

DR. ROGER A. MORIN

1 **Q. PLEASE STATE YOUR NAME, ADDRESS, AND OCCUPATION.**

2 A. My name is Dr. Roger A. Morin. My business address is Georgia State
3 University, Robinson College of Business, University Plaza, Atlanta, Georgia,
4 30303. I am Emeritus Professor of Finance at the College of Business, Georgia
5 State University and Professor of Finance for Regulated Industry at the Center for
6 the Study of Regulated Industry at Georgia State University. I am also a principal
7 in Utility Research International, an enterprise engaged in regulatory finance and
8 economics consulting to business and government.

9 **Q. DID YOU FILE DIRECT TESTIMONY IN THIS PROCEEDING ON**
10 **BEHALF OF CENTRAL HUDSON GAS AND ELECTRIC**
11 **CORPORATION?**

12 A. Yes, I did.

13 **Q. WHAT IS THE PURPOSE OF THIS REBUTTAL TESTIMONY?**

14 A. I will respond to Mr. Del Vecchio and Miss Capers ("Finance Panel") rate of
15 return recommendation on behalf of the New York State Department of Public
16 Service ("Staff").

17 **Q. PLEASE SUMMARIZE STAFF'S RATE OF RETURN**
18 **RECOMMENDATION IN THIS CASE.**

19 A. The rate of return on common equity capital ("ROE") recommended by Staff in
20 this case is only 9.45%.

21

1 **Q. PLEASE SUMMARIZE STAFF'S RATE OF RETURN**
2 **RECOMMENDATION.**

3 A. Staff recommends that a ROE allowance of only 9.45% be employed on the
4 common equity capital of Central Hudson Gas and Electric Corporation (“CH” or
5 the “Company”). In determining CH's cost of common equity capital, Staff
6 applies a two-stage Discounted Cash Flow (“DCF”) analysis to a group of thirty
7 electric utilities. For the first-stage growth component of the DCF analysis, Staff
8 relies on Value Line’s forecast of dividend growth estimates over the next few
9 years. For the more important second-stage growth component that produces the
10 majority of the value calculated by the DCF analysis, Staff uses the earnings
11 retention method, also known as the “sustainable growth” method, again using
12 Value Line estimates as input data.

13 Staff also applies a Capital Asset Pricing Model (“CAPM”) and an Empirical
14 CAPM (“ECAPM”) (also referred to as a “zero beta” CAPM) analysis to the same
15 group of companies, using an average of 10-year and 30-year Treasury bond
16 yields as proxies for the risk-free rate, and Value Line beta estimates. Staff’s
17 estimate of the market risk premium (“MRP”) component of the CAPM is based
18 on a single Merrill Lynch estimate. Applying a weight of two-thirds to the DCF
19 results and one-third to the CAPM-ECAPM average result, Staff concludes that
20 CH’s cost of common equity capital is 9.45% after a return decrement of 30 basis
21 points in order to account for CH’s superior credit quality as compared to the
22 Staff proxy group and a further downward risk adjustment factor of 10 basis
23 points in order to account for a revenue decoupling mechanism (RDM). No

1 adjustment for flotation costs is contained in Staff's ROE recommendation.

2 **Q. WHAT IS YOUR GENERAL REACTION TO STAFF'S COST OF**
3 **COMMON EQUITY RECOMMENDATION?**

4 A. My general reaction is that the testimony contains major infirmities. The single-
5 digit ROE recommendation of only 9.45% would be amongst the lowest in the
6 country for a major investor-owned gas or electric utility. In addition, even
7 assuming that Staff's methodology was valid to begin with, the results have
8 become outdated as a consequence of important changes in capital market
9 conditions since September of this year. Moreover, it rests heavily on the results
10 of a DCF analysis and on a particularly fragile rendition of the DCF approach.
11 The latter is based on the questionable results of the earnings retention growth
12 version of the DCF model. That method requires Staff to assume the investor's
13 expected ROE. But the investors' ROE is precisely what we are trying to
14 determine in this proceeding. It is therefore both illogical and circular to assume
15 an ROE in order to determine an ROE. Not only has Staff relied heavily on a
16 circular methodology but Staff also has put most of its eggs in the DCF basket,
17 which causes Staff to recommend a return that is below investors' required
18 returns.

19 **Q. WHAT ARE YOUR BASIC CONCLUSIONS REGARDING STAFF'S**
20 **COST OF EQUITY TESTIMONY?**

21 A. A proper application of cost of capital methodologies would provide results
22 substantially higher than those obtained by Staff. As I will explain, several of
23 Staff's errors alone result in Staff's understating CH's cost of common equity by

1 at least 150 basis points (1.5%). Correcting these errors would bring the Staff
2 recommended ROE to above 11.0%, which is close to my recommended ROE.

3 **Q. PLEASE SUMMARIZE YOUR COMMENTS ON STAFF'S TESTIMONY.**

4 A. I stress from the start that I agree with several of Staff's views and procedures. I
5 agree broadly with: (i) the use of several methodologies in estimating a fair return
6 on common equity, although I disagree with the weights accorded by Staff to each
7 method, (ii) the sample of utility companies in the DCF and CAPM analyses; (iii)
8 the magnitude of the beta estimates in the CAPM analysis, and (iv) the magnitude
9 of the MRP component in the CAPM analysis.

10 I have fourteen specific disagreements with Staff's testimony:

11 **1. Current Financial Crisis.** Staff's use of the 6 month period ending
12 September 2008 to calculate average stock prices in its DCF analysis totally
13 ignores the impact of the current financial crisis that began in early October on
14 required returns. Capital costs have exploded upward in the past few months.
15 Using current stock prices that reflect the impact of the ongoing financial crisis on
16 capital costs and its devastating impact on utility stock prices raises Staff's DCF
17 estimate by 75 basis points from this factor alone.

18 The financial risks and, therefore, the cost of capital, have increased substantially
19 for all firms, including utilities. Given the drastic changes in financial conditions,
20 a complete reevaluation of the fifteen-year old Generic Financing Case (GFC)
21 methodology approach on which the Staff relies is urgently required in favor of an
22 approach more suited for current capital market conditions. Staff's business as
23 usual methodology is simply out of touch with the vast changes that have taken,

1 and continue to take, place in capital markets.

2 **2. Unreliable Recommendation.** Staff's ROE recommendation is unreasonably
3 low, and is not a reliable estimate of CH's cost of equity capital given the heavy
4 reliance on one particular and fragile cost of equity methodology, which is not
5 only circular but also known to understate investor returns, namely, the DCF
6 method.

7 **3. Allowed returns.** Staff's recommended ROE is outside the zone of currently
8 allowed ROEs for its sample companies and would be one of the lowest allowed
9 ROEs in the country for a major gas or electric utility.

10 **4. The DCF Model Understates the Cost of Equity.** It is well-known that
11 application of the DCF model to utility stocks understates the investor's expected
12 return when the Market-to-Book ("M/B") ratio exceeds unity. This is particularly
13 relevant in the current capital market environment where utility stocks, including
14 Staff's sample companies, are trading at M/B ratios well above unity.

15 **5. DCF Functional Form.** Staff relies on the annual form rather than on the
16 quarterly version of the DCF model, understating the cost of equity by 20 basis
17 points.

18 **6. The use of an average six-month stock price in the DCF model.** Staff's
19 application of the DCF model violates market efficiency principles and
20 mismatches stock price and expected growth by its use of stale 6 month average
21 stock prices instead of current prices for its proxy group of companies. Staff's
22 application of the DCF model violates market efficiency principles and
23 mismatches stock price and expected growth. Moreover, 6-month old stock

1 prices do not capture the impact of the recent financial crisis on capital costs.

2 **7. DCF Earnings Retention Growth.** Staff's principal, and in fact only,
3 technique for estimating the second-stage growth component of the DCF model is
4 the earnings retention growth technique. There is a logical inconsistency in the
5 retention growth technique because Staff is forced to assume the answer to
6 implement the method. From Staff's own evidence, investors expect substantially
7 higher returns for utilities than what Staff recommends.

8 **8. DCF Growth Rates: Analysts' Forecasts.** Investors are expecting
9 substantially higher growth rates than Staff's growth rates for the sample
10 companies. Using analysts' consensus growth forecasts instead of Staff's would
11 increase the DCF estimate of the cost of common equity by 70 basis points
12 (0.90%), that is, from 9.66% to 10.36%.

13 **9. CAPM Risk-Free Rate.** Staff's risk-free rate proxy relies on the average
14 yield on 10-year and 30-year Treasury notes instead of just the yield on 30-year
15 Treasury bonds. Using the appropriate risk-free rate, Staff's CAPM estimates
16 must be raised by 32 basis points for this correction alone.

17 **10. Flotation Costs.** Staff's DCF estimates of equity costs are downward-biased
18 by approximately 30 basis points to the extent that not all the flotation costs
19 associated with past equity issues have been expensed or recovered in the past.

20 **11. Capital Structure Recommendation.** Staff's capital structure
21 recommendation is at odds with the capital structures of its comparable
22 companies, the electric and gas utility industry, and electric and gas utility
23 regulated capital structures.



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Source: http://chart.finance.yahoo.com/c/6m/_/_dju

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I have replicated Staff's DCF analysis using current stock prices instead of six-month old stock prices on Exhibit ___ (RAM-1R). Using current stock prices instead of six-month old prices in Staff's DCF analysis, the average DCF estimate of Staff's proxy group of companies increases from 9.54% (Staff Exhibit ___(RRP)-7) to 10.29%, an increase of 75 basis points.

8

9 **Q.**

WHAT IS THE IMPACT OF USING MORE CURRENT STOCK PRICES ON STAFF'S FINAL ROE RECOMMENDATION?

10

11 **A.**

Using an updated DCF estimate of 10.29% instead of 9.54%, Staff's CAPM result of 10.16%, and Staff's 2/3 and 1/3 weighting of the results, Staff's recommended cost of equity becomes 10.25% ($10.29\% \times 0.6666 + 10.16\% \times 0.3333 = 10.25\%$) without Staff's credit quality and RDM adjustments.

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1 **2. UNRELIABLE RECOMMENDATION**

2 **Q. STAFF RELIES HEAVILY ON ONE METHODOLOGY, NAMELY THE**
3 **DCF METHOD. DOES THIS AFFECT THE RELIABILITY OF STAFF'S**
4 **RESULTS?**

5 A. Yes, very much so. The 9.45% cost of equity recommended by Staff is
6 unreasonably low and outside reasonable limits of probability, and is not a
7 reliable estimate of CH's cost of equity capital, especially under current capital
8 market conditions.

9 There are four broad generic methodologies available to measure the cost of
10 equity: DCF, Risk Premium, CAPM, which are market-oriented, and Comparable
11 Earnings, which is accounting-oriented. Each generic market-based methodology
12 in turn contains several variants. Staff has chosen to rely heavily on the DCF
13 method and to a much smaller extent on the CAPM, giving two-thirds weight to
14 the DCF results, only one-third to the CAPM and ECAPM results, and no weight
15 at all to the Risk Premium or Comparable Earnings methodologies.

16 As I discussed in my Direct Testimony, when measuring equity costs, which
17 essentially attempt to measure investor expectations, no one single methodology
18 is foolproof. Each methodology requires the exercise of considerable judgment
19 about the reasonableness of the assumptions underlying the methodology and
20 about the reasonableness of the proxies used to validate the theory. The failure of
21 the traditional infinite growth DCF model to account for changes in relative
22 market valuation, and the practical difficulties of specifying the expected growth
23 component, discussed in my original testimony, are vivid examples of the

1 potential shortcomings of the DCF model. It follows that several methodologies
2 should be employed in arriving at a judgment on the cost of equity and that these
3 methodologies should be weighted equally.

4 There is no single model that conclusively determines or estimates the expected
5 return for an individual firm. Each methodology possesses its own way of
6 examining investor behavior, its own premises, and its own set of simplifications
7 of reality. Each method proceeds from different fundamental premises that
8 cannot be validated empirically. Investors do not subscribe to any one method,
9 nor does the stock price reflect the application of any one single method by the
10 price-setting investor.

11 Absent any hard evidence as to which method outdoes the other, all relevant
12 market-based evidence should be used and weighted equally, in order to minimize
13 judgmental error, measurement error, and conceptual infirmities. There can be no
14 expectation that a single DCF result is necessarily the ideal predictor of the stock
15 price and of the cost of equity reflected in that price, just as there can be no
16 expectation that a single CAPM or Risk Premium result constitutes the perfect
17 explanation of that stock price. This lack of definitiveness in the estimation of
18 equity return requirements begs for the Commission's exercise of judgment in its
19 determination thereof.

