4 (B,3)
2004	***2ND QUARTER AVERAGES/TOTAL***	**7.88**	**10.54**	**45.59**		**641.8**
	OBSERVATIONS	**6**	**6**	**6**		**11**
7/16/04	Southern California Edison (CA)	---	---	---	12/03-A	73.0
8/25/04	Aquila (CO)	8.76	10.25	47.50	8/03-A	8.2 (B)
9/2/04	Public Service New Hampshire (NH)	---	---	---	---	13.5 (B,Z,TD)
9/9/04	Avista Corp. (ID)	9.25	10.40	42.59	12/02-A	24.7
2004	***3RD QUARTER AVERAGES/TOTAL***	**9.01**	**10.33**	**45.05**		**119.4**
	OBSERVATIONS	**2**	**2**	**2**		**4**
10/27/04	PacifiCorp (WA)	8.39	---	---	---	15.0 (B)
11/9/04	Narragansett Electric (RI)	8.89 (E)	10.50	50.00	---	-10.2 (B,Di)
11/23/04	Cincinnati Gas & Electric (OH)	---	---	---	---	85.0 (R,Z)
11/23/04	Detroit Edison (MI)	7.24	11.00	38.08 *	12/02-A	373.7 (I)
12/8/04	San Diego Gas & Electric (CA)	---	---	---	12/04-A	-8.2 (B,Di)
12/14/04	Interstate Power & Light (IA)	8.83	10.97	47.89	12/03-A	106.7 (I,B)
12/21/04	Georgia Power (GA)	---	11.25	---	12/05-A	194.1 (B)
12/21/04	Wisconsin Public Service (WI)	8.89 (G)	11.50	57.35	12/05-A	61.0
12/22/04	PPL-Electric Utilities (PA)	8.43	10.70	46.87	12/04-YE	194.3 (TD)
12/22/04	Madison Gas and Electric (WI)	9.18 (G)	11.50	57.64	12/05-A	27.4
12/29/04	Western Massachusetts Electric (MA)	---	9.85	---	---	9.0 (B,Di,Z)
2004	***4TH QUARTER AVERAGES/TOTAL***	**8.55**	**10.91**	**49.64**		**1047.8**
	OBSERVATIONS	**7**	**8**	**6**		**11**
2004	***FULL-YEAR AVERAGES/TOTAL***	**8.44**	**10.75**	**46.84**		**1092.6**
	OBSERVATIONS	**18**	**19**	**17**		**30**

ELECTRIC UTILITY DECISIONS (continued)

