1   BEFORE THE
              FLORIDA PUBLIC SERVICE COMMISSION
2

3   In the Matter of:
                                DOCKET NO. 130040-EI
4

       PETITION FOR RATE INCREASE
5   BY TAMPA ELECTRIC COMPANY.
       _____/
6

7   VOLUME 2

8   Pages 104 through 291

9

10   PROCEEDINGS: HEARING

11

       COMMISSIONERS
12   PARTICIPATING: CHAIRMAN RONALD A. BRISÉ
                       COMMISSIONER LISA POLAK EDGAR
13   COMMISSIONER ART GRAHAM
                       COMMISSIONER EDUARDO E. BALBIS
14   COMMISSIONER JULIE I. BROWN

15   DATE: Monday, September 9, 2013

16   TIME: Commenced at 9:37 a.m.
                      Concluded at 10:01 a.m.
17

       PLACE: Betty Easley Conference Center
18   Room 148
                      4075 Esplanade Way
19   Tallahassee, Florida

20   REPORTED BY: LINDA BOLES, CRR, RPR
                      Official FPSC Reporter
21   (850) 413-6734

22   APPEARANCES: (As heretofore noted.)

23

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25

                 FLORIDA PUBLIC SERVICE COMMISSION

1   I N D E X

2   WITNESSES

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    NAME: PAGE NO.

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                FLORIDA PUBLIC SERVICE COMMISSION

1   EXHIBITS

2   NUMBER: ID.   ADMTD.

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5   ***NO EXHIBITS MARKED OR ADMITTED IN THIS VOLUME***

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1 P R O C E E D I N G S

2 (Transcript follows in sequence from

3 Volume 1.)

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

ROBERT B. HEVERT

ON BEHALF OF TAMPA ELECTRIC COMPANY

I. INTRODUCTION

Q.   Please state your name, affiliation and business address.

A.   My name is Robert B. Hevert. I am Managing Partner of Sussex Economic Advisors, LLC ("Sussex"). My business address is 161 Worcester Road, Suite 503, Framingham, Massachusetts 01701.

Q.   On whose behalf are you submitting this direct testimony?

A.   I am submitting this direct testimony before the Florida Public Service Commission ("Commission") on behalf of Tampa Electric Company, referred to throughout my testimony as "Tampa Electric," or the "Company."

Q.   Please describe your educational background.

A.   I hold a Bachelor's degree in Business and Economics from the University of Delaware, and an MBA with a

1 concentration in Finance from the University of

2 Massachusetts. I also hold the Chartered Financial

3 Analyst designation.

4

5 Q. Please describe your experience in the energy and utility

6 industries.

7

8 A. I have worked in regulated industries for over 25 years,

9 having served as an executive and manager with consulting

10 firms, a financial officer of a publicly-traded natural

11 gas utility (at the time, Bay State Gas Company), and an

12 analyst at a telecommunications utility. In my role as a

13 consultant, I have advised numerous energy and utility

14 clients on a wide range of financial and economic issues

15 including corporate and asset-based transactions, asset

16 and enterprise valuation, transaction due diligence, and

17 strategic matters. As an expert witness, I have provided

18 testimony in approximately 100 proceedings regarding

19 various financial and regulatory matters before numerous

20 state utility regulatory agencies and the Federal Energy

21 Regulatory Commission. A summary of my professional and

22 educational background, including a list of my testimony

23 in prior proceedings, is included in Attachment A to my

24 direct testimony.

25

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my direct testimony is to present evidence and provide the Commission with a recommendation regarding the Company's return on equity ("ROE")[1] and to provide my determinations and opinions regarding the reasonableness of Tampa Electric's capital structure. My analyses and conclusions are supported by the data presented in Document Nos. 1 through 13 of my exhibit, which have been prepared by me or under my direction.

Q. What are your conclusions regarding the appropriate Cost of Equity for the Company?

A. My analyses indicate that the Company's Cost of Equity currently is in the range of 10.50 percent to 11.50 percent. Based on the quantitative and qualitative analyses discussed throughout my direct testimony, I conclude that the Cost of Equity for Tampa Electric is 11.25 percent.