20 **Q. DOES THE FINANCIAL LITERATURE SUPPORT THE USE OF**
21 **SEVERAL METHODOLOGIES?**

22 A. Yes, it does. As I discussed in my direct testimony, the financial literature strongly
23 supports the use of multiple methods. While it is certainly appropriate to use the

1 DCF methodology to estimate the cost of equity, there is no proof that the DCF
2 produces a more accurate estimate of the cost of equity than other methodologies.
3 Heavy reliance on the DCF model ignores the capital market evidence and financial
4 theory formalized in the CAPM and other risk premium methods. The DCF model
5 is one of many tools to be employed in conjunction with other methods to estimate
6 the cost of equity. It is not a superior methodology that supplants other financial
7 theory and market evidence.

8 **Q. DOES THE DCF MODEL NEED TO BE APPLIED WITH EXTREME**
9 **CAUTION?**

10 A. Yes, it does. Caution has to be used in applying the DCF model to utility stocks for
11 four reasons. The first reason is that the stock price used as input in the dividend
12 yield component may be unduly influenced by structural changes and changing
13 investor expectations in the utility industry. Stock prices can also be influenced by
14 mergers and acquisitions possibilities, by speculation concerning asset restructurings
15 and deregulation of certain assets, and by corporate takeover rumors.

16 The second reason is that the traditional DCF model is based on a number of
17 assumptions, some of which may be unrealistic in a given capital market
18 environment. For example, the standard infinite growth DCF model assumes a
19 constant market valuation multiple, that is, a constant price/earnings (“P/E”) ratio.
20 In other words, the model assumes that investors expect the ratio of market price to
21 dividends (or earnings) in any given year to be the same as the current
22 price/dividend (or earnings) ratio. This must be true if the infinite growth
23 assumption is made. This assumption is somewhat unrealistic given the surges in

1 P/E ratios experienced by utility stocks in the last decade.

2 Several fundamental and structural changes have transformed the utility industry
3 from the times when the standard DCF model and its assumptions were developed
4 by Professor Gordon. Increased competition triggered by national policy, such as
5 FERC Order 888, re-prescription of capital recovery rates, changes in customer
6 attitudes regarding utility services, the evolution of alternative energy and
7 information sources, deregulation, and mergers-acquisitions have all influenced
8 stock prices in ways vastly different from the early assumptions of the DCF model
9 developed in the early 1970s. These changes suggest that some of the raw
10 assumptions underlying the standard DCF model are questionable, and that the DCF
11 model should be complemented by several alternate methodologies to estimate the
12 cost of common equity.

13 Contrary to the standard DCF assumption of a constant P/E ratio, stock prices may
14 not necessarily be expected to grow at the same rate as earnings and dividends by
15 investors. This is especially true in the short run. Investors may very well assume
16 that the P/E ratio will in fact continue to increase in the short run, fueling the
17 expected rate of return. The converse is also true. P/E ratios have proved volatile
18 and unstable in recent years. The essential point is that the constancy of the P/E
19 ratio required in the standard DCF model may not always be a valid assumption. To
20 the extent that increases or decreases in relative market valuation are anticipated by
21 investors, especially myopic investors with short-term investment horizons, the
22 standard DCF model will understate or overstate the cost of equity.

23

1 In summary, caution and judgment are required in interpreting the results of the DCF
2 model. There is a clear need to go beyond the DCF model, accord it the weight it
3 deserves, and to examine the results produced by several alternate methodologies as
4 I did in my direct testimony.

5 **Q. IS THERE ANY EVIDENCE THAT STAFF'S DCF RESULTS ARE**
6 **UNRELIABLE?**

7 A. Yes, there is. I have examined Staff's DCF results on Exhibit __ (RRP-7). The
8 DCF results shown in the last column are scattered all over, ranging from a low of
9 5.2% to a high of 12.4%. Several of the estimates for these companies are barely
10 above the cost of debt which has exploded upward in the current financial crisis.
11 To wit, the latest edition of Value Line reports a yield of 6.8% and 7.6% for
12 utility bonds rated single A and Baa, respectively. The huge variability in the
13 results demonstrates the lack of reliability of the DCF approach and the need to
14 employ, and rely more heavily upon, a variety of methodologies when estimating
15 the cost of capital. This is especially relevant in the current unsettled financial
16 environment.

17 **3. ALLOWED RETURNS**

18 **Q. IS STAFF'S RATE OF RETURN RECOMMENDATION COMPATIBLE**
19 **WITH CURRENTLY ALLOWED RETURNS IN THE UTILITY**
20 **INDUSTRY?**

21 A. No, not at all. Allowed returns, while certainly not a precise indication of a
22 company's cost of equity capital, are nevertheless important determinants of
23 investor growth perceptions and investor expected returns. They also serve to

1 provide some perspective on the validity and reasonableness of Staff's
 2 recommendation.

3 I have examined the ROEs currently allowed for the 30 electric utilities in Staff's
 4 comparable group as reported in the AUS Utility Reports survey for December
 5 2008. The currently authorized ROEs for the underlying utilities in Staff's proxy
 6 group, shown in Table 1 below, average 10.93%.

7 Table 1 Authorized ROEs
 8 Staff's Comparable Group
 9

	Company Name	Allowed ROE
1	ALLETE	11.60%
2	Alliant Energy	11.02%
3	Ameren Corp.	10.53%
4	Amer. Elec. Power	10.81%
5	Avista Corp	10.25%
6	Cleco Corp.	11.25%
7	Consol. Edison	9.79%
8	DPL Inc.	11.00%
9	DTE Energy	11.00%
10	Duke Energy	10.85%
11	Edison Int'l	11.60%
12	Empire Dist. Elec.	10.80%
13	Entergy Corp.	10.83%
14	First Energy	9.75%
15	FPL Group	11.75%
16	Hawaiian Elec.	10.82%
17	IDACORP Inc.	
18	MGE Energy	10.80%
19	Northeast Utilities	9.72%
20	NSTAR	12.50%
21	PG&E Corp.	11.35%
22	Pinnacle West Capital	10.75%
23	Portland General	10.80%
24	Progress Energy	12.42%
25	Southern Co.	11.93%
26	TECO Energy	11.25%

27	UIL Holdings	9.75%
28	Vectren Corp.	10.43%
29	Wisconsin Energy	10.75%
30	Xcel Energy Inc.	10.74%

AVERAGE 10.93%

Source: AUS Utility Reports 12/2008

The average ROE currently allowed for the overall combination gas & electric industry is 10.7% and 10.9% for the overall electric utility industry, well above Staff's anemic recommendation of 9.45%.

In short, Staff's ROE recommendation is outside the mainstream of the allowed rates of return that were current during the period in which Staff performed its analysis, lies outside the zone of recently authorized ROEs for electric utilities and for its own sample of companies, and would constitute one of the lowest ROE allowances in the country for a major utility. The Commission is not bound by decisions of other regulators regarding allowed ROE, but one cannot overlook the glaring difference between Staff's recommendation and the returns currently allowed for the very same firms that Staff deems comparable in risk.

4. DCF MODEL UNDERSTATES THE COST OF EQUITY

Q. DO STAFF'S DCF RESULTS UNDERSTATE THE COST OF EQUITY?

A. Yes, they do, and so do my own DCF results for that matter. Application of the DCF model produces estimates of the cost of common equity that are consistent with investors' expected return only when stock price and book value are reasonably similar, that is, when the M/B ratio is close to unity. The simple numerical illustration shown in my direct testimony demonstrated that when the DCF cost rate is applied to a book value rate base that is well below the market

1 price, the DCF cost rate understates the investor's required return.

2 This is particularly relevant in the current capital market environment where
3 utility stocks are trading at M/B ratios well above unity and have been for two
4 decades. The converse is also true, that is, the DCF model overstates the
5 investor's return when the stock's M/B ratio is less than unity. The reason for the
6 distortion is that the DCF market return is applied to a book value rate base by the
7 regulator, that is, a utility's earnings are limited to earnings on a book value rate
8 base.

9 Therefore, the DCF cost rate understates the investor's required return when stock
10 prices are well above book value, as is the case presently, and Staff's DCF results
11 understate CH's cost of common equity capital.

12 **Q. DO REGULATORS SHARE THESE RESERVATIONS ON THE**
13 **RELIABILITY OF THE DCF MODEL?**

14 A. Yes, I believe they do. As I indicated in my direct testimony, while a vast
15 majority of regulatory commissions do not rely solely on the DCF model results
16 in setting the allowed ROE, some regulatory commissions have explicitly
17 recognized the need to avoid excessive reliance upon the DCF model and have
18 acknowledged the need to adjust the DCF result when M/B ratios exceed one¹.

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¹ See the Indiana Utility Regulatory Commission decision in Indiana Mich. Power Co. (IURC 8/24/90), Cause No. 38728, 116 PUR4th 1, 17-18. See also the Iowa Utilities Board decision in U.S. West Communications, Inc., Docket No., RPR-93-9, 152 PUR4th, 459. See also the Hawaii Public Utilities Commission decision in Hawaiian Electric Company, Inc., Docket No. 6998, PUR4th, 134.

1 **5. DCF FUNCTIONAL FORM**

2 **Q. WHAT IS THE APPROPRIATE FORM OF THE DCF MODEL?**

3 A. The annual DCF model used by Staff ignores the time value of quarterly dividend
4 payments and assumes that dividends are paid once a year at the end of the year.
5 Since investors are aware of the quarterly timing of dividend payments, this
6 knowledge is reflected in stock prices. As I show in Chapter 11 of my book, *The*
7 *New Regulatory Finance*, the use of the annual version of the DCF model
8 understates the cost of equity by approximately 20 basis points, depending on the
9 magnitude of the dividend yield component. Staff is totally silent on the dividend
10 timing issue.

11 By analogy, a bank rate on deposits that does not take into consideration the
12 timing of the interest payments understates the true yield if you receive the
13 interest payments more than once a year. The actual yield will exceed the stated
14 nominal rate. To illustrate, if an investor has a choice between investing \$1,000
15 in a bank account which promises a return of 10% compounded annually and
16 another bank account which promises a return of 10% but compounded quarterly,
17 he will clearly select the latter. Due to the quarterly compounding of interest, the
18 investor earns an effective return of 10.38% on the latter bank account versus
19 10% on the former. The same is true for the return on common stocks. Staff has
20 thus understated investor return by 20 basis points in its DCF analysis from this
21 source alone.

1 **6. DCF STOCK PRICE**

2 **Q. CAN YOU COMMENT ON STAFF'S STOCK PRICE IN ITS DCF**
3 **MODEL?**

4 A. Yes. Staff uses the average stock price over the six months period ending
5 September 30, 2008. I disagree with the use of such a stale stock price reaching
6 as far back as April 2008 for two reasons. First, as discussed earlier, the world
7 has changed drastically and stock prices have fallen precipitously since the
8 financial crisis commenced in September, and a six-month average stock price is
9 certainly not representative of current capital market conditions. In short, Staff's
10 stock price is very stale and ignores current market conditions.

11 Second, the proper stock price to employ is the current price of the security at the
12 time of estimating the cost of equity, rather than some historical average stock
13 price reaching back six months. The reason is that the analyst is attempting to
14 determine a utility's cost of equity in the future, and since current stock prices
15 provide a better indication of expected future prices than any other price
16 according to the basic tenets of the Efficient Market Hypothesis, the most relevant
17 stock price is the most recent one. The Efficient Market Hypothesis, which is
18 widely accepted, states that capital markets, at least as a practical matter,
19 incorporate into security prices relevant publicly available information, such that
20 current security prices reflect the most recent information and thus are the best
21 representation of investor expectations. Use of any other price violates market
22 efficiency principles.

23

1 Thus, in measuring the cost of equity as the sum of dividend yield and growth, the
2 period used in measuring the dividend yield component must be consistent with
3 the estimate of growth with which it is paired. Since the current stock price is
4 caused by the growth foreseen by investors at the present time and not at any
5 other time, it is clear that the use of spot prices is preferable. Staff has essentially
6 mismatched a stale average stock price reaching as far back as May 2008 with a
7 current estimate of expected growth. This not only violates market efficiency
8 principles, but also constitutes a mismatch in the application of the DCF model.
9 A stock price dating back six months reflects stale information and is certainly not
10 representative of current market conditions in the stock market.