Date	Company (State)	ROR %	ROE %	Common Eq. as % Cap. Str.	Test Year & Rate Base	Amt. $ Mil.	
1/6/05	South Carolina Electric & Gas (SC)	8.64	10.70	50.31	12/04-YE	41.4	
1/28/05	Aquila Networks-WPK (KS)	8.73	10.50	33.63	12/03-YE	7.4	
2/18/05	Puget Sound Energy (WA)	8.40	10.30	43.00	9/03-A	56.6	
2/25/05	PacifiCorp (UT)	8.37	10.50	47.80	3/06	51.0	(B)
3/10/05	Empire District Electric (MO)	9.18	11.00	49.14	12/03-YE	25.7	(B)
3/18/05	Dominion North Carolina Power (NC)	---	---	---	12/03	-12.0	(B)
3/24/05	Consolidated Edison of New York (NY)	8.08	10.30	48.00	3/06-A	325.0	(B,Z,TD)
3/31/05	Texas-New Mexico Power (TX)	---	10.25	40.00	---	-13.0	(B,Di)
2005	***1ST QUARTER AVERAGES/TOTAL***	**8.57**	**10.51**	**44.55**		**482.1**	
	OBSERVATIONS	**6**	**7**	**7**		**8**	
4/4/05	Central Vermont Public Service (VT)	8.14	10.00	55.53	12/03-A	-7.2	(R)
4/7/05	Arizona Public Service (AZ)	7.80	10.25	45.00 (Hy)	12/02-YE	67.6	(B)
5/2/05	Public Service Co. of Oklahoma (OK)	---	---	---	6/03-YE	-6.9	(B)
5/17/05	Wisconsin Electric Power (WI)	---	---	---	12/05-A	59.7	
5/18/05	Entergy Louisiana (LA)	8.76	10.25	48.73	12/02-A	0.0	(B)
5/25/05	Savannah Electric and Power (GA)	---	10.75	---	---	9.6	(B)
5/26/05	Atlantic City Electric (NJ)	8.14	9.75	46.22	12/02-YE	-3.1	(Di,B)
5/26/05	Idaho Power (ID)	---	---	---	---	9.4	
6/1/05	Jersey Central Power & Light (NJ)	8.50	9.75	46.00	12/02-YE	51.1	(Di,B)
6/8/05	Public Service New Hampshire (NH)	---	9.62 (R, Gn)	---	---	---	
2005	***2ND QUARTER AVERAGES/TOTAL***	**8.27**	**10.05**	**48.30**		**180.2**	
	OBSERVATIONS	**5**	**7**	**5**		**9**	
7/19/05	Wisconsin Power and Light (WI)	9.41 (G)	11.50	61.75	6/06-A	18.6	
7/22/05	PacifiCorp (ID)	---	---	---	---	5.8	(B)
8/5/05	Cap Rock Energy (TX)	6.17	11.75	25.00 (Hy)	9/03-YE	-1.3	
8/15/05	AEP Texas Central (TX)	7.48	10.13	40.00	6/03-YE	-8.8	(TD,B)
9/28/05	PacifiCorp (OR)	8.06	10.00	47.56	12/06-A	25.9	(Bp)
2005	***3RD QUARTER AVERAGES/TOTAL***	**7.78**	**10.84**	**43.58**		**40.2**	
	OBSERVATIONS	**4**	**4**	**4**		**5**	
12/9/05	Empire District Electric (KS)	---	---	---	---	2.2	(B)
12/12/05	Madison Gas and Electric (WI)	8.88 (G)	11.00	56.65	12/06-A	35.9	
12/13/05	OGE Electric Service (OK)	8.66	10.75	55.69	12/04-YE	42.3	
12/16/05	Pacific Gas and Electric (CA)	8.79	11.35	52.00	12/06	3.3	
12/16/05	San Diego Gas & Electric (CA)	8.23	10.70	49.00	12/06	0.0	
12/16/05	Southern California Edison (CA)	8.77	11.60	48.00	12/06	-26.4	
12/22/05	Wisconsin Public Service (WI)	8.83 (G)	11.00	59.73	12/06-A	79.9	
12/21/05	Cincinnati Gas & Electric (OH)	8.24	10.29	47.53	6/05-A	51.5	(Di,B)
12/21/05	Avista (WA)	9.11	10.40	40.00	12/04-A	22.1	(B)
12/22/05	Consumers Energy (MI)	6.78	11.15	36.31 *	12/03-A	177.4	
12/28/05	Westar Energy North (KS)	7.89	10.00	44.59	12/04-YE	24.2	
12/28/05	Kansas Gas and Electric (KS)	7.89	10.00	44.59	12/04-YE	-21.2	
12/28/05	Dayton Power & Light (OH)	---	---	---	---	250.0	(E,B,Z)
12/30/05	NSTAR Electric (MA)	---	---	---	---	30.0	(B,Di,4)
2005	***4TH QUARTER AVERAGES/TOTAL***	**8.37**	**10.75**	**48.55**		**671.2**	
	OBSERVATIONS	**11**	**11**	**11**		**14**	
2005	***FULL-YEAR AVERAGES/TOTAL***	**8.31**	**10.54**	**46.73**		**1373.7**	
	OBSERVATIONS	**26**	**29**	**27**		**36**	