Q. Please provide a brief overview of the analyses that led to your ROE recommendation.

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[1] Throughout my testimony, I interchangeably use the terms "ROE" and "Cost of Equity."

1   **A.**   As discussed in more detail in Section VI, in light of

2   recent market conditions, and given the fact that equity

3   analysts and investors tend to use multiple methodologies

4   in developing their return requirements, it is important

5   to consider the results of several analytical approaches

6   in determining the Company's ROE. In order to develop my

7   ROE recommendation, I therefore applied the Constant

8   Growth Discounted Cash Flow ("DCF") model, the Capital

9   Asset Pricing Model ("CAPM"), and the Bond Yield Plus

10   Risk Premium ("Risk Premium") approach. In addition to

11   those analyses, it is important to consider a range of

12   factors, both quantitative and qualitative, in arriving

13   at an ROE determination.

14

15   In addition to the methodologies noted above, my

16   recommendation also takes into consideration: (1) the

17   incremental risks associated with the Company's need to

18   fund substantial capital expenditures; and (2) flotation

19   costs associated with equity issuances. While I did not

20   make any explicit adjustments to my ROE estimates for

21   those factors, I did take them into consideration in

22   determining the Company's Cost of Equity.

23

24   **Q.**   How is the remainder of your direct testimony organized?

25

1   **A.**   The remainder of my direct testimony is organized as

2   follows:

3

4   Section III - Provides a summary of my conclusions and

5   recommendations;

6   Section IV - Discusses the regulatory guidelines and

7   financial considerations pertinent to the development of

8   the cost of capital;

9   Section V - Explains my selection of the proxy group of

10   electric utilities used to develop my analytical results;

11   Section VI - Explains my analyses and the analytical

12   bases for my ROE recommendation;

13   Section VII - Provides a discussion of specific business

14   risks that have a direct bearing on the Company's Cost of

15   Equity;

16   Section VIII - Highlights the current capital market

17   conditions and the effect of those conditions on the

18   Company's Cost of Equity;

19   Section IX - Addresses the reasonableness of the

20   Company's proposed capital structure; and

21   Section X - Summarizes my conclusions and

22   recommendations.

23

24 **III. SUMMARY OF CONCLUSIONS**

25 **Q.**   What are the key factors considered in your analyses and

1   upon which you base your recommended ROE?

2

3   **A.**   My analyses and recommendations considered the following:

4   • The *Hope* and *Bluefield* decisions[2] that established the

5   standards for determining a fair and reasonable allowed

6   return on equity including: consistency of the allowed

7   return with other businesses having similar risk;

8   adequacy of the return to provide access to capital and

9   support credit quality; and that the end result must

10   lead to just and reasonable rates.

11   • The effect of the current capital market conditions on

12   investors' return requirements, and in particular, the

13   Company's accelerating need to access the capital

14   markets.

15   • The Company's business risks relative to the proxy

16   group of comparable companies and the implications of

17   those risks in arriving at the appropriate ROE.

18

19   **Q.**   What are the results of your analyses?

20

21   **A.**   The results of my analyses are summarized in Document No.

22   1 of my exhibit. Based on the analytical results, and in

23   light of the considerations discussed throughout the

24   balance of my direct testimony regarding the Company's

25   business risks relative to the proxy group, it is my view

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[2] See *Bluefield Waterworks & Improvement Co. v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923); See also *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

1   that a reasonable range of estimates is from 10.50

2   percent to 11.50 percent, and within that range, I

3   conclude that the Cost of Equity for Tampa Electric is

4   11.25 percent.