11 **7. EARNINGS RETENTION GROWTH METHOD**

12 **Q. WHAT SPECIFIC DCF METHODOLOGY DID STAFF EMPLOY TO**
13 **DETERMINE THE COST OF EQUITY?**

14 A. Staff applied a two-stage DCF analysis to a sample of 30 electric utilities, using
15 the earnings retention growth method as a proxy for the expected long-term
16 growth component in the second stage. An average retention growth rate of 5.3%
17 [column W of Exhibit _ (RRP-7)] produced a median DCF cost of equity estimate
18 of 9.66% reported on the last column of the same exhibit.

19 **Q. PLEASE COMMENT ON STAFF'S GROWTH ESTIMATE IN THE DCF**
20 **MODEL.**

21 A. Staff relies exclusively on the earnings retention growth method in the crucial
22 second stage of the DCF analysis, where the growth rate is based on the equation
23 $g = b(\text{ROE})$, where b is the percentage of earnings retained and ROE is the

1 expected ROE. The impact of external stock financing on growth is also
2 accounted for by adding an external growth term ($g = sv$).

3 I seriously disagree with the earnings retention growth technique for four reasons:

4 1) the method is logically circular; 2) it is inconsistent with the empirical evidence
5 as demonstrated in academic research; 3) there is a potential lack of
6 representativeness of Value Line's forecasts as proxies for the market consensus;
7 and 4) the technique embodies a technical error.

8 **Q. ARE THE GROWTH RATES USED BY STAFF CONSISTENT WITH ITS**
9 **RATE OF RETURN RECOMMENDATION?**

10 A. No, they are not. Staff's retention growth methodology contains a puzzling
11 logical contradiction. The contradiction arises because the method requires an
12 explicit assumption on the ROE expected from the retained earnings that produce
13 future growth. Staff bases its ROE estimate on Value Line's forecast of ROE for
14 the 2012 period (Column P on Exhibit __ (RRP-7) page 2). But the ROEs used
15 by Staff in calculating the retention growth rate do not match Staff's ROE
16 recommendation. The table below replicates the ROE forecasts used by Staff in
17 deriving the retention growth rates.

18 **Table 2 Staff's Forecast ROE**
19

1	ALLETE	10.30
2	Alliant Energy Corp.	10.61
3	Ameren Corp.	9.64
4	American Electric Power	12.43
5	Avista Corp.	8.39
6	Cleco Corp	11.77
7	Consolidated Edison	8.87
8	DPL Inc.	19.83
9	DTE Energy Co.	8.98

10	Duke Energy Corp.	7.99
11	Edison International	11.86
12	Empire District Electric	10.68
13	Entergy Corp.	15.08
14	FirstEnergy Corp.	15.92
15	FPL Group, Inc.	13.40
16	Hawaiian Electric	11.96
17	IDACORP, Inc.	7.85
18	MGE Energy, Inc.	13.11
19	Northeast Utilities	8.97
20	NSTAR	14.86
21	PG&E Corp.	12.33
22	Pinnacle West Capital	8.14
23	Portland General Electric	8.83
24	Progress Energy	9.62
25	Southern Co.	14.33
26	UIL Holdings Corp.	14.46
27	TECO Energy, Inc.	10.36
28	Vectren Corp.	11.08
29	Wisconsin Energy	12.19
30	Xcel Energy, Inc.	11.08
	AVERAGE	11.50%
	MEDIAN	11.08%

Source: Staff Exhibit _(RRP-7 page 2) Column P

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The median expected ROE of 11.1% used in Staff's retention growth computation exceeds Staff's recommended ROE of 9.45%. Staff's analysis thus assumes that the earned returns (ROE) of the sample companies exceed what it has determined to be their cost of equity forever. That is, Staff is assuming that these companies will earn an ROE higher than that granted by their regulators and reflected in their rates. While this scenario, which is implicit in Staff's retention growth method, may be imaginable for an unregulated company, it is an implausible scenario to be assumed for a regulated company whose rates are continually re-set by its regulator at a level designed to permit the company to earn a return equal to its

1 cost of capital. This logical flaw compromises the integrity of Staff's analysis and
2 should be a sufficient basis for rejecting the results Staff produced by this method,
3 which constitute the cornerstone of its ROE recommendation. In essence, by
4 using an ROE that differs from its final recommended cost of equity, Staff
5 requires the Commission to make two inconsistent findings regarding ROE. I am
6 perplexed as to why Staff assumes that its group of comparable electric and
7 combination utilities is expected to earn 11.1% forever, while at the same time it
8 recommends an ROE of only 9.45% for CH. The only way that these utilities can
9 earn an ROE of 11.1% is if rates are set so that they will in fact earn 11.1%. The
10 only logical conclusion to be drawn from the data is that the group's cost of equity
11 is 11.1%, since these are the returns implied in Staff's retention growth analysis.

12 **Q. IS THE RETENTION GROWTH RATE TECHNIQUE CONSISTENT**
13 **WITH THE EMPIRICAL EVIDENCE PRESENTED IN PUBLISHED**
14 **ACADEMIC FINANCIAL RESEARCH?**

15 A. No, it is not. The second difficulty with the retention growth rate approach is that
16 the empirical finance literature demonstrates that this particular method of
17 determining growth is a very poor explanatory variable of market value, and is not
18 as significantly correlated to measures of value, such as stock price and
19 price/earnings ratios. This literature is summarized in my text The New
20 Regulatory Finance, Chapter 9.

21 **Q. ARE VALUE LINE'S ROE AND RETENTION RATIO ESTIMATES**
22 **REPRESENTATIVE OF THE MARKET CONSENSUS?**

23 A. No, not necessarily. The third difficulty with Staff's retention growth rates is that

1 exclusive reliance on a Value Line forecast of ROEs and retention ratios runs the
2 risk that Value Line forecasts are not representative of investors' consensus
3 forecasts. As discussed below, averages of equity analysts' growth forecasts are
4 reliable estimates of the investors' consensus expectations likely to be reflected in
5 stock prices.

6 **Q. PLEASE DISCUSS THE FOURTH PROBLEM WITH STAFF'S**
7 **RETENTION GROWTH ESTIMATES.**

8 A. The fourth difficulty with Staff's retention growth approach is that the forecasts of
9 the expected return on equity published by Value Line are based on end-of-period
10 book equity rather than on average book equity. The following formula,
11 discussed and derived in Chapter 9 of my latest book, The New Regulatory
12 Finance, adjusts the reported end-of-year values so that they are based on average
13 common equity, which is the common regulatory practice:

14
$$r_a = r_t \frac{2 B_t}{B_t + B_{t-1}}$$

15
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18 Where: r_a = return on average equity
19 r_t = return on year-end equity as reported
20 B_t = reported year-end book equity of the current year
21 B_{t-1} = reported year-end book equity of the previous year
22

23 The result of this error is that Staff's DCF estimates are understated by some 10-
24 20 basis points, depending on the magnitude of the book value growth rate.
25
26

1 **8. DCF GROWTH RATES: ANALYSTS' FORECASTS**

2 **Q. WHAT DOES THE PUBLISHED ACADEMIC LITERATURE SAY ON**
3 **THE SUBJECT OF GROWTH RATES IN THE DCF MODEL?**

4 A. Published studies in the academic literature demonstrate that growth forecasts
5 made by analysts are reasonable indicators of investor expectations, and that
6 investors rely on the analysts' forecasts. This vast literature is summarized in my
7 text The New Regulatory Finance, Chapter 9.

8 **Q DO YOU SEE ANY DANGERS IN RELYING ON VALUE LINE AS AN**
9 **EXCLUSIVE SOURCE OF FORECASTS IN APPLYING THE DCF**
10 **MODEL?**

11 A. Yes, I do. Staff relies exclusively on one single analyst, namely, Value Line
12 forecasts, for its major inputs into the DCF analysis, including short-term
13 dividend forecasts, expected returns, new stock issues, and expected retention
14 ratios. Staff's exclusive reliance on Value Line growth forecasts runs the real risk
15 that such forecasts are not representative of investors' consensus forecasts. One
16 would expect that averages of a myriad analysts' growth forecasts such as those
17 contained in First Call, Thomson, Multex, and/or Zacks, rather than one particular
18 analyst's in-house forecast, are more reliable estimates of the investors' consensus
19 expectations likely to be impounded in stock prices.

20 **Q. ARE INVESTORS EXPECTING GROWTH RATES WITHIN THE**
21 **RANGE USED BY STAFF?**

22 A. No. The best evidence shows that investors are expecting growth rates higher
23 than those used by Staff. For its group of 30 electric utilities, Staff used [see page

1 2 of Exhibit _ (RRP-7)] median growth rates of 5.1% and 5.3% for the first and
 2 second stage of the DCF analysis, respectively. Table 3 below reports the long-
 3 term growth forecast from Value Line and the consensus long-term growth
 4 forecast reported by Zacks Investment Research. The average and median long-
 5 term growth forecast for the group range from 6.0% to 7.0% (midpoint 6.5%).
 6 These growth estimates are 130 basis points (1.3%) above Staff's long-term
 7 growth estimate of 5.1% - 5.3% (midpoint 5.2%).

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Table 3 Staff's Comparable Companies
 Analysts' Growth Forecasts

Company	Value Line Projected Growth	Zacks Analysts Growth
1 ALLETE	2.5	5.0
2 Alliant Energy	6.0	6.1
3 Amer. Elec. Power	7.5	4.8
4 Ameren Corp.	2.5	5.0
5 Avista Corp.	9.0	5.0
6 Cleco Corp.	10.5	13.0
7 Consol. Edison	1.0	2.8
8 DPL Inc.	11.0	10.3
9 DTE Energy	5.0	6.5
10 Duke Energy		4.6
11 Edison Int'l	5.0	7.0
12 Empire Dist. Elec.	10.0	
13 Entergy Corp.	10.0	10.0
14 FPL Group	9.5	9.8
15 FirstEnergy Corp.	11.0	11.0
16 Hawaiian Elec.	5.0	4.5
17 IDACORP Inc.	2.0	6.0
18 MGE Energy	5.5	
19 NSTAR	7.5	6.8
20 Northeast Utilities	11.5	10.0
21 PG&E Corp.	5.0	7.4
22 Pinnacle West Capital	2.0	9.0
23 Portland General	7.0	6.5

24 Progress Energy	5.0	4.9
25 Southern Co.	5.5	5.2
26 TECO Energy	7.5	8.3
27 UIL Holdings	4.0	6.0
28 Vectren Corp.	3.0	6.4
29 Wisconsin Energy	8.0	9.0
30 Xcel Energy Inc.	7.5	6.0
Average w/o ITC	6.4%	7.0%
Median w/o ITC	6.0%	6.5%

Source: Value Line Investment Analyzer 12/08
Zacks Investment Research 12/08

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5 **Q. HOW WOULD STAFF'S DCF RESULT CHANGE USING ANALYSTS'**
6 **GROWTH FORECASTS IN ITS SECOND STAGE DCF ANALYSIS**
7 **INSTEAD OF THE EARNINGS RETENTION GROWTH METHOD ?**

8 A. The Value Line growth forecast and the analysts consensus growth forecast range
9 from 6.0% to 7.0% versus Staff's 5.1% - 5.3%. Even if we take the lowest
10 reported growth rate of 6.0% from Table 3 versus Staff's highest reported growth
11 rate of 5.3% for the second stage of its DCF analysis, a difference of 70 basis
12 points (0.70%), the DCF estimate of the cost of common equity increases from
13 9.66% to 10.36% from that correction alone.

14 **Q. DOES MERRILL LYNCH PROVIDE LONG-TERM GROWTH RATE**
15 **PROJECTIONS?**

16 A. Yes, it does. Staff relies on a Merrill Lynch publication shown as Staff Exhibit__
17 (RRP-8) for a key input into its CAPM analysis, namely, the market risk premium
18 (MRP) estimate. However, Staff chose not to rely on the same Merrill Lynch
19 publication for the inputs into its DCF estimates for electric utilities. On page 46

1 of the aforementioned publication, a long-term growth projection of 7.8% and
2 7.7% is reported for gas and electric utilities, respectively. Once more, this
3 growth rate far exceeds Staff's 5.1% - 5.3% growth estimate for the second stage
4 of the DCF analysis.

5 **9. CAPM: RISK-FREE RATE**

6 **Q. WHAT INPUTS DOES STAFF USE IN ITS CAPM ANALYSIS?**

7 A. Three inputs are required in order to implement the CAPM: the risk-free rate, the
8 beta risk measure, and the MRP. As shown on Exhibit __ (RRP-7) page 1, for the
9 risk-free rate, Staff uses 4.19%. For beta, Staff uses 0.80, based on Value Line
10 beta estimates for its sample of electric companies. For the MRP, Staff uses
11 7.2%.