GAS UTILITY DECISIONS

Date	Company (State)	ROR %	ROE %	Common Eq. as % Cap. Str.	Test Year & Rate Base	Amt. $ Mil.
1/13/04	Union Electric (MO)	---	---	---	---	13.0 (B)
1/13/04	Madison Gas and Electric (WI)	9.37 (G)	12.00	55.91	12/04-A	1.0
1/13/04	Public Service Co. of New Mexico (NM)	8.16	10.25	47.77	9/02-YE	22.0 (B,Z)
1/21/04	Aquila (NE)	---	---	---	---	6.2 (I,B)
2/9/04	City Gas Co. of Florida (FL)	7.36	11.25	36.77 *	9/04-A	6.7 (I)
3/16/04	Southwest Gas (CA)	9.17	10.90	42.00	12/03-A	7.4 (5)
2004	***1ST QUARTER AVERAGES/TOTAL***	**8.52**	**11.10**	**45.61**		**56.3**
	OBSERVATIONS	**4**	**4**	**4**		**6**
4/22/04	Aquila Networks-MPS (MO)	---	---	---	---	2.6 (B)
4/22/04	Aquila Networks-L&P (MO)	---	---	---	---	0.8 (B)
5/5/04	Wisconsin Gas (WI)	---	---	---	12/04-A	26.0 (I)
5/20/04	Rochester Gas & Electric (NY)	---	---	---	4/05-A	7.2 (B,1)
5/25/04	TXU-Gas (TX)	8.26	10.00	49.80	12/02-YE	12.0
6/2/04	Pacific Gas & Electric (CA)	---	---	---	12/03-A	52.0 (B)
6/23/04	Northwest Natural Gas (WA)	8.95	---	---	---	3.5 (B)
6/30/04	Southern Indiana Gas and Electric (IN)	7.41	10.50 (B)	44.00 *	9/03-YE	5.7 (B)
6/30/04	Louisville Gas and Electric (KY)	---	---	---	9/03-YE	11.9 (B)
2004	***2ND QUARTER AVERAGES/TOTAL***	**8.21**	**10.25**	**46.90**		**121.7**
	OBSERVATIONS	**3**	**2**	**2**		**9**
7/8/04	South Jersey Gas (NJ)	7.97	10.00	46.00	2/04-YE	20.0 (B)
7/22/04	CenterPoint Energy Arkla (LA)	8.09	10.25	45.80 (Hy)	6/03-A	7.1 (B)
8/26/04	Southwest Gas, Southern Division (NV)	7.45	10.50	40.00	9/03-YE	7.3
8/26/04	Southwest Gas, Northern Division (NV)	8.56	10.50	40.00	9/03-YE	6.4
9/9/04	Avista Corp. (ID)	9.25	10.40	42.59	12/02-A	3.3
9/21/04	Missouri Gas Energy (MO)	8.36	10.50	29.99	6/03-YE	22.5
9/27/04	Consolidated Edison of New York (NY)	8.06	10.30	48.00	9/05-A	46.8 (B)
9/27/04	Washington Gas (VA)	8.44	10.50	50.96	6/03-YE	0.0 (B)
2004	***3RD QUARTER AVERAGES/TOTAL***	**8.27**	**10.37**	**42.92**		**113.4**
	OBSERVATIONS	**8**	**8**	**8**		**8**
10/20/04	Chattanooga Gas (TN)	7.43	10.20	35.50	9/03-A	0.6
11/30/04	Indiana Gas (IN)	8.38	10.60	50.06	9/03-YE	24.0 (B)
12/8/04	San Diego Gas & Electric (CA)	---	---	---	12/04-A	1.6 (B,Di)
12/8/04	Southern California Gas (CA)	---	---	---	12/04-A	-33.0 (B,Di)
12/8/04	Yankee Gas Services (CT)	7.99	9.90	47.90	---	14.0 (B)
12/21/04	Wisconsin Public Service (WI)	8.89 (G)	11.50	57.35	12/05-A	5.6
12/22/04	Madison Gas and Electric (WI)	9.18 (G)	11.50	57.64	12/05-A	-4.2
12/28/04	CenterPoint Energy Arkla (OK)	8.51	10.25	49.86	3/04-YE	3.5 (B)
2004	***4TH QUARTER AVERAGES/TOTAL***	**8.40**	**10.66**	**49.72**		**12.1**
	OBSERVATIONS	**6**	**6**	**6**		**8**
2004	***FULL-YEAR AVERAGES/TOTAL***	**8.34**	**10.59**	**45.90**		**303.5**
	OBSERVATIONS	**21**	**20**	**20**		**31**