5

IV. REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS

7   **Q.** Please provide a brief summary of the guidelines

8   established by the United States Supreme Court (the

9   "Court") for the purpose of determining the Return on

10   Equity.

11

12 **A.** The Court established the guiding principles for

13   establishing a fair return for capital in two cases: (1)

14   *Bluefield Water Works and Improvement Co. v. Public*

15   *Service Comm'n of West Virginia* ("*Bluefield*"); and

16   (2) *Federal Power Comm'n v. Hope Natural Gas Co.*

17   ("*Hope*"). In *Bluefield*, the Court stated:

18   A public utility is entitled to such rates as

19   will permit it to earn a return on the value of

20   the property which it employs for the

21   convenience of the public equal to that

22   generally being made at the same time and in

23   the same general part of the country on

24   investments in other business undertakings

25   which are attended by corresponding risks and

uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[3]

The Court, therefore, has recognized that: (1) a regulated public utility cannot remain financially sound unless the return it is allowed to earn on its invested capital is at least equal to the cost of capital (the principle relating to the demand for capital; and (2) a regulated public utility will not be able to attract capital if it does not offer investors an opportunity to earn a return on their investment equal to the return they expect to earn on other investments of similar risk (the principle relating to the supply of capital).

In *Hope*, the Court reiterated the financial integrity and capital attraction principles of the *Bluefield* case:

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[3] *Bluefield Water Works and Improvement Co. v. Public Service Comm'n of West Virginia*, 262 U.S. 679, 692 (1923).

From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[4]

In summary, the Court clearly has recognized that the fair rate of return on equity should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the Company's financial integrity; and (3) adequate to maintain and support the Company's credit and to attract capital.

Q. Does the Florida Commission provide similar guidance?

A. Yes, the Commission upholds the precedents of the *Hope*

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[4] *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944.

1   and *Bluefield* cases.   In numerous cases, including Tampa

2   Electric's most recent rate proceeding, the Commission

3   found that the authorized ROE "satisfies the standards

4   set forth in the *Hope* and *Bluefield* decisions of the U.S.

5   Supreme Court regarding a fair and reasonable return for

6   the provision of regulated service."[5]

7

8 **Q.** Aside from the standards established by the Commission

9   and the courts, is it important for a public utility to

10   be allowed the opportunity to earn a return that is

11   adequate to attract equity capital at reasonable terms?

12

13 **A.** Yes, it is. A return that is adequate to attract capital

14   at reasonable terms, under varying market conditions,

15   will enable the subject utility to provide safe and

16   reliable electric service while maintaining its financial

17   integrity. While the "capital attraction" and "financial

18   integrity" standards are important principles in normal

19   economic conditions, the practical implications of those

20   standards are even more pronounced when, as with Tampa

21   Electric, the subject company has substantial capital

22   expenditure plans.   As discussed in more detail in

23   Section VIII, sustained increases in the incremental

24   spread on utility debt (*i.e.*, the difference in debt

25   yields of utilities varying credit ratings) has

---

[5]   Order No. PSC 09-0283-FOF-EI, Docket No. 080317-EI, at 48.

1   intensified the importance of maintaining a strong

2   financial profile; the incremental cost of a downgrade in

3   bond rating is more expensive now than it historically

4   has been.[6]   Consequently, preserving Tampa Electric's

5   current credit profile is an important consideration in

6   enabling the Company to access the capital markets, as

7   needed and at reasonable cost rates.

8

9 **V. PROXY GROUP SELECTION**

10 **Q.**   As a preliminary matter, why is it necessary to select a

11   group of proxy companies to determine the Cost of Equity

12   for Tampa Electric?

13

14 **A.**   It is important to bear in mind that the Cost of Equity

15   for a given enterprise depends on the risks attendant to

16   the business in which the company is engaged. According

17   to financial theory, the value of a given company is

18   equal to the aggregate market value of its constituent

19   business units. The value of the individual business

20   units reflects the risks and opportunities inherent in

21   the business sectors in which those units operate. In

22   this proceeding, we are focused on estimating the Cost of

23   Equity for Tampa Electric, which is an operating

24   subsidiary of TECO Energy, Inc. ("TECO Energy"). Since

25   the ROE is a market-based concept and Tampa Electric is

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[6]   *See* Section VIII, and Document No. 10.