12 **Q. DO YOU AGREE WITH STAFF'S BETA ESTIMATES?**

13 A. Yes, I do.

14 **Q. DO YOU AGREE WITH STAFF'S MRP ESTIMATE?**

15 A. Yes, I agree with the magnitude (7.2%), although not the derivation, of Staff's
16 MRP which is coincidentally almost identical to my own estimate of 7.4%.
17 Given that our MRP estimates are virtually identical, I shall limit my rebuttal of
18 Staff's criticisms of my MRP estimate to a few comments.

19 **Q. DO YOU AGREE WITH STAFF'S RISK-FREE RATE ESTIMATE?**

20 A. No, I do not. As a proxy for the risk-free rate, Staff uses the average yield on 10-
21 year and 30-year treasury bonds for the six month period April 2008 – September
22 2008 which is 4.19%. I disagree. Only the yields on 30-year bonds are relevant
23 proxies in the CAPM.

1 **Q. WHAT IS THE APPROPRIATE PROXY FOR THE RISK-FREE RATE IN**
2 **A CAPM ANALYSIS?**

3 A. The appropriate proxy for the risk-free rate in the CAPM is the return on the
4 longest term Treasury bond possible. This is because common stocks are very
5 long-term instruments more akin to very long-term bonds rather than to short-
6 term or intermediate-term Treasury notes, for example, 10-year Treasury notes.
7 Since common stock is a very long-term investment because the cash flows to
8 investors in the form of dividends last indefinitely, the yield on the longest-term
9 possible government bonds, (i.e., yield on 30-year Treasury bonds) is the best
10 measure of the risk-free rate for use in the CAPM. Moreover, utility asset
11 investments generally have very long-term useful lives and should
12 correspondingly be matched with very long-term maturity financing instruments.

13 Another reason for using the longest maturity Treasury bond possible is that
14 common equity has an infinite life span, and the inflation expectations embodied
15 in its market-required rate of return will therefore be equal to the inflation rate
16 anticipated to prevail over the very long-term. The same expectation should be
17 embodied in the risk-free rate used in applying the CAPM model. It stands to
18 reason that the yields on 30-year Treasury bonds will more closely incorporate
19 within their yields the inflation expectations that influence the prices of common
20 stocks than do short-term or intermediate-term U.S. Treasury notes.

21 In short, 30-year Treasury bonds have the longest term to maturity and Staff
22 should have relied solely on the yield on such securities as proxies for the risk-

1 free rate in applying the CAPM.

2 **Q. WHAT IS THE AVERAGE YIELD ON 30-YEAR TREASURY BONDS**
3 **REPORTED BY STAFF IN ITS CAPM ANALYSIS?**

4 A. On Exhibit __ (RRP-7) page 1, Staff reports the average yield on 30-year
5 Treasury bonds over the April 2008 – September 2008 period as being 4.51%.

6 **Q. HOW WOULD STAFF'S CAPM RESULT CHANGE IF THE**
7 **APPROPRIATE RISK-FREE RATE PROXY IS USED IN THE CAPM**
8 **ANALYSIS?**

9 A. Use of the appropriate risk-free rate of 4.51% in Staff's CAPM analysis instead of
10 the 4.19% estimate based in part on 10-year Treasury yields raises Staff's CAPM
11 estimate by 32 basis points (4.51% - 4.19%), from 9.98% to 10.30%.

12 **Q. HOW WOULD STAFF'S ZERO-BETA CAPM RESULT CHANGE IF THE**
13 **APPROPRIATE RISK-FREE RATE PROXY IS USED IN THAT**
14 **ANALYSIS?**

15 A. Use of the appropriate risk-free rate of 4.51% in Staff's Zero-Beta CAPM
16 analysis raises Staff's Zero-Beta CAPM estimates by 32 basis points (4.51% -
17 4.19%), from 10.34% to 10.66%. Averaging the two CAPM estimates, Staff's
18 final generic CAPM ROE reported on Exhibit __ (RRP-7) becomes 10.48% and
19 not the 10.16% reported.

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10. FLOTATION COSTS

Q. IN YOUR DIRECT TESTIMONY, YOU STATED THAT THE RETURN ON EQUITY SHOULD BE ADJUSTED TO INCLUDE AN ALLOWANCE FOR FLOTATION COSTS. PLEASE COMMENT ON FLOTATION COSTS.

A. Flotation costs are very similar to the closing costs on a home mortgage. In the case of issues of new equity, flotation costs represent the discounts that must be provided to place the new securities. Flotation costs have a direct and an indirect component. The direct component represents monetary compensation to the security underwriter for marketing/consulting services, for the risks involved in distributing the issue, and for any operating expenses associated with the issue (e.g., printing, legal, prospectus). The indirect component represents the downward pressure on the stock price as a result of the increased supply of stock from the new issue. The latter component is frequently referred to as "market pressure."

Flotation costs for common stock are analogous to the issuance costs associated with past debt issues which, as a matter of routine regulatory policy, are recoverable in rates over the life of the debt, even though no new debt issues are contemplated. In the case of common stock, which has no finite life, flotation costs are not amortized. Therefore, the recovery of flotation cost requires an upward adjustment to the allowed return on equity.

As demonstrated in my original testimony, the expected dividend yield component of the DCF model must be adjusted for flotation cost by dividing it by

1 (1 - f), where f is the flotation cost factor.

2 **Q. WHAT FLOTATION COST TREATMENT DOES STAFF RECOMMEND**
3 **IN THIS CASE?**

4 A. Staff recommends no allowance at all for flotation costs on the grounds that CH
5 or its parent is not contemplating any common stock issue in the near future. This
6 point of view is only correct if the flotation costs associated with all past common
7 equity issues have been recovered. The standard flotation cost allowance used in
8 my direct testimony is designed to recover the flotation costs associated with all
9 past issues that were not expensed, but rather written off against common equity.
10 By analogy, in the case of a debt issue, issuance costs are amortized over the life
11 of the debt, and the annual amortization charge is usually embedded in the cost of
12 debt for ratemaking purposes. This is done whether the company intends to issue
13 debt in the future or not and/or whether the company has issued debt in the past or
14 not. The recovery of debt flotation expense continues year after year irrespective
15 of whether the company issues new debt capital until recovery is complete, in the
16 same way that the recovery of past investments in plant and equipment through
17 depreciation allowances continues in the future even if no new construction is
18 contemplated. In the case of common stock, which has no finite life, flotation
19 costs are not amortized to a specific issuance as is the case for a bond. However,
20 the recovery of flotation costs requires a similar upward adjustment to the return
21 on equity that is allowed for ratemaking purposes. Unlike the case of bonds,
22 common stock has no finite life so that flotation costs cannot be amortized and
23 must therefore be recovered via an upward adjustment to the allowed return on

1 equity. As in the case of bonds, the recovery continues year after year regardless
2 of whether the utility raises new equity capital until the recovery process is
3 terminated.

4 To the extent that CH's flotation costs associated with past common equity issues
5 have not been recovered, the only recovery mechanism available for the recovery
6 of such costs is an upward adjustment to the return on equity as was used in my
7 direct testimony.

8 In short, Staff's proposed cost of equity is downward-biased by approximately 30
9 basis points to the extent that the flotation costs associated with past equity issues
10 have not been expensed or recovered in the past.

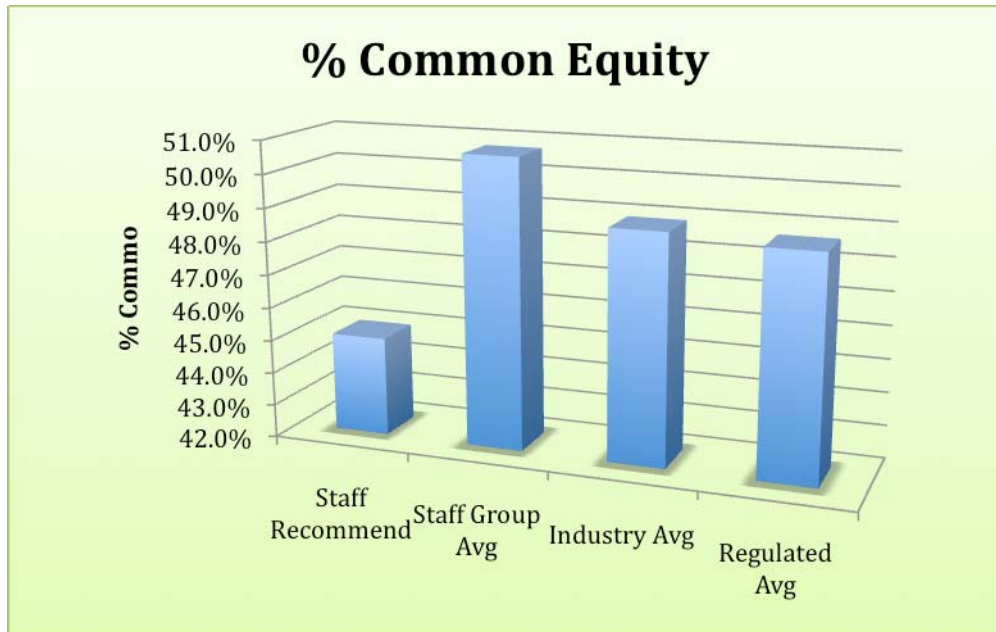
11 **11. CAPITAL STRUCTURE**

12 **Q. WHAT CAPITAL STRUCTURE DOES STAFF RECOMMEND?**

13 A. Staff recommends a hypothetical capital structure consisting of 45.0% common
14 equity versus the company's recommended capital structure which consists of
15 48.0% common equity.

16 **Q. HOW DOES STAFF'S RECOMMENDED CAPITAL STRUCTURE**
17 **COMPARE TO THAT OF ITS COMPARABLE GROUP AND THE**
18 **INDUSTRY AVERAGE?**

19 A. The bar chart below places Staff's recommendation into proper perspective.



1
2 The average common equity ratio of Staff’s comparable group is 50.7%, the
3 industry average² is 48.9%, and the authorized average³ is 48.7% compared to
4 Staff’s recommended 45.0% for CH. Thus, Staff’s recommended common equity
5 ratio is below the actual average for the Company’s peers and the average used
6 by regulators for ratemaking purposes.

7 **12. CAPITAL STRUCTURE ADJUSTMENT**

8 **Q. DID STAFF ADJUST ITS RECOMMENDED ROE TO ACCOUNT FOR**
9 **THE GREATER LEVERAGE IT ASSIGNS TO CH COMPARED TO ITS**
10 **COMPARABLE COMPANIES?**

11 A. No. Staff should have increased its recommended ROE of 9.45% to reflect the
12 higher relative risk associated with Staff’s proposed, more leveraged, capital
13 structure. It is a rudimentary tenet of basic finance that the greater the amount of

² From the Value Line Investment Analyzer software. December 2008.

³ From SNL’s “Regulatory Focus: Major Rate Case Decisions – January-September 2008.”

1 financial risk borne by common shareholders, the greater the return required by
2 shareholders in order to be compensated for the added financial risk imparted by
3 the greater use of senior debt financing. In other words, the greater the debt ratio,
4 the greater is the return required by equity investors. High risk means high return.

5 **Q. WHAT IS THE MAGNITUDE OF THE REQUIRED ADJUSTMENT TO**
6 **ACCOUNT FOR STAFF' MORE LEVERAGED CAPITAL STRUCTURE**
7 **FOR CH?**

8 A. Staff recommends a capital structure for CH that consists of 45% common equity
9 compared to an average capital structure that consists of 51% common equity for
10 the electric utilities in Staff's comparable group, as shown on Exhibit ___(RRP-6).
11 Therefore, the differential between the common equity component of Staff's
12 proposed capital structure for CH and the common equity component of the
13 average capital structure for the electric utilities in Staff's comparable group is 6%
14 after rounding.

15 Several researchers have studied the empirical relationship between the cost of
16 capital, capital-structure changes, and the value of the firm's securities.⁴ The
17 empirical studies suggest an average increase of 76 basis points, or 7.6 basis
18 points per one percentage point increase in the debt ratio. The theoretical studies
19 suggest an average increase of 138 basis points, or 13.8 basis points per one
20 percentage point increase in the debt ratio. In other words, equity return
21 requirements increase between 7.6 and 13.8 basis points (midpoint 11 basis

⁴ See Roger A. Morin, *The New Regulatory Finance* (2006) Chapter 16 section 16-4 for a summary of the comprehensive and rigorous empirical studies of the relationship between cost of capital and leverage for public utilities.