GAS UTILITY DECISIONS (continued)

Date	Company (State)	ROR %	ROE %	Common Eq. as % Cap. Str.	Test Year & Rate Base	Amt. $ Mil.
1/5/05	Avista Corporation (WA)	8.68	---	---	---	5.4 (B)
2/18/05	Puget Sound Energy (WA)	8.40	10.30	43.00	9/03-A	26.3
3/29/05	SEMCO Energy Gas (MI)	7.49	11.00	---	12/05	7.1 (B)
3/30/05	National Fuel Gas Distribution (PA)	---	---	---	5/04-YE	12.0 (B)
2005	***1ST QUARTER AVERAGES/TOTAL***	**8.19**	**10.65**	**43.00**		**50.8**
	OBSERVATIONS	**3**	**2**	**1**		**4**
4/13/05	Vectren Energy Delivery of Ohio (OH)	8.94	10.60	48.10 (E)	12/04-A	15.7
4/28/05	Michigan Consolidated Gas (MI)	7.19	11.00	39.31 *	12/02-A	60.8 (I)
5/4/05	Aquila Networks-KGO (KS)	---	---	---	---	2.7 (B)
5/17/05	AmerenIP (IL)	8.18	10.00	53.09	12/03-YE	11.3 (Bp)
6/8/05	CenterPoint Energy Minnegasco (MN)	8.03	10.18	50.27	9/05-A	9.0 (I,B)
6/10/05	Atlanta Gas Light (GA)	8.53 (R)	10.90 (R)	---	11/05-A	0.0 (R,B,6)
2005	***2ND QUARTER AVERAGES/TOTAL***	**8.17**	**10.54**	**47.69**		**99.5**
	OBSERVATIONS	**5**	**5**	**4**		**6**
7/6/05	Entergy Gulf States (LA)	8.11	10.50	47.52	9/03-A	5.8 (B)
7/19/05	Wisconsin Power and Light (WI)	9.41 (G)	11.50	61.75	6/06-A	2.0
7/22/05	National Fuel Gas Distribution (NY)	---	---	---	7/06-A	21.0 (B)
8/11/05	Northern States Power (MN)	8.76	10.40	50.24	12/04-A	5.8 (I,B)
8/24/05	Mountaineer Gas (WV)	8.43	---	---	12/03-YE	17.3 (B,Z)
9/19/05	CenterPoint Energy Arkansas Gas (AR)	5.31	9.45	31.80 *	4/04-YE	-11.3
9/30/05	Northern Illinois Gas (IL)	8.85	10.51	56.37	12/05-A	34.7 (7)
2005	***3RD QUARTER AVERAGES/TOTAL***	**8.15**	**10.47**	**49.54**		**75.3**
	OBSERVATIONS	**6**	**5**	**5**		**7**
10/3/05	Laclede Gas (MO)	---	---	---	---	8.5 (B)
10/4/05	Oklahoma Natural Gas (OK)	8.74	9.90	46.76	7/04-YE	57.5 (B)
10/14/05	Interstate Power & Light (IA)	8.68	10.40	49.35	12/04-A	14.0 (I,B)
10/21/05	Dominion Hope Gas (WV)	---	---	---	12/04-YE	4.0 (B)
10/31/05	South Carolina Electric & Gas (SC)	8.43	10.25	50.75	12/04-YE	22.9 (B)
11/2/05	Arkansas Western Gas (AR)	5.93	9.70	33.03 *	1/05-YE	4.6
11/3/05	Piedmont Natural Gas (NC)	9.04	---	---	12/04	22.4 (B)
11/30/05	Bay State Gas (MA)	8.22	10.00	53.95	12/04-YE	11.1
12/9/05	Arkansas Oklahoma Gas (AR)	6.61	9.70	41.04 *(E)	8/04-YE	4.4
12/12/05	Madison Gas and Electric (WI)	8.88 (G)	11.00	56.65	12/06-A	3.8
12/16/05	Pacific Gas and Electric (CA)	8.79	11.35	52.00	12/06	1.0
12/16/05	San Diego Gas & Electric (CA)	8.23	10.70	49.00	12/06	0.0
12/22/05	Wisconsin Public Service (WI)	8.83 (G)	11.00	59.73	12/06-A	7.2
12/21/05	Baltimore Gas & Electric (MD)	8.49	11.00	48.40	7/05-A	35.6
12/21/05	Avista (WA)	9.11	10.40	40.00	12/04-A	1.0 (B)
12/22/05	Union Light, Heat and Power (KY)	8.10 (G)	10.20	54.45	9/06-A	8.1
12/28/05	Southern Connecticut Gas (CT)	8.85	10.00	51.28	12/04-YE	26.7 (B)
2005	***4TH QUARTER AVERAGES/TOTAL***	**8.33**	**10.40**	**49.03**		**232.8**
	OBSERVATIONS	**15**	**14**	**14**		**17**
2005	***FULL-YEAR AVERAGES/TOTAL***	**8.25**	**10.46**	**48.66**		**458.4**
	OBSERVATIONS	**29**	**26**	**24**		**34**