11

1   not a publicly traded entity, it is necessary to

2   establish a group of companies that are both publicly

3   traded and reasonably comparable to the Company in

4   certain fundamental respects to serve as its "proxy" in

5   the ROE estimation process.

6

7   Even if Tampa Electric were a publicly traded entity, it

8   is possible that short-term events could bias its market

9   value in one way or another during a given period of

10 time.   A significant benefit of using a proxy group,

11 therefore, is that it serves to moderate the effects of

12 anomalous, temporary events that may be associated with

13 any one company.

14

15 **Q.**   Does the selection of a proxy group suggest that

16 analytical results will be tightly clustered around

17 average (*i.e.*, mean) results?

18

19 **A.**   Not necessarily. The DCF approach is based on the theory

20 that a stock's current price represents the present value

21 of its future expected cash flows. The Constant Growth

22 form of the DCF model is defined as the sum of the

23 expected dividend yield and projected long-term growth.

24 Notwithstanding the care taken to ensure risk

25 comparability, market expectations with respect to future

1   risks and growth opportunities will vary from company to

2   company.   Therefore, even within a group of similarly

3   situated companies, it is common for analytical results

4   to reflect a seemingly wide range.   At issue, then, is

5   how to estimate a company's ROE from within that range.

6   That determination necessarily must be based on the

7   informed judgment and experience of the analyst.

8

9 **Q.** Please provide a summary profile of Tampa Electric.

10

11 **A.** Tampa Electric provides electric generation, transmission

12   and distribution services in West Central Florida to

13   approximately 687,000 customers.[7]   Tampa Electric's

14   current long-term issuer credit ratings are BBB+

15   (outlook: Stable) by S&P, A3 (outlook: Stable) by Moody's

16   Investors Service ("Moody's"), and BBB+ (outlook: Stable)

17   by Fitch.   Tampa Electric's current senior unsecured

18   credit ratings are BBB+ by S&P, A3 by Moody's, and A- by

19   Fitch.[8]

20

21 **Q.** How did you select the companies included in your proxy

22   group?

23

24 **A.** With the objective of selecting a proxy group that is

25   highly representative of the risks and prospects faced by

---

[7]   *See* TECO Energy Inc., 2012 SEC Form 10-K, at 5.
[8]   Source: SNL Financial.

13

Tampa Electric, I used the following criteria:

- I began with the universe of companies that Value Line classifies as Electric Utilities, which includes a group of 49 domestic U.S. utilities;

- I excluded companies that do not consistently pay quarterly cash dividends;

- All of the companies in my proxy group have been covered by at least two utility industry equity analysts;

- All of the companies in my proxy group have investment grade senior bond and/or corporate credit ratings from S&P;

- I only selected proxy companies that are vertically integrated utilities (*i.e.*, utilities that own and operate regulated generating assets);

- I excluded companies whose regulated operating income over the three most recently reported fiscal years comprised less than 60.00 percent of the respective totals for that company;

- I excluded companies whose regulated electric operating income over the three most recently reported fiscal years represented less than 90.00 percent of total regulated operating income;

- I excluded companies whose coal-fired generation

14

1   constituted less than 10.00 percent of net generation;

2   and

3   • I eliminated companies that are currently known to be

4   party to a merger, or other significant transaction.

5

6 **Q.**   Did you include TECO Energy in your analysis?

7

8 **A.**   No, in order to avoid the circular logic that otherwise

9   would occur, it has been my consistent practice to

10   exclude the subject company (or its parent) from the

11   proxy group.

12

13 **Q.**   What companies met those screening criteria?

14

15 **A.**   The criteria discussed above resulted in an initial proxy

16   group of the following thirteen companies: American

17   Electric Power Company, Inc.; Cleco Corporation; Edison

18   International; Empire District Electric Company; Great

19   Plains Energy Inc.; IDACORP, Inc.; Integrys Energy Group,

20   Inc.; Otter Tail Corporation; Pinnacle West Capital

21   Corp.; PNM Resources, Inc.; Portland General Electric

22   Company; Southern Company; and Westar Energy, Inc.

23

24 **Q.**   Is this your final proxy group?