1 points) for each increase in the debt ratio by one percentage point, and more
2 recent studies indicate that the upper end of that range is more indicative of the
3 repercussions on required equity returns.

4 The average equity ratio for Staff's proxy group of electric utilities is 51%, and
5 the equity ratio imputed for CH is 45%, a difference of 6%. The above-described
6 research suggests that Staff should adjust its recommended ROE upward by 66
7 basis points (11 x 6), or 0.66%, to reflect CH's much more leveraged capital
8 structure. That factor alone would bring its ROE recommendation from 9.45% to
9 10.11% from this correction alone.

10 Thus, if the Commission adopts Staff's recommended capital structure, the ROE
11 should be increased by 66 basis points in order to account for the higher financial
12 risk.

13 **Q. IS THERE ANOTHER METHODOLOGY TO QUANTIFY THE ROE**
14 **ADJUSTMENT REQUIRED TO ACCOUNT FOR CH'S MORE**
15 **LEVERAGED CAPITAL STRUCTURE IMPUTED BY STAFF?**

16 A. Yes, there is. As a check on the capital structure adjustment, I relied on the so-
17 called Hamada relationship. Observed betas reflect both business risk and
18 financial risk. Hence, when a group of companies are considered comparable in
19 every way except for capital structure, their betas are not directly comparable.
20 Observed betas reflect both business risk and financial risk. There is a
21 methodology, based on CAPM theory, which can be used to adjust betas for
22 capital structure differences. The methodology relies on the relationship between
23 a firm's beta and its capital structure. The core idea is contained in the following

1 relationship.

2 Observed Beta = Business Risk Beta + Financial Risk Premium

3 The observed Beta is referred to as the “levered beta” and the business risk beta as
4 the “unlevered” beta. Thus,

5 Levered Beta β_L = Unlevered Beta β_U + Financial Risk Premium

6 Or, formally:

7
$$\beta_L = \beta_U[1 + (1-T) D/E]$$

8 where β_L , is the observed levered beta of a company, β_U is the unlevered beta of
9 the same company with no debt in its capital structure, D/E is the ratio of debt to
10 equity, and T the corporate income tax rate. This well-known relationship is
11 known as the Hamada equation, named after its originator.

12 I have employed the following two-step procedure for estimating the impact of a
13 change in capital structure on CH's beta and hence on ROE in Staff's testimony.
14 Exhibit ___(RAM-2R) displays the details of the calculations. First, using the
15 above formula in reverse, the "unlevered" betas of each company in Staff's
16 reference group are estimated and averaged so that the resulting betas are purged
17 of any financial risk and are reflective of business risk only. Second, the business
18 risk (unlevered) betas are relevered, or "recapitalized" to reflect Staff's imputed
19 capital structure. The above equation is solved for β_L using the unlevered beta of
20 the reference group, and the D/E imputed to CH by Staff.

21 Exhibit ___(RAM-2R) shows the calculations of unlevered betas for the
22 companies in Staff's reference group, given their debt ratios and Value Line
23 levered betas from Staff's Exhibit ___(RRP-6). The average unlevered beta for the

1 group is 0.51. This unlevered beta is an estimate of business risk only, that is, of
2 what Staff's comparable group's beta would be in the absence of debt financing.

3 A relevered beta for CH can now be calculated, using the same formula in
4 reverse. Given the business risk beta of 0.51 and the debt/equity ratio imputed by
5 Staff, its relevered beta can be computed.

6 CH's revised beta rises from 0.80 to 0.88 as a result of the additional financial risk
7 imputed to CH by Staff. The CAPM formula can then be used to quantify the
8 return (cost of equity) differences implied by the difference in the beta between
9 the average risk electricity distribution utility company and CH under Staff's
10 artificial imputed capital structure. The basic form of the CAPM, as discussed in
11 my direct testimony, states that the return differential is given by the differential
12 in beta times the MRP. Because CH's new beta has risen from 0.80 to 0.88 as a
13 consequence of Staff's proposed capital structure, the return differential implied
14 by the difference of 0.08 in beta is equal to 0.08 times the MRP. Using Staff's
15 estimate of 7.2% for the MRP, the return adjustment is 0.58%.

16 **13. RETURN ADJUSTMENTS**

17 **Q. DID STAFF PROPOSE A RETURN ADJUSTMENT TO THEIR ROE**
18 **RESULTS TO ACCOUNT FOR CREDIT QUALITY DIFFERENCES?**

19 A. Yes, it did. On pages 33-35 of its testimony, Staff proposes that CH's ROE be
20 reduced by 30 basis points to account for credit quality differences between CH
21 and the proxy group. The details of the calculation are provided in Exhibit ____
22 (RRP-9). Staff asserts that CH is less risky than the comparable group because
23 its debt ratings are slightly higher than those of the comparable companies.

1 **Q. WHAT IS THE BASIS FOR STAFF'S DOWNWARD ROE**
2 **ADJUSTMENT?**

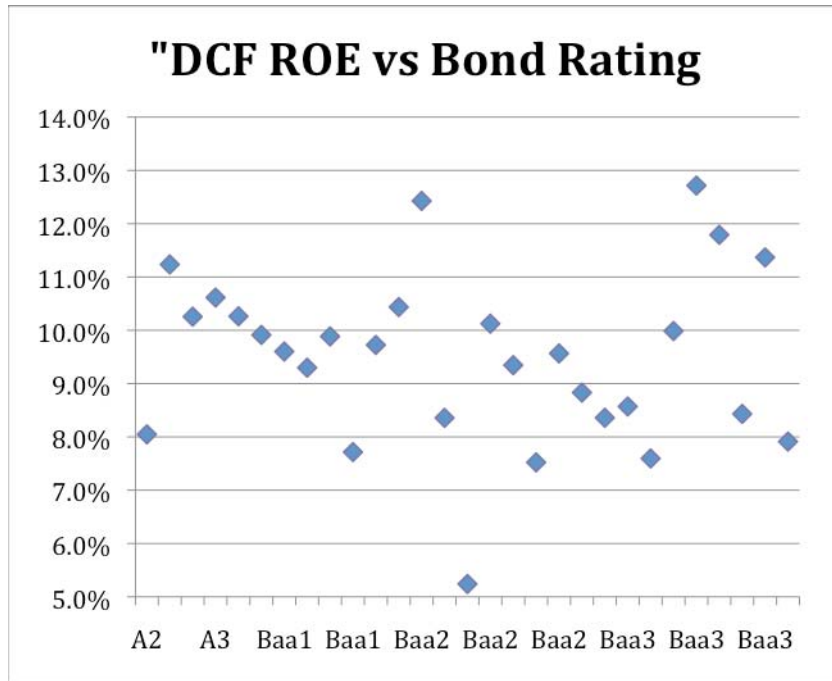
3 A. The adjustment is based on the difference in yields between utility bonds rated A
4 and BBB over the past six months.

5 **Q. DO YOU AGREE WITH STAFF'S 30 BASIS POINTS DOWNWARD**
6 **RETURN ADJUSTMENT?**

7 A. No, I do not. First, it is based on debt yield differentials and not on common
8 stock return differentials. It should be noted that credit ratings and debt rate
9 differentials are not directly related to required equity returns. Staff does not
10 offer any evidence of any relationship, let alone a causal relationship, between
11 credit quality and required or observed equity returns in the utility industry. Also,
12 Staff provides no evidence of a relationship between credit quality and observed
13 returns in the market as a whole.

14 Staff's own data contradict the proposed adjustment. As shown on the graph
15 below, there is no correlation between the Staff's DCF results for the companies
16 in its sample group and the ratings of these companies.

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The table below displays Staff’s DCF results for each bond rating group, taken directly from Staff Exhibit__(RRP-7) and Exhibit__(RRP-7). If Staff were correct, one would observe a positive relationship between return and declining credit quality. No such relationship exists. There is no relationship at all between equity returns and bond rating.

Bond Rating	DCF Estimates
Aa3	11.04%
A2	9.85%
A3	10.44%
Baa1	9.36%
Baa2	9.02%
Baa3	9.80%

8

9 Thus, the notion that the DCF results should be adjusted not only lacks a
10 theoretical foundation but it is refuted by Staff’s own data. I also point out that

1 there is no correlation between beta and the credit ratings of the companies in
2 Staff's sample group.

3 Third, the spreads between A-rated and Baa-rated utility bonds have exploded
4 upward in the current financial crisis, and Staff's spread data calculated over the
5 February – July 2008 period is hopelessly obsolete. Incidentally, I was puzzled
6 as to why Staff chose to rely on spread data over the February – July 2008 period
7 for a testimony dated November 2008. In any event, current spreads are at least
8 75 basis points and not the 29 basis points calculated by Staff.

9 Fourth, the Company's ability to tap capital markets and attract funds on
10 reasonable terms occurs at a crucial point in time when CH has an ambitious
11 capital expenditures program and will require external financing. CH's large
12 capital expenditure program over the next several years increases its dependence
13 on capital markets which have become volatile and more unpredictable. This is
14 certainly no time to apply a return decrement and reduce the Company's return
15 relative to its industry peers.

16 **Q. DO YOU DISAGREE WITH STAFF'S DOWNWARD ADJUSTMENT FOR**
17 **THE RDM?**

18 A. Yes, I do. Staff argues that if the Commission disagrees with its capital structure
19 recommendation, which it should, a further downward ROE adjustment of 10
20 basis points to account for what it considers to be the risk-reducing effect of the
21 RDM relative to the comparable companies is warranted.

22 Not only is this 10 basis points adjustment arbitrary and plucked out of thin air,
23 but most, if not all, energy utilities in the industry are under some form of

1 adjustment clause/cost recovery/rider mechanisms. The approval of adjustment
2 clauses, riders, and cost recovery mechanisms by regulatory commissions is
3 widespread in the utility business and is already largely embedded in financial
4 data, such as bond rating and business risk scores. The experience with the
5 operation of RDMs in general is very scant at this time, let alone the specific
6 RDM variant that the Commission may adopt.

7 Moreover, a RDM can actually increase regulatory risks, particularly the risk of
8 the Commission denying timely recovery if deferred balances get too large. The
9 recent Orange & Rockland temporary electric rate case is an example of actions
10 the Commission may choose to take based upon its view of the Company's
11 current earnings as compared with deferred balances. Therefore, it is speculative
12 as to whether, and if so how, a RDM will affect the Company's risk profile. Any
13 RDM-related credit adjustment therefore is plainly premature.

14 **Q. DR. MORIN, HOW DO YOU REACT TO STAFF'S REASONABLENESS**
15 **CHECK?**

16 A. On pages 39-40 of its testimony, despite its criticism of my own allowed returns
17 study, Staff goes on to test the reasonableness of its low 9.45% ROE
18 recommendation by comparing it with other recommended ROE determinations
19 for New York energy utilities. Not surprisingly, the allowed ROEs are all
20 similarly low, given that they were produced by the exact same methodology,
21 namely the GFC methodology, which I have shown to be deficient and obsolete in
22 the current capital market environment. Setting a fair return based on the past
23 actions of the same regulator is hopelessly circular, much like observing a series

1 of duplicate images in multiple mirrors.

2 **14. RESPONSE TO STAFF'S CRITICISMS**

3 **Comparable Group**

4 **Q. HOW DO YOU RESPOND TO STAFF'S CRITICISM OF YOUR**
5 **COMPARABLE GROUP OF ELECTRIC AND GAS UTILITIES?**

6 A. Staff expresses concern (p. 57-58) that my comparable group of electric utilities is
7 riskier than CH on the grounds that CH's bond rating is superior than the average
8 bond rating for my comparable groups. I disagree. Earlier, I showed that there is
9 little correspondence between bond ratings and equity risk. Moreover, that is a
10 strange and quite unwarranted criticism given that the average beta risk of my
11 group, 0.81, is virtually identical to the average beta of 0.80 in Staff's group, and
12 the same is true of the average debt rating of each group.

13 Staff also criticizes my two groups of companies, not four groups as Staff claims
14 on page 53, on the grounds that I employed a 50% minimum regulated revenues
15 screening criterion instead of 70%. This criticism is vacuous given that the
16 average percentage of regulated electric revenues in my two comparable groups
17 of utilities are 79% and 75%, respectively, well above the 70% threshold and well
18 within the Commission's 70% utility revenue criterion.