TELEPHONE UTILITY DECISIONS

Date	Company (State)	ROR %	ROE %	Common Eq. as % Cap. Str.	Test Year & Rate Base	Amt. $ Mil.
1/29/04	CenturyTel of North West Arkansas (AR)	8.02	10.00	44.18 *	6/02-YE	3.1 (B)
2004	***1ST QUARTER AVERAGES/TOTAL***	**8.02**	**10.00**	**44.18**		**3.1**
	OBSERVATIONS	**1**	**1**	**1**		**1**
2004	***2ND QUARTER AVERAGES/TOTAL***	---	---	---		---
	OBSERVATIONS	**0**	**0**	**0**		**0**
2004	***3RD QUARTER AVERAGES/TOTAL***	---	---	---		---
	OBSERVATIONS	**0**	**0**	**0**		**0**
2004	***4TH QUARTER AVERAGES/TOTAL***	---	---	---		---
	OBSERVATIONS	**0**	**0**	**0**		**0**
2004	***FULL-YEAR AVERAGES/TOTAL***	**8.02**	**10.00**	**44.18**		**3.1**
	OBSERVATIONS	**1**	**1**	**1**		**1**
2005	***1ST QUARTER AVERAGES/TOTAL***	---	---	---		---
	OBSERVATIONS	**0**	**0**	**0**		**0**
4/12/05	Verizon-Northwest (WA)	---	---	---	9/03-A	38.6 (B,Z)
4/15/05	Verizon New Jersey (NJ)	---	---	---	---	33.3
2005	***2ND QUARTER AVERAGES/TOTAL***	---	---	---		**71.9**
	OBSERVATIONS	**0**	**0**	**0**		**2**
9/26/05	Verizon New England (VT)	8.72	10.50	54.00	12/03-A	-8.2
2005	***3RD QUARTER AVERAGES/TOTAL***	**8.72**	**10.50**	**54.00**		**-8.2**
	OBSERVATIONS	**1**	**1**	**1**		**1**
2005	***4TH QUARTER AVERAGES/TOTAL***	---	---	---		---
	OBSERVATIONS	**0**	**0**	**0**		**0**
2005	***FULL-YEAR AVERAGES/TOTAL***	**8.72**	**10.50**	**54.00**		**63.7**
	OBSERVATIONS	**1**	**1**	**1**		**3**