25

1   **A.**   No, it is not. I examined the operating profile of each

2   of the thirteen companies that met my initial screens to

3   be certain that none displayed characteristics that were

4   inconsistent with my intent to produce a proxy group that

5   is fundamentally similar to the Tampa Electric. As a

6   result, I excluded two companies based on recently

7   published 2011 financial information. First, Edison

8   International experienced significant unregulated

9   operating losses in 2009 and 2011. In 2009, those

10   operating losses were the result of a global tax

11   settlement and payment to the Internal Revenue Service

12   ("IRS"), which caused the company's unregulated marketing

13   and trading segment to incur over $1.00 billion in

14   payments to settle a claim with the IRS.[9] In 2011, Edison

15   International recorded a loss of $1.09 billion in its

16   competitive power generation segment[10] resulting from an

17   after-tax earnings charge (recorded in the fourth quarter

18   of 2011) relating to the impairment of its Homer City,

19   Fisk, Crawford and Waukegan power plants, wind related

20   charges, and other expenses.[11] Lastly, on December 17,

21   2012, Edison Mission Energy, a wholly owned subsidiary of

22   Edison International, filed for bankruptcy protection

23   under Chapter 11 of the U.S. Bankruptcy Code.[12]

24

25   In addition, Integrys Energy Group, Inc. ("Integrys")

---

[9]   *See* Edison International, 2009 SEC Form 10-K, at 129.
[10] *See* Edison International, 2011 SEC Form 10-K, at 53.
[11] *Ibid.*, at 54.
[12] *See* SNL Financial, "Edison Mission files Chapter 11 reorganization plan," December 17, 2012.

1   experienced a 2009 operating loss of $114.6 million in

2   its Natural Gas Utility Segment due primarily to a

3   non-cash goodwill impairment loss of $284.6 million.[13]

4   Given that (1) Integrys' operating results since 2009

5   indicate that its gas utility operations consistently

6   comprise approximately 50.00 percent of total regulated

7   income, and (2) the company's 2009 results may not

8   necessarily reflect its current and future operations, I

9   have excluded Integrys from the proxy group.

10

11   **Q.** Based on the criteria and issues discussed above, what is

12   the composition of your proxy group?

13

14   **A.** The final proxy group is comprised of the following

15   eleven companies: American Electric Power Company, Inc.;

16   Cleco Corporation; Empire District Electric Company;

17   Great Plains Energy Inc.; IDACORP, Inc.; Otter Tail

18   Corporation; Pinnacle West Capital Corp.; PNM Resources,

19   Inc.; Portland General Electric Company; Southern

20   Company; and Westar Energy, Inc.

21

22   **VI. COST OF EQUITY ESTIMATION**

23   **Q.** Please briefly discuss the ROE in the context of the

24   regulated rate of return.

25

---

[13]   *See* Integrys, 2009 SEC Form 10-K, at 35.

17

1   **A.**   In Florida, regulated utilities use common stock,

2   long-term debt, and other sources of capital to finance

3   their permanent property, plant, and equipment. The

4   overall rate of return ("ROR") for a regulated utility is

5   based on its weighted average cost of capital, in which

6   the cost rates of the individual sources of capital are

7   weighted by their respective book values. While the cost

8   of debt and other sources of capital can be directly

9   observed, the Cost of Equity is market-based and,

10   therefore, must be estimated based on observable market

11   information.

12

13   **Q.**   How is the required ROE determined?

14

15   **A.**   The required ROE is estimated by using one or more

16   analytical techniques that rely on market-based data to

17   quantify investor expectations regarding required equity

18   returns, adjusted for certain incremental costs and

19   risks. By their very nature, quantitative models produce

20   a range of results from which the market required ROE

21   must be estimated. As discussed throughout my direct

22   testimony, that estimation must be based on a

23   comprehensive review of relevant data and information.