19 On page 54 and again on page 74, Staff criticizes my two sample groups
20 on the grounds that CH's credit quality is superior to that of the comparable
21 groups. I have already demonstrated that there is little, if any, relationship
22 between credit quality and common equity returns. Credit ratings examine risk
23 from a bondholder viewpoint rather than from a shareholder viewpoint. The

1 former is concerned mainly with ability to service debt and creditworthiness while
2 the latter is concerned with variability and uncertainty of return. Moreover, I
3 showed earlier that Staff's beta estimate for CH of 0.80 is virtually identical to the
4 average beta of my two groups and, therefore, is comparable in risk to the two
5 groups.

6 **Historical Risk Premium**

7 **Q. DO YOU HAVE ANY CONCERNS WITH YOUR RISK PREMIUM DATA**
8 **AS STAFF DOES?**

9 A. No, I do not. On page 73, Staff critiques my historical risk premium study of the
10 electric utility industry on the grounds that the companies in the Moody's Utility
11 Index have not been updated since 2002. I disagree. First, the companies that
12 make up the index certainly still exist and are representative of the electric utility
13 industry. Second, the study covers the 1929-2006 period and does not end in
14 2002 as Staff claims. Third, using the Standard & Poor's Electric Utility Index,
15 which still exists, instead of the Moody's Utility Index produces essentially the
16 same results.

17 **Q. DO YOU AGREE WITH STAFF'S SECOND CRITICISM OF YOUR**
18 **HISTORICAL RISK PREMIUM STUDY?**

19 A. No, I do not. On page 74, Staff argues that I have not demonstrated whether CH is
20 more or less risky than the companies that make up Moody's Electric Utility Index
21 over the 1926-2006 period. I disagree. First, over most of the long period that
22 covers my historical risk premium study, 1926-2006, the electric utility was
23 relatively homogenous in risk and under the umbrella protection of regulation for all

1 of its functions (power generation, transmission, distribution). Second, as previously
2 stated, Staff's CH beta risk estimate of 0.80 is virtually identical to the average beta
3 of the two groups of electric utilities used in my direct testimony, suggesting that
4 indeed CH's risk profile is comparable to the group averages.

5 **Q. DO YOU AGREE WITH STAFF'S THIRD CRITICISM OF YOUR**
6 **HISTORICAL RISK PREMIUM STUDY?**

7 A. No, I do not. Staff critiques (pp. 73-74) the risk premium method on the grounds
8 that the method assumes that the risk premium is constant over time, that is, that
9 the risks of Treasury securities have remained at the same level relative to the
10 risks of the electric utility stocks.

11 This criticism is unwarranted. To the extent that the historical equity risk
12 premium estimated follows what is known in statistics as a random walk, one
13 should expect the equity risk premium to remain at its historical mean. The best
14 estimate of the future risk premium is the historical mean. As I explained in my
15 direct testimony, since I found no evidence that the market price of risk or the
16 amount of risk in common stocks has changed over time, that is, no significant
17 serial correlation in the successive market risk premiums from year to year, it is
18 reasonable to assume that these quantities will remain stable in the future.

19 Moreover, my historical risk premium analysis provides a conservative
20 downward-biased estimate of the current risk posture of the industry and CH
21 given that the risk of the utility industry has intensified steadily in the past decade
22 and that capital costs have exploded upward in the recent financial crisis.

23

1 **Q. IS THE RISK PREMIUM METHODOLOGY CONSISTENT WITH**
2 **FINANCIAL THEORY?**

3 A. It certainly is. The Risk Premium approach is conceptually sound and firmly rooted
4 in the conceptual framework of modern finance theory. It is widely used by
5 analysts, investors, and expert witnesses. Most college-level corporate finance
6 and/or investment management texts contain detailed conceptual and empirical
7 discussion of the risk premium approach.⁵ The latter is typically recommended as
8 one of the three leading methods of estimating the cost of capital.⁶ Risk premium
9 analysis techniques are widely discussed and presented in investment community
10 reports. Professional certified financial analysts are certainly well versed in the
11 use of this method.

12 Data requirements to implement the method are not prohibitive. The methodology is
13 more responsive to developing changes in capital market conditions and provides a
14 timely method for reflecting the impact of current interest rate trends on return
15 requirements in contrast to the DCF method, which may be sluggish in detecting
16 changes in return requirements, especially when based on historical data. One
17 advantage of the risk premium over DCF method is that the former takes a broader
18 time-series perspective rather than a snapshot point-in-time viewpoint, and is
19 therefore less vulnerable to the vagaries of any one particular capital market
20 environment.

21

⁵ See Bodie, Z., Kane, A., and Marcus, A. J., *Investments*, McGraw-Henry Irwin, 6th ed., 2005, a recommended textbook for Chartered Financial Analyst certification and examination.

⁶ See Brigham and Erhardt (2005), *Corporate Finance: A Focused Approach*, 2nd ed., Thomson 2006.

1 **Allowed Returns**

2 **Q. PLEASE RESPOND TO STAFF’S CRITICISM OF ALLOWED RISK**
3 **PREMIUMS BY REGULATORS.**

4 A. In its testimony (pp. 75-76), Staff characterizes my allowed risk premium study as
5 circular. This is a strange and unwarranted criticism, given that Staff itself uses
6 the NYPSC allowed returns as a check on the reasonableness of its recommended
7 ROE. Furthermore, Staff defends its low ROE recommendation on the grounds
8 that particular features of NYPSC regulation such as multi-year rate plans,
9 revenue decoupling mechanisms, forward looking test years, and stayout
10 premiums, lower risk and therefore justify a lower ROE. I note that most, if not
11 all, electric and gas utilities have some form of adjustment clause/cost
12 recovery/rider mechanisms. The approval of adjustment clauses, riders, and cost
13 recovery mechanisms by regulatory commissions is standard policy and
14 widespread in the utility business and is already largely embedded in financial
15 data, such as bond ratings and business risk scores, such as Standard and Poor’s
16 Business Risk Score.

17 **Q. DR. MORIN, HAVE THERE BEEN ANY SPECIFIC REFERENCES TO**
18 **ALLOWED RETURN AS AN IMPORTANT ELEMENT IN**
19 **DETERMINING A UTILITY’S RISK?**

20 A. Yes. To illustrate the pivotal role of allowed ROE on utility risk, I refer Staff to
21 the unreasonably low 9.1% ROE authorized in Consolidated Edison Company of
22 New York (CECONY)’s 2008 Rate Order and its role in the recent downgrading
23 of CECONY’s securities.

1 Standard & Poor's ("S&P") makes the following statement in its research update
2 entitled *Consolidated Edison Inc Downgraded to 'A-' From 'A' on Rate Decision*:

3 *"The rating action reflects our expectations that the firm's financial measures will*
4 *be commensurate with 'A-' after the recent New York Public Service Commission's*
5 *\$425 million rate order for subsidiary Consolidated Edison Co. of New York Inc.*
6 *becomes effective at month's end."*
7

8 Fitch Ratings ("Fitch") also issued research reports on Consolidated Edison on
9 March 20, 2008 ("Fitch Downgrades Con Ed of NY & Con Ed Inc. to 'A-' on Rate
10 Decision") and March 28, 2008 ("Fitch Completes Review of Con Ed Inc.
11 Group"). Fitch made the following comments:

12 *The outcome of the yesterday's rate decision by the New York Public Service*
13 *Commission (NYPSC) will not produce cash flow credit measures consistent with*
14 *the prior credit ratings...The authorized return on equity of 9.1% is below the*
15 *average for utilities of comparable risk, and in Fitch's view is inconsistent with*
16 *the heavy investment program and capital raising needs facing the utility...Fitch's*
17 *prior ratings were based on the historical support shown by the NYPSC to*
18 *preserve this urban utility's strong access to capital. However, the rate decision*
19 *and the related discussion by commissioners in the hearing indicate the NYPSC's*
20 *low regard for maintaining ratings at Consolidated Edison Co. of New York Inc.*
21 *above the lowest rungs of investment grade.*
22

23 *Also, the authorized ROE for Consolidated Edison Co. of New York Inc. of 9.1%*
24 *is not only well below the sector average but is also below average for utilities of*
25 *comparable risk and in Fitch's view is not supportive of the projected need to*
26 *raise equity and debt capital.*
27

28 Lastly, Moody's, in its Credit Opinion of March 21, 2008 has made the following
29 comments:

30 *Moody's affirmed the ratings of Consolidated Edison Co. of New York Inc. and*
31 *O&R but revised the rating outlook for all three companies to negative from*
32 *stable. This action reflected our growing concern with regard to the ability of the*
33 *three companies to achieve a materially stronger financial profile given the*
34 *persistent weakness in key credit metrics for the companies relative to what we*
35 *typically see for companies in the "A" rating category coupled with the decision*
36 *by the NYPSC with respect to Consolidated Edison Co. of New York Inc. latest*

1 *rate case....The change to negative rating outlooks for the companies also takes*
2 *into account our more guarded view than we have had in the past about the extent*
3 *to which the New York regulatory environment will be supportive in future rate*
4 *case decisions for Consolidated Edison Co. of New York Inc. and O&R. In*
5 *particular, we note the 9.1% allowed return on equity (ROE) used by the*
6 *NYPSC in late 2007 for O&R's rate investigation.... And the recent fully*
7 *litigated decision in Consolidated Edison Co. of New York Inc. electric rate case,*
8 *which granted only about 35% of the \$1.2 billion rate increase requested...also*
9 *based on a 9.1% allowed ROE (reportedly the lowest ROE granted to an electric*
10 *utility in over 30 years). (emphasis added)*

11 It is abundantly clear from these statements that the level of allowed ROE is
12 indeed a major factor impacting the credit rating of a utility's securities.

13 **DCF Growth Rates**

14 **Q. PLEASE COMMENT ON STAFF'S CRITICISM OF YOUR DCF**
15 **ANALYSIS.**

16 A. Staff criticizes (pp. 58-59) my DCF earnings growth rates on the grounds that I
17 have not addressed how these earnings growth estimates relate to the dividend
18 payout policies of my companies and whether they are sustainable over time. I
19 totally disagree with this point of view for several reasons. First, one of the key
20 assumptions that underlies the standard DCF model is that earnings, dividends,
21 book value, and market price all grow at a constant rate forever. In other words,
22 the dividend payout ratio remains constant over time. That is the assumption I
23 made, and that is the assumption that Staff also made in the second stage of its
24 DCF analysis. Second, in my direct testimony and earlier in my rebuttal, I
25 discussed the merits of using analysts' consensus earnings growth forecasts in the
26 DCF model and the supportive empirical literature.

27 Third, while it is correct that the DCF calculation requires dividend growth rather
28 than earnings growth because dividends constitute the cash flows received by the

1 investor, it is clear that dividend growth can only be sustained if there is growth in
2 earnings. Since the ability to pay dividends stems from a company's ability to
3 generate earnings, growth in earnings per share can be expected to strongly
4 influence the market's dividend growth expectations.

5 Fourth, from a practical perspective, casual inspection of the Zacks Investment
6 Research, First Call Thompson, and Multex Web sites, among others, reveals that
7 earnings per share forecasts dominate the information provided. There are few, if
8 any, dividend growth forecasts. Only Value Line provides comprehensive long-
9 term dividend growth forecasts, and Staff's entire DCF analysis rests on the
10 reliability/validity of this one and only analyst. To compound the problem, Value
11 Line data on which Staff relies exclusively is perennially stale I that it is only
12 updated once every three months. I short, Staff's criticism is erroneous because it
13 ignores the myriad data sources for analysts' growth estimates that are maintained
14 on a current basis.

15 The wide availability of earnings forecasts is not surprising. There is an
16 abundance of evidence attesting to the importance of earnings in assessing
17 investors' expectations. The sheer volume of earnings forecasts available from
18 the investment community relative to the scarcity of dividend forecasts attests to
19 their importance. The fact that these investment information providers focus on
20 growth in earnings rather than growth in dividends indicates that the investment
21 community regards earnings growth as a superior indicator of future long-term
22 growth.

23

1 Finally, in the current environment where utilities are increasing their capital
2 expenditures, dividends cannot be expected to grow at the same rate that investors
3 expect earnings to grow.