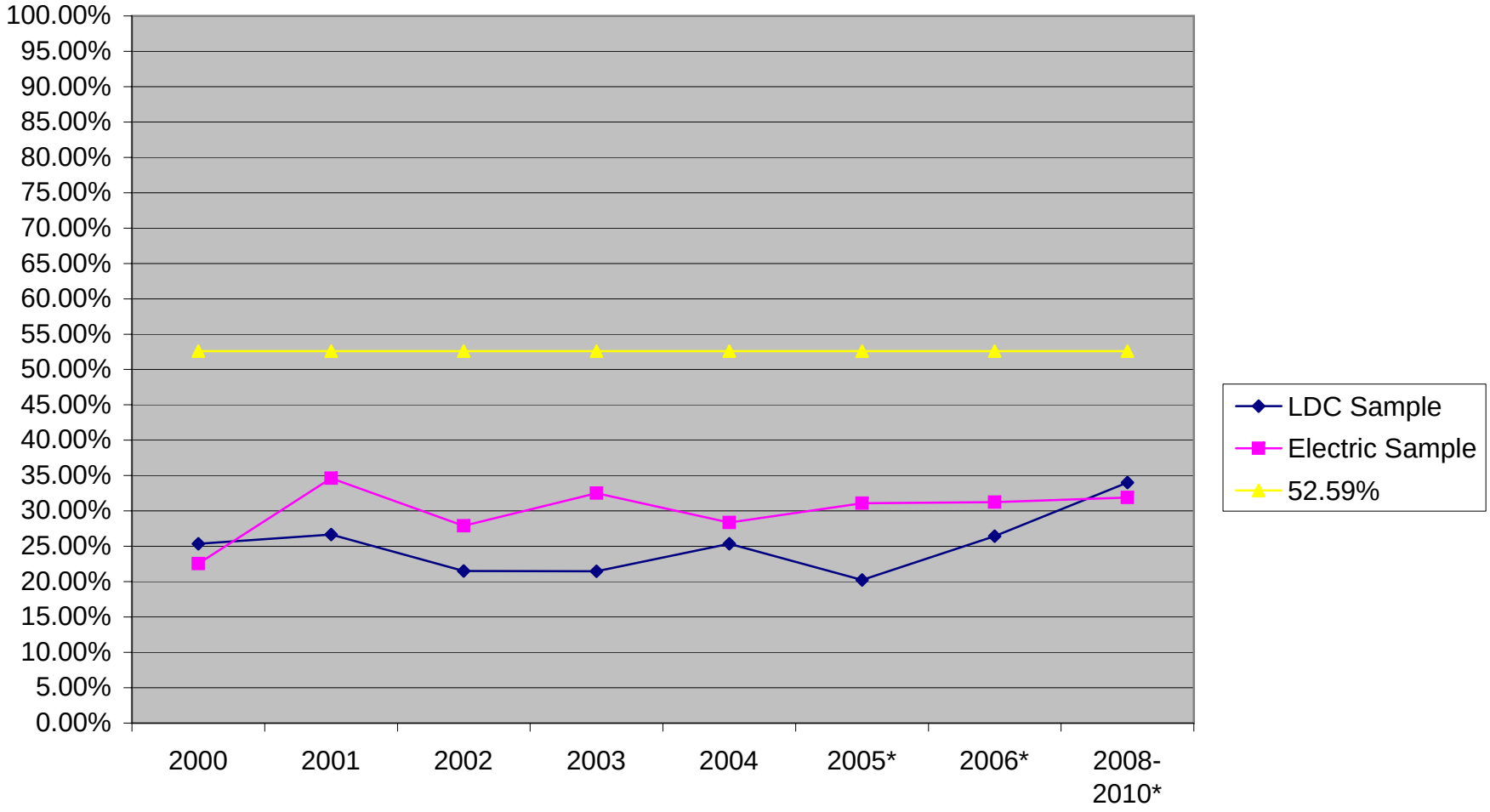
FOOTNOTES

A- Average
B- Order followed stipulation or settlement by the parties. Decision particulars not necssarily precedent-setting or specifically adopted by the regulatory body.
Bp- Order followed partial stipulation or settlement by the parties. Decision particulars not necssarily precedent-setting or specifically adopted by the regulatory body.
Di- Rate change applicable to electric distribution rates only.
E- Estimated
G- Return on capital
Gn- Return applicable to generation assets only.
Hy- Hypothetical capital structure utilized
I- Interim rates implemented prior to the issuance of final order, normally under bond and subject to refund.
R- Revised
TD- Rate change applicable to electric transmission and distribution rates only.
YE- Year-end
Z- Rate change implemented in multiple steps.
* Capital structure includes cost-free items or tax credit balances at the overall rate of return.

(1) Electric increase represents implementation of a Retail Access Surcharge for recovery of retail access credits provided to customers who select an alternative generation supplier. Gas increase represents a gas Merchant Function Charge designed to recover indirect gas costs.
(2) Indicated rate case parameters support a $49.8 million electric increase.
(3) Indicated rate case parameters support a $45.6 million electric increase.
(4) Indicated distribution rate increase to be effective 5/1/06.
(5) Represents the combined increase authorized the company's southern California and northern California rate jurisdictions.
(6) The stipulation requires the company to freeze rates for five years, and over this time period, to credit its pipeline replacement program a total of $25 million and senior citizen rates $7.5 million.
(7) Indicated rate increase does not include $19.5 million of revenue previously collected through the purchased gas adjustment clause.

ICC Staff Exhibit 16.0
Schedule 16.2

Retention Rates