24   This estimation does not necessarily lend itself to a

25   strict mathematical solution. Consequently, the key

1   consideration in determining the Cost of Equity is to

2   ensure that the methodologies employed reasonably reflect

3   investors' view of the financial markets in general and

4   the subject company (in the context of the proxy group)

5   in particular.

6

7 **Q.**   What methods did you use to estimate the Company's Cost

8   of Equity?

9

10 **A.**   I used the Constant Growth DCF model as my initial

11   approach and considered the results of the CAPM and Risk

12   Premium approach in developing my ROE recommendation. In

13   light of the capital market conditions discussed in

14   Section VIII, I have relied primarily on the Constant

15   Growth DCF model, and used the CAPM and Risk Premium

16   approaches as corroborating methodologies in arriving at

17   my ROE recommendation.

18

19 **Q.**   Why do you believe it is important to use more than one

20   analytical approach?

21

22 **A.**   Because the Cost of Equity is not directly observable, it

23   must be estimated based on both quantitative and

24   qualitative information. As a result, a number of models

25   have been developed to estimate the Cost of Equity. As a

practical matter, however, all of the models available for estimating the Cost of Equity are subject to limiting assumptions or other methodological constraints. Consequently, many finance texts recommend using multiple approaches when estimating the Cost of Equity.[14] When faced with the task of estimating the Cost of Equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed and, therefore, are inclined to rely on multiple analytical approaches.

In essence, practitioners and academics recognize that financial models simply are tools to be used in the ROE estimation process, and that strict adherence to any single approach, or to the specific results of any single approach, can lead to flawed or misleading conclusions. That position is consistent with the *Hope* and *Bluefield* principle that it is the analytical result, as opposed to the methodology, that is controlling in arriving at ROE determinations. Thus, a reasonable ROE estimate appropriately considers alternate methodologies and the reasonableness of their individual and collective results.

Consequently, it is both prudent and appropriate to use

---

[14] See, for example, Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed., 1994, at 341, and Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd ed., 2000, at 214.

1   multiple methodologies in order to mitigate the effects

2   of assumptions and inputs associated with relying

3   exclusively on any single approach. Such use, however,

4   must be tempered with due caution as to the results

5   generated by each individual approach.

6

7   *Constant Growth DCF Model*

8   **Q.** Are DCF models widely used in regulatory proceedings?

9

10 **A.** Yes, in my experience the Constant Growth DCF model is

11 widely recognized in regulatory proceedings, as well as

12 in financial literature. Nonetheless, neither the DCF

13 nor any other model should be applied without

14 considerable judgment in the selection of data and the

15 interpretation of results.

16

17 **Q.** Please describe the DCF approach.

18

19 **A.** The DCF approach is based on the theory that a stock's

20 current price represents the present value of all

21 expected future cash flows. In its simplest form, the

22 DCF model expresses the Cost of Equity as the sum of the

23 expected dividend yield and long-term growth rate, and is

24 expressed as follows:

25

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

where P represents the current stock price, $D_1 \ldots D_\infty$ represent expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D_0 \ (1+g)}{P} + g \quad [2]$$

Equation [2] often is referred to as the "Constant Growth DCF" model, in which the first term is the expected dividend yield and the second term is the expected long-term annual growth rate.

Q. What assumptions are inherent in the Constant Growth DCF model?

A. The Constant Growth DCF model assumes: (1) a constant average annual growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings multiple; and (4) a discount rate greater than the expected growth rate.

Q. What market data did you use to calculate the dividend

22

1   yield component of your DCF model?

2

3   **A.**   The dividend yield is based on the proxy companies'

4   current annualized dividend, and average closing stock

5   prices over the 30, 90, and 180-trading day periods as of

6   February 15, 2013.

7

8   **Q.**   Why did you use three averaging periods to calculate an

9   average stock price?

10

11 **A.**   I did so to ensure that the model's results are not

12   skewed by anomalous events that may affect stock prices

13   on any given trading day. At the same time, the

14   averaging period should be reasonably representative of

15   expected capital market conditions over the long term.