4 **Q. STAFF CRITICIZES YOUR DCF ANALYSIS BECAUSE IT RELIES ON**
5 **EARNINGS GROWTH PROJECTIONS AND IT BELIEVES THAT SUCH**
6 **FORECASTS ARE OVERLY OPTIMISTIC. HOW DO YOU RESPOND?**

7 A. On page 58 lines 14-18, Staff denounces the use of financial analysts' earnings
8 forecasts on the grounds that such forecasts are overly-optimistic. I disagree, at
9 least for utility stocks. Using virtually all publicly available analyst earnings
10 forecasts for a large sample of companies (over 23,000 individual forecasts by
11 100 analyst firms), Lys and Sohn show that stock returns respond to individual
12 analyst earnings forecasts, even when they are closely preceded by earnings
13 forecasts made by other analysts or by corporate accounting disclosures.⁷ Using
14 actual and IBES data from 1982-1995, Easterwood and Nutt regress the analysts'
15 forecast errors against either historical earnings changes or analysts' forecasting
16 errors in the prior years.⁸ Results show that analysts tend to under-react to
17 negative earnings information, but overreact to positive earnings information.

18 The more recent studies provide evidence that analysts make biased
19 forecasts and misinterpret the impact of new information.⁹ For example, several

⁷ Thomas Lys & Sungkyu Sohn, "The Association Between Revisions of Financial Analysts' Earnings Forecasts and Security Price Changes," *Journal of Accounting and Economics* 13, 341-363 (1990).

⁸ John Easterwood & Stacey Nutt, "Inefficiency in Analysts' Earnings Forecasts: Systematic Misreaction or Systematic Optimism?" *The Journal of Finance* 54: 1777-1797 (1999).

⁹ Other relevant papers corroborating the superiority of analysts forecasts as predictors of future returns versus historical growth rates include: Dan Fried & Dov Givoly, "Financial Analysts Forecasts of Earnings: A Better Surrogate for Earning Expectations," *Journal of Accounting and*

1 studies in the early 1990s suggest that analysts either systematically underreact or
2 overreact to new information. Easterwood and Nutt discriminate between these
3 different reactions and reported that analysts underreact to negative information,
4 but overreact to positive information. The recent studies do not necessarily
5 contradict the earlier literature. The earlier research focused on whether analysts’
6 earnings forecasts are better at forecasting future earnings than historical
7 averages, whereas the recent literature investigates whether the analysts’ earnings
8 forecasts are unbiased estimates of future earnings. It is possible that even if the
9 analysts’ forecasts are biased, they are still closer to future earnings than the
10 historical averages, although this hypothesis has not been tested in the recent
11 studies. One way to assess the concern that analysts’ forecasts may be biased
12 upward is to incorporate into the analysis the growth forecasts of independent
13 research firms, such as Value Line, in addition to the analyst consensus forecast.
14 Unlike investment banking firms and stock brokerage firms, independent research
15 firms such as Value Line have no incentive to distort earnings growth estimates in
16 order to bolster interest in common stocks.

17 The magnitude of the optimism bias for large rate-regulated companies in
18 stable segments of an industry is likely to be very small. Empirically, the severity of
19 the optimism problem is unclear for regulated utilities, if a problem exists at all. It is
20 interesting to note that Value Line forecasts for utility companies made by
21 independent analysts with no incentive for over- or understating growth forecasts are

Econometrics 85-107 (1982); R. Charles Moyer, *et al.*, “The Accuracy of Long-Term Earnings Forecasts in the Electric Utility Industry” *International Journal of Forecasting*, 1, 241-252 (1985); and David Gordon, “Choice Among Methods of Estimating Share Yield,” *Journal of Portfolio Management* 15, 50-55 (1989).

1 not materially different from those published by analysts in security firms with
2 incentives not based on forecast accuracy, and may in fact be more robust.

3 **Q. HOW DO YOU RESPOND TO STAFF'S CRITICISM THAT YOU DID NOT**
4 **RELY ON THE SUSTAINABLE GROWTH APPROACH ENDORSED BY**
5 **THE COMMISSION?**

6 A. For reasons discussed at length earlier, I did not rely on the sustainable growth
7 approach because of its inherent circularity and inconsistency with the empirical
8 evidence.

9 **Market-to-Book Ratios**

10 **Q. PLEASE DISCUSS STAFF'S VIEWS ON MARKET-TO-BOOK (M/B)**
11 **RATIOS.**

12 A. Staff argues on pages 47-52 that a regulated utility has a M/B ratio greater than
13 one when investors anticipate earning above their required return, implying that
14 the regulating authority should lower the allowed return on equity, so that the
15 stock price will decline to book value. I presume from these statements that Staff
16 finds it desirable that stock prices drop from the current M/B value of well above
17 1.0 for most electric and gas utilities, to the desired M/B ratio range of 1.0.
18 There are several reasons why M/B ratios are largely irrelevant and why I
19 disagree with Staff's views of the role of M/B in regulation.

20 First, Staff's position implies that regulators should set an ROE so as to produce a
21 M/B of 1.0. This is erroneous. The stock price is set by the market, not by
22 regulators. The M/B ratio is the result of regulation, not its starting point. The
23 regime of regulation envisioned by Staff, that is, that the regulator will set an

1 allowed rate of return so as to produce a M/B of close to 1.0, presumes that
2 investors commit capital to a utility with a M/B in excess of 1.0, knowing full
3 well that they will be inflicted a capital loss by regulators. Such behavior on the
4 part of investors is certainly not a realistic or accurate view of investment or
5 regulation.

6 Second, the traditional M/B ratio does not reflect the replacement cost of a
7 company's assets. The fundamental goal of regulation should be to set the
8 expected economic profit for a public utility equal to the level of profits expected
9 to be earned by firms of comparable risk, in short, to emulate the competitive
10 result. For unregulated firms, the natural forces of competition will ensure that in
11 the long-run the market value of these firm's securities equals the replacement
12 cost of their assets. This suggests that a fair and reasonable price for a public
13 utility's common stock is one that produces equality between the market price of
14 its common equity and the replacement cost of its physical assets. The latter
15 circumstance will not necessarily occur when the M/B is 1.0. Only when the
16 market value of the firm's common equity equals the value of the firm's equity at
17 replacement cost will equality hold.

18 In an inflationary period, the replacement cost of a firm's assets may increase
19 more rapidly than its book equity. To avoid the resulting economic confiscation
20 of shareholders' investment in real terms, the allowed rate of return should
21 produce a M/B ratio which provides a Q-ratio of 1 or a Q-ratio equal to that of
22 comparable firms¹⁰. It is quite likely that M/B ratios will exceed one if inflation

¹⁰ The relationship between the market value of a firm's securities and the replacement cost of its

1 increases the replacement cost of a firm's assets at a faster pace than book equity.
2 This explains in part why utility M/B ratios have remained well above 1.0 over
3 the past two decades.

4 **Q. ARE STAFF'S VIEWS ON THE M/B RATIO CONSISTENT WITH ITS**
5 **DCF ANALYSIS?**

6 A. No, they are not. In the implementation of the sustainable growth DCF model
7 that I discussed earlier, Staff uses assumed equity returns (ROE) which are
8 considerably higher than its recommended cost of equity of 9.45% for CH. In
9 other words, Staff assumes that its sample of utilities will forever earn a return in
10 excess of their cost of equity, or, in other words, that the M/B ratios of these
11 companies will exceed 1.00 forever. This is inconsistent with Staff's view that
12 M/B ratios should converge towards 1.00 when earned returns equal required
13 returns.

14 Stock prices above book value are common for utility stocks, and indeed for all of
15 the major market indexes. It is obvious that investors and regulators through their
16 rate case decisions, do not subscribe to Staff's position that utilities that have
17 market prices above book value are over-earning (page 52 lines 1-4). Otherwise,
18 regulators would not grant rate increases for any utility whose stock price was
19 above book value, and investors would never bid up the price of stock above book
20 value.

assets is embodied in the Q-ratio. The Q-ratio is defined as the market value of a firm's securities divided by the replacement cost of its assets. If $Q > 1.0$, a firm has an incentive to invest because the value of the firm's securities exceeds the replacement cost of assets, that is, the firm's return on its investments exceeds its cost of capital. Conversely, if $Q < 1.0$, a firm has a disincentive to invest in new plant. In final long-run equilibrium, the Q-ratio is driven to 1.0.

1 Staff's views on the role of M/B are certainly not corroborated by the historical
2 facts. Utility M/B ratios have been consistently above 1.00 for almost two
3 decades.

4 The fact remains that the essential flaw in the Staff's analysis is the direct
5 application of market-derived values to the book measures upon which the
6 Commission sets returns. The calculated return that investors are expecting is a
7 market return not a book return on book equity. Yet Staff converts this market
8 return into a required book return without once acknowledging the inconsistency.

9 **Q. IS THERE A CONFLICT OF LOGIC IN YOUR TESTIMONY ABOUT**
10 **THE APPLICATION OF THE DCF METHOD TO THE AGGREGATE**
11 **EQUITY MARKET?**

12 A. No, not at all. On page 66 of its testimony, Staff alleges an inconsistency in the
13 application of the DCF method. In essence, Staff is saying that I employed
14 dividend growth rates when estimating the MRP component of the CAPM while I
15 employed earnings growth rates when applying the DCF model to utility stocks. I
16 did indeed apply the DCF model to utility stocks using earnings growth for
17 reasons explained earlier in my rebuttal and in my direct testimony. But when
18 applying the DCF model to the market index as a whole, consisting of several
19 hundred stocks, the core assumption of the DCF model that earnings growth and
20 dividend growth grow at the same constant rate is much more likely to be satisfied
21 when applying the DCF model to a broad market aggregate than to a specific
22 industry.

23

1 **Q. DO YOU AGREE WITH STAFF THAT INVESTORS' CURRENT RISK**
2 **PREMIUM EXPECTATIONS ARE DECLINING AND ARE LOWER**
3 **THAN THAT INDICATED BY LONG-TERM AVERAGES OF**
4 **HISTORICAL RETURNS DATA?**

5 A. No, absolutely not. On page 66, Staff makes the startling statement that "*recent*
6 *studies have provided evidence that the market risk premium is declining,*" and I
7 should not have relied on historical MRP studies. First, one would think that the
8 recent and ongoing financial crisis would dissuade anyone from the notion that
9 risk premiums are diminishing. It is difficult to take seriously Staff's contention
10 that investors will demand less of a risk premium in the current capital market
11 environment than in recent years. Second, I cite a passage from a review of the
12 literature conducted by Mehra and Prescott that concluded that historical and
13 forward-looking market risk premiums are very similar. There are two revealing
14 passages from Mehra and Prescott's more recent review of the MRP literature:

15 *Even if the conditional equity premium given current market conditions is small,*
16 *and there appears to be general consensus that it is, this in itself does not imply*
17 *that it was obvious either that the historical premium was too high or that the*
18 *equity premium has diminished.*
19 *In the absence of this [knowledge of the future], and based on what we currently*
20 *know, we can make the following claim: over the long horizon the equity premium*
21 *is likely to be similar to what it has been in the past and the returns to investment*
22 *in equity will continue to substantially dominate that in T-bills for investors with a*
23 *long planning horizon.*
24

25 On page 68, Staff points out that Ibbotson, the author of the study that heralded
26 the use of historical MRP studies, reneges on the use of historical MRPs to predict
27 future returns. Staff fails to point out that Ibbotson / Morningstar in Appendix A
28 (Table A-1 p. 2) calculates what they call "Long Horizon Equity Risk Premium"

1 and arrive at 7.1% (for the period 1926-2007) which is nearly identical to both
2 Staff's and my MRP estimate of 7.2% and 7.4%.

3 **CONCLUSIONS**

4 **Q. WHAT RETURNS ARE INVESTORS EXPECTING FOR STAFF'S**
5 **GROUP OF COMPANIES?**

6 A. As shown in Table 2, investors are expecting an average ROE of 11.1%.

7 **Q. WHAT IS THE AVERAGE AUTHORIZED ROE FOR STAFF'S GROUP**
8 **OF COMPANIES?**

9 A. As shown in Table 1, the average authorized ROE for the utility operations of
10 these comparable companies is 10.93%.

11 **Q. WHAT ROE DOES STAFF RECOMMEND?**

12 A. Staff's recommended ROE is 9.45%.

13 **Q. WHAT ROE SHOULD STAFF'S ANALYSIS PRODUCE WHEN**
14 **ADJUSTED FOR THE REASONS YOU HAVE EXPLAINED?**

15 A. Applying the various changes and corrections I have outlined in my rebuttal,
16 particularly the devastating impact of the current financial crisis on capital costs,
17 Staff's analysis indicates a conservative return on equity of 11%, as shown below.

18 **Q. WHAT DO YOU CONCLUDE FROM STAFF'S COST OF CAPITAL**
19 **TESTIMONY?**

20 A. My general conclusions are:

21 **1. Current Financial Crisis.** In its DCF analysis, Staff's use of the 6 month
22 average stock price period ending September 2008 totally ignores the impact of
23 the current financial crisis on required returns. Using current stock prices that

1 reflect the impact of the ongoing financial crisis on capital costs and its
2 devastating impact on utility stock prices raises Staff's DCF estimates by 75 basis
3 points.