* Value Line projection

Scenario I

Year (A)	Beginning Investment (B)	Return on Reinvested Earnings (C)	Earnings (D)	Retention Ratio (E)	Payout Ratio (F)	Annual Retained Earnings (G)	Year-end Dividend (H)	Earnings Growth (I)	Dividend Growth (J)	Assumed Discount Rate (K)	Implied Price at Beginning of the Year (L)
1	$ 100.00	12.55%	$ 12.55	31.10%	68.90%	$ 3.90	$ 8.65			12.55%	$ 145.33
2	$ 103.90	12.55%	$ 13.04	29.31%	70.69%	$ 3.82	$ 9.22	3.90%	6.60%		
3	$ 107.73	12.55%	$ 13.52	27.32%	72.68%	$ 3.69	$ 9.83	3.68%	6.60%		
4	$ 111.42	12.55%	$ 13.98	25.09%	74.91%	$ 3.51	$ 10.47	3.43%	6.60%		
5	$ 114.93	12.55%	$ 14.42	22.59%	77.41%	$ 3.26	$ 11.17	3.15%	6.60%		
6	$ 118.18	12.55%	$ 14.83	19.75%	80.25%	$ 2.93	$ 11.90	2.83%	6.60%		
7	$ 121.11	12.55%	$ 15.20	16.52%	83.48%	$ 2.51	$ 12.69	2.48%	6.60%		
8	$ 123.63	12.55%	$ 15.52	12.82%	87.18%	$ 1.99	$ 13.53	2.07%	6.60%		
9	$ 125.61	12.55%	$ 15.76	8.54%	91.46%	$ 1.35	$ 14.42	1.61%	6.60%		
10	$ 126.96	12.55%	$ 15.93	3.54%	96.46%	$ 0.56	$ 15.37	1.07%	6.60%		
11	$ 127.52	12.55%	$ 16.00	-2.38%	102.38%	$ (0.38)	$ 16.38	0.44%	6.60%		
12	$ 127.14	12.55%	$ 15.96	-9.46%	109.46%	$ (1.51)	$ 17.47	-0.30%	6.60%		
13	$ 125.63	12.55%	$ 15.77	-18.09%	118.09%	$ (2.85)	$ 18.62	-1.19%	6.60%		
14	$ 122.78	12.55%	$ 15.41	-28.80%	128.80%	$ (4.44)	$ 19.85	-2.27%	6.60%		
15	$ 118.35	12.55%	$ 14.85	-42.45%	142.45%	$ (6.31)	$ 21.16	-3.61%	6.60%		
16	$ 112.04	12.55%	$ 14.06	-60.40%	160.40%	$ (8.49)	$ 22.55	-5.33%	6.60%		
17	$ 103.55	12.55%	$ 13.00	-85.01%	185.01%	$ (11.05)	$ 24.04	-7.58%	6.60%		
18	$ 92.50	12.55%	$ 11.61	-120.78%	220.78%	$ (14.02)	$ 25.63	-10.67%	6.60%		
19	$ 78.48	12.55%	$ 9.85	-177.39%	277.39%	$ (17.47)	$ 27.32	-15.16%	6.60%		
20	$ 61.01	12.55%	$ 7.66	-280.38%	380.38%	$ (21.47)	$ 29.12	-22.26%	6.60%		
21	$ 39.54	12.55%	$ 4.96	-525.64%	625.64%	$ (26.08)	$ 31.05	-35.19%	6.60%		
22	$ 13.46	12.55%	$ 1.69	-1859.71%	1959.71%	$ (31.41)	$ 33.10	-65.97%	6.60%		
23	$ (17.95)	12.55%	$ (2.25)	1666.08%	-1566.08%	$ (37.53)	$ 35.28	-233.39%	6.60%		