16   In my view, the use of the 30-, 90-, and 180-day

17   averaging periods reasonably balances those concerns.

18

19 **Q.**   Did you make any adjustments to the dividend yield to

20   account for periodic growth in dividends?

21

22 **A.**   Yes, I did. Since utility companies tend to increase

23   their quarterly dividends at different times throughout

24   the year, it is reasonable to assume that dividend

25   increases will be evenly distributed over calendar

1   quarters.   Given that assumption, it is appropriate to

2   calculate the expected dividend yield by applying one-

3   half of the long-term growth rate to the current dividend

4   yield.[15]   That adjustment ensures that the expected

5   dividend yield is, on average, representative of the

6   coming twelve-month period, and does not overstate the

7   dividends to be paid during that time.

8

9 Q.   Is it important to select appropriate measures of long-

10   term growth in applying the DCF model?

11

12 A.   Yes.   In its Constant Growth form, the DCF model (*i.e.*,

13   as presented in Equation [2] above on page 22 of my

14   direct testimony) assumes a single growth estimate in

15   perpetuity.   In order to reduce the long-term growth rate

16   to a single measure, one must assume a constant payout

17   ratio, and that earnings per share, dividends per share,

18   and book value per share all grow at the same constant

19   rate.   Over the long term, however, dividend growth can

20   only be sustained by earnings growth.   It is important,

21   therefore, to incorporate a variety of measures of long-

22   term earnings growth into the Constant Growth DCF model.

23

24 Q.   Please summarize your inputs to the Constant Growth DCF

25   model.

---

[15]   *See* Document No. 2.

A. I applied the DCF model to the proxy group of integrated electric utility companies using the following inputs for the price and dividend terms:

1. The average daily closing prices for the 30-trading days, 90-trading days, and 180-trading days ended February 15, 2013, for the term P_0; and

2. The annualized dividend per share as of February 15, 2013, for the term D_0.

I then calculated my DCF results using each of the following growth terms:

1. The Zacks consensus long-term earnings growth estimates;

2. The First Call consensus long-term earnings growth estimates; and

3. The Value Line long-term earnings growth estimates.

Q. How did you calculate the high and low DCF results?

A. I calculated the proxy group mean and median high DCF results using the maximum EPS growth rate as reported by Value Line, Zack's, and First Call for each proxy group company in combination with the dividend yield for each of the proxy group companies. The proxy group mean and median high results then reflect the average maximum DCF

result for the proxy group as a whole. I used a similar approach to calculate the proxy group mean and median low results using instead the minimum growth rate as reported by Value Line, Zack's, and First Call for each proxy group company. However, the mean and median low results are below reasonable estimates of investors' required rate of return for investment in vertically integrated electric utilities of comparable risk to Tampa Electric. Of the 1,392 rate cases since 1980 that disclosed the awarded ROE, for example, only one included an authorized ROE of 9.00 percent or lower.[16] On that basis alone, the mean low results are highly improbable. As such, I did not give those estimates any weight in arriving at my ROE range and recommendation.

Q. What are the results of your DCF analysis?

A. My Constant Growth DCF results are summarized in Document No. 2 of my exhibit. The mean DCF results for my proxy group are 10.60 percent, 10.69 percent, and 10.70 percent for the 30-, 90-, and 180-trading day periods, respectively. The median DCF results for my proxy group are 10.84 percent, 10.86 percent, and 10.81 percent for the 30-, 90-, and 180-trading day periods, respectively. The mean high DCF results for the 30-, 90-, and 180-day

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[16] *See* Document No. 6.

averaging periods are 13.09 percent, 13.18 percent, and 13.19 percent, respectively; and the median high DCF results for the 30-, 90-, and 180-day averaging periods are 11.45 percent, 11.47 percent, and 11.42 percent, respectively.[17]

Q.   Did you undertake any additional analyses to support your recommendation?

A.   Yes.   As noted earlier, I also applied the CAPM and Risk Premium analysis as corroborating methodologies in arriving at my ROE recommendation.