4 **2. Unreliable Recommendation.** Staff's ROE recommendation is unreasonably
5 low, and is not a reliable estimate of CH's cost of equity capital given Staff's
6 heavy reliance on one particular and fragile cost of equity methodology, which is
7 known to understate investor returns.

8 **3. Allowed returns.** Staff's recommended return is well outside the zone of
9 currently allowed rates of return for its sample companies and would be among
10 the lowest ROE award in the country for a major energy utility.

11 **4. The DCF Model Understates the Cost of Equity.** It is well-known that
12 application of the standard DCF model to utility stocks understates the investor's
13 expected return when the M/B ratio exceeds unity. This is particularly relevant in
14 the current capital market environment where utility stocks, including Staff's
15 sample companies, are trading at M/B ratios well above unity.

16 **5. DCF Functional Form.** Staff relies on the annual form rather than on the
17 quarterly version of the DCF model, understating the cost of equity by 20 basis
18 points.

19 **6. Stock Price in the DCF model.** Staff's application of the DCF model violates
20 market efficiency principles and mismatches stock price and expected growth by
21 its use of stale 6 month average stock prices instead of current prices for its proxy
22 group of companies.

23

1 **7. DCF Earnings Retention Growth.** There is a logical inconsistency in the
2 retention growth technique because Staff is forced to assume the answer to
3 implement the method. From Staff's own evidence, investors expect substantially
4 higher returns for utilities than what Staff recommends.

5 **8. DCF Growth Rates: Analysts' Forecasts.** Investors are expecting
6 substantially higher growth rates than Staff's 5.1% first-stage growth rate and
7 5.3% second-stage growth rate for the sample companies. Using analysts'
8 consensus growth forecasts instead of Staff's would increase the DCF estimate of
9 the cost of common equity by 70 basis points (0.70%), that is, from 9.66% to
10 10.36%.

11 **9. CAPM Risk-Free Rate.** Staff's risk-free rate proxy relies on the average
12 yield on 10-year and 30-year Treasury notes instead of just the yield on 30-year
13 Treasury bonds. Using the appropriate risk-free rate, Staff's CAPM estimates
14 must be raised by 32 basis points for this correction alone.

15 **10. Flotation Costs.** Staff's DCF estimates of equity costs are downward-biased
16 by approximately 30 basis points to the extent that not all the flotation costs
17 associated with past equity issues have been expensed or recovered in the past.

18 **11. Capital Structure Recommendation.** Staff's capital structure
19 recommendation is at odds with the capital structures of its comparable
20 companies, the electric and gas utility industries, and electric and gas utility
21 regulated capital structures.

22 **12. Capital Structure/ROE Adjustment.** Staff fails to adjust its recommended
23 ROE to reflect the fact that it uses a capital structure for CH that has considerably

1 more debt than the average capital structure of its comparable group of utilities
2 and the industry generally. Such a required adjustment raises its ROE
3 recommendation from 9.45% to 10.11% based on published empirical studies and
4 the Hamada methodology.

5 **13. Return Adjustments.** The basis for Staff's downward ROE adjustments for
6 credit quality differences and revenue decoupling mechanisms is erroneous,
7 unsupported by Staff's own data, and should be rejected by the Commission.

8 **14. Criticisms of my testimony.** Staff's criticisms of my direct testimony are
9 without foundation.

10 **Q. WHAT CONCLUSIONS HAVE YOU REACHED REGARDING STAFF'S**
11 **ROE RECOMMENDATION?**

12 A. Staff's recommended ROE is vastly understated for the following reasons. First
13 and foremost, Staff's use of 6 month average stock prices for the period ending
14 September 2008 is stale and does not in anyway reflect investors' current return
15 expectations especially in light of the ongoing financial crisis. As I have
16 demonstrated, using current prices that capture the impact of the ongoing financial
17 crisis would raise Staff's DCF estimate by 75 basis points from 9.54% to 10.29%
18 Second. recognition of the proper functional form of the DCF model (20 basis
19 points) and placing a much greater emphasis on analysts' growth forecasts in the
20 DCF analysis (70 basis points) would further raise Staff's DCF estimate from
21 10.29% to 10.99%, without flotation costs. Third, recognition of the appropriate
22 risk-free rate in the CAPM analysis raises Staff's CAPM estimates from 9.98% to
23 10.30% without flotation costs. Giving a two-thirds weight to the amended DCF

1 result of 10.99% and a one-third weight to the amended CAPM result of 10.30%
2 would increase Staff's recommendation to 10.76% without flotation costs. The
3 addition of flotation costs would increase this result to slightly above 11%. If the
4 Commission were to adopt Staff's capital structure recommendation, and I
5 strongly recommend that it should not, the allowed ROE should be further
6 increased by 66 basis points to account for the higher financial risk of having
7 more leverage in the capital structure as proposed by Staff.

8 **Q. DR. MORIN, DO YOU HAVE ANY GENERAL COMMENT ON NEW**
9 **YORK REGULATION?**

10 A. Yes, I do. At the end of its testimony, Staff devotes some 20 pages lauding the
11 merits of New York regulation and disputing the negative picture I have painted
12 of New York regulation. I have several comments and reflections on these
13 claims.

14 Staff claims that New York is a less-risky regulatory environment than other
15 utilities on account of its supportive policies such as deferrals, riders, forward test
16 years, etc. First, such policies are widespread in the industry as I discussed
17 earlier. Second, while I agree that the NYPSC has been innovative and
18 supportive in the past, there is an alarming trend in recent policy submissions.
19 Fundamentally, Staff's rate case submissions and proposed policies in recent
20 cases have gradually reduced the opportunity to earn extra returns and to offset
21 unforeseen cost increases or other contingencies for New York utilities. Over
22 the years, the Commission has almost entirely eliminated any possibility of higher
23 earnings via incentives, and has imposed penalties in ever increasing amounts.

1 For example, in past recent cases Staff has proposed harsher productivity
2 adjustments, the non-recovery of health care costs in excess of inflation, and
3 RDMs with penalties but without positive incentives.

4 As a result, the distribution of security returns for New York regulated
5 utilities is more likely to resemble a negatively skewed distribution. By restricting
6 the upward potential for returns and responding sluggishly on the downward side,
7 such policies impart negative asymmetry to the distribution of returns, and is more
8 likely to result in New York utilities earning less, rather than more, than their cost of
9 capital. Such lack of symmetry (“heads I win, tails you lose”) clearly increases
10 risk and results in a deterioration of the regulatory climate and higher capital
11 costs.

12 In short, the risk is that New York utilities will not be able to earn a
13 competitive return as their allowed return is reduced to bond-like levels with only
14 downside potential.

15 **Q. ARE YOU CONCERNED WITH THE INADEQUACY OF ALLOWED**
16 **ROES IN NEW YORK STATE VS. OTHER JURISDICTIONS.**

17 A. Yes, I am, and so is the investment community. Staff argues that other factors
18 such as lower risk may have led to the consistently lower allowed rates of return
19 granted by New York State vs. other jurisdictions. Staff argues that the failure to
20 differentiate the utilities companies by their credit ratings, leads to an incorrect
21 conclusion that New York is allowing lower rates of return than other
22 jurisdictions. I disagree. First, as discussed previously, credit ratings are not
23 directly linked to equity returns. Second, there is no evidence that higher (lower)

1 allowed rates of return to companies are correlated with lower (higher) debt
2 ratings. It is clear that by continually "pushing the envelope" on rate of return
3 will have undesired results on capital costs and ratepayers, and already has.

4 **Q. IN YOUR VIEW, DR. MORIN, IS NEW YORK REGULATION**
5 **SUPPORTIVE?**

6 A. I believe that New York regulation is far less supportive than in the past. The SNL
7 (formerly RRA) ranking puts New York regulation squarely in the middle of the
8 utility regulation spectrum, with an Average 2 ranking, the middle segment of
9 average. In a recent document dated November 7, 2008 entitles "*Assessing U.S.*
10 *Regulatory Environments*," S&P rates New York regulation as less credit
11 supportive, below average. Lehman Brothers, before its demise, ranked New
12 York regulation 42nd of out of the 48 commissions it ranked.

13 **Q. IN YOUR VIEW, DR. MORIN, HOW CAN THE NEW YORK**
14 **REGULATORY CLIMATE BE IMPROVED?**

15 A. I believe that one key culprit for the low allowed ROEs and deteriorating
16 regulatory climate in New York is Staff's adherence to the GFC methodology.
17 While this is certainly not the time and place to propose formal revisions to the
18 GFC, nevertheless a few obvious remarks are in order. To that end, I would
19 recommend that the NYPSC hold a generic cost of capital hearing, similar to that
20 held some fifteen years ago when the GFC was first expounded.

21 As I discussed earlier, I believe there are several positive elements in the GFC
22 method that should be retained, for example, (i) the use of several methodologies
23 in estimating a fair return on common equity, including the two-stage DCF

1 methodology, (ii) the sample of utility companies in the DCF and CAPM
2 analyses; (iii) the magnitude of the beta estimates in the CAPM analysis, and (iv)
3 the magnitude of the MRP component in the CAPM analysis.

4 However, there is a dire and urgent need for the GFC to be recalibrated and
5 adapted to the new world financial order, hence my recommendation for a generic
6 cost of capital docket. A few obvious improvements are in order. First, the use
7 of more current stock prices in the DCF model and bond yields in the CAPM
8 would capture current capital market circumstances. Second, the addition of a
9 Risk Premium analysis performed with both Treasury yields and utility bond
10 yields would capture the rising/falling costs of utility debt relative to Treasury
11 yields. Third, retaining the two-stage DCF analysis but using long-term GDP
12 growth forecasts as proxies for growth instead of relying on the circular
13 sustainable growth method. These are some of the few obvious remedial
14 improvements that are easy to implement. A more formal review of the GFC
15 would take the form of a generic approach to determining the ROE.

16 **Q. HOW WOULD A GENERIC APPROACH IMPROVE THE**
17 **REGULATORY PROCESS?**

18 A. A generic approach is one where the Commission decides on a standard method
19 and resulting formula that sets a base return on equity for each year. This can be
20 for a “low risk” utility, with a specified increment for utilities determined to have
21 higher risks. The formula would be determined in a single hearing where all
22 parties involved would submit expert testimony with recommendations on what
23 the formula should be and how it should be modified for each utility to represent

1 their level of risk. Once the base is set, the value is reset every year, reflecting
2 changes in interest rates. The formula is revisited every three or five years. It
3 simplifies the regulatory process, provides more certainty and reduces the costs of
4 regulation by eliminating the need for ROE testimony and analysis by the utility,
5 Commission Staff, and intervenors. A similar concept has been adopted in
6 California. Most major Canadian regulators including The National Energy
7 Board have implemented such an approach.

8 **Q. FINALLY, DR. MORIN, IS YOUR RECOMMENDED ROE**
9 **CONSERVATIVE UNDER CAPITAL MARKET CIRCUMSTANCES?**

10 A. Yes, it is. Capital markets are currently in a state of turmoil. Borrowers are now
11 forced to compete in a market virtually devoid of funds. As a result, the cost of
12 money for corporations has increased, and new debt/stock issues are almost non-
13 existent. Accessibility to the commercial paper market has become severely
14 reduced, even for highly-rated companies. The debt markets have witnessed
15 record high yield spreads (the incremental yield over Treasury rates needed to
16 issue debt) and a more severe differentiation between the spreads charged to
17 companies with different credit ratings.

18 To illustrate, Company witness Renner provides in Exhibit __ (SAR-11R)
19 a list of debt issuances which depicts the rising and record high spreads in recent
20 months for utilities. Whereas utilities were borrowing money at some 180 basis
21 points over Treasuries, the current spread is 400 - 450 basis points, an increase of
22 220-270 basis points, virtually the same upward increase as has been observed in
23 the DCF estimates. In terms of market accessibility, the new issuance debt

1 markets and the equity new issuance markets are all but closed. In a nutshell,
2 there is a fundamental structural upward shift in risk aversion as capital markets
3 are re-pricing risk, and capital has become, and will continue to be, more
4 expensive for all market participants.

5 I therefore believe that my ROE recommendation is actually conservative
6 in the current capital market environment. Given the current unsettled state of
7 capital markets, it would not be unreasonable to increase my ROE
8 recommendation by at least 50 basis points.

9

10 **Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?**

11 A. Yes, it does