Scenario II

Year (A)	Beginning Investment (B)	Return on Reinvested Earnings (C)	Earnings (D)	Retention Ratio (E)	Payout Ratio (F)	Annual Retained Earnings (G)	Year-end Dividend (H)	Earnings Growth (I)	Dividend Growth (J)	Implied Discount Rate (K)	Observed Price at Beginning of the Year (L)
1	$ 100.00	12.55%	$ 12.55	31.10%	68.90%	$ 3.90	$ 8.65			9.85%	$ 145.33
2	$ 103.90	12.55%	$ 13.04	31.10%	68.90%	$ 4.06	$ 8.98	3.90%	3.90%		
3	$ 107.96	12.55%	$ 13.55	31.10%	68.90%	$ 4.21	$ 9.34	3.90%	3.90%		

Scenario III

Year (A)	Beginning Investment (B)	Return on Reinvested Earnings (C)	Earnings (D)	Retention Ratio (E)	Payout Ratio (F)	Annual Retained Earnings (G)	Year-end Dividend (H)	Earnings Growth (I)	Dividend Growth (J)	Implied Discount Rate (K)	Observed Price at Beginning of the Year (L)
1	$ 100.00	12.55%	$ 12.55	31.10%	68.90%	$ 3.90	$ 8.65			10.66%	$ 145.33
2	$ 103.90	12.55%	$ 13.04	52.59%	47.41%	$ 6.86	$ 6.18	3.90%	-28.50%		$ 152.18
3	$ 110.76	12.55%	$ 13.90	52.59%	47.41%	$ 7.31	$ 6.59	6.60%	6.60%		
4	$ 118.07	12.55%	$ 14.82	52.59%	47.41%	$ 7.79	$ 7.03	6.60%	6.60%		

Notes:
Column (D) = Column (B) * Column (C)
Column (F) = 1 - Column (E)
Column (G) = Column (D) * Column (E)
Column (H) = Column (D) * Column (F)
Column (I) = current year's Column (D) / previous year's Column (D) - 1
Column (J) = current year's Column (H) / previous year's Column (H) - 1
Column (K) = Scenario I: assumed; Scenario II: P0 = D1/(k-g); and Scenario III: P0 = (D1+(D2/(k-g)))/(1+k)
Column (L) = implied price at beginning of year under Scenario I based on DCF model: P0 = (P1+D1) / (1+k)