CAPM Analysis

Q.   Please briefly describe the general form of the CAPM analysis.

A.   The CAPM analysis is a risk premium approach that estimates the Cost of Equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security).   As shown in Equation [3], the CAPM is defined by four components, each of which theoretically must be a forward-looking estimate:

---

[17]   DCF results are unadjusted (*i.e.*, prior to any adjustment for flotation costs).

$$k = r_f + \beta\left(r_m - r_f\right) \text{ [3]}$$

Where:

k = the required market ROE;

β = Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

In Equation [3], the term $(r_m - r_f)$ represents the Market Risk Premium.[18] According to the theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities to their investment portfolio, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by the Beta coefficient, which is defined as:

$$\beta_j = \frac{\sigma_j}{\sigma_m} \; x \; \rho_{j,m} \text{ [4]}$$

where σ_j is the standard deviation of returns for company "j," σ_m is the standard deviation of returns for the broad market (as measured, for example, by the S&P 500 Index), and $\rho_{j,m}$ is the correlation of returns in between company j and the broad market. Thus, the Beta coefficient represents both relative volatility (*i.e.*, the standard deviation) of returns, and the correlation in returns between the subject company and the overall market.

---

[18] The Market Risk Premium is defined as the incremental return of the market over the risk-free rate.

28

1 **Q.** Has the CAPM been affected by recent economic conditions?

2

3 **A.** Yes, recent economic conditions have affected all three

4 components of the model. First, as noted above, the

5 risk-free rate, "r_f," in the CAPM formula is represented

6 by the yield on long-term U.S. Treasury securities. As

7 discussed in Section VIII (below), during periods of

8 increased equity market volatility investors tend to

9 allocate their capital to low-risk securities such as

10 Treasury bonds. In addition, since the 2008 Lehman

11 Brothers bankruptcy filing, the Federal Reserve has

12 focused on maintaining low long-term interest rates.

13 Consequently, the first term in the model (*i.e.* the risk-

14 free rate) is lower than it would have been absent the

15 elevated degree of risk aversion and government

16 intervention that has, at least in part, resulted in

17 historically low Treasury yields.

18

19 However, the capital markets continue to change, by some

20 measures quite significantly. For example, in the 90

21 trading days ended February 15, 2013, the 30-year

22 Treasury yield ranged from a low of 2.72 percent to a

23 high of 3.23 percent.[19] In that regard, it is important

24 to recognize that several capital market indices may

25 continue to be quite volatile.

---

[19] 30-year Treasury yield range is based on daily data reported by the Federal Reserve at www.federalreserve.gov

1   Finally, as a result of the extraordinary loss in equity

2   values during 2008, the Market Risk Premium, when

3   measured on a historical basis, actually decreased from

4   the prior year, even though other measures of risk

5   sentiment, in particular market volatility, indicated

6   extremely high levels of risk aversion. That result is,

7   of course, counter-intuitive. While the subsequent

8   market rally resulted in a somewhat higher historical

9   average Market Risk Premium, it still remains below its

10   pre-financial crisis level.

11

12 **Q.** With those observations in mind, what assumptions did you

13   include in your CAPM analysis?

14

15 **A.** Since utility assets represent long-term investments, I

16   used three different estimates of the risk-free rate

17   component of the CAPM analysis: (1) the current 30-day

18   average yield on 30-year Treasury bonds (*i.e.*, 3.12

19   percent); (2) the near-term projected 30-year Treasury

20   yield (*i.e.*, 3.25 percent);[20] and (3) the long-term

21   projected 30-year Treasury yield (*i.e.*, 5.10 percent).[21]

22

23 **Q.** What Market Risk Premium did you use in your CAPM

24   analysis?

25

---

[20] *See* Blue Chip Financial Forecasts, Vol. 32, No. 2, February 1, 2013, at 2. Consensus projections of the 30-year Treasury yield for the six quarters ending December 2013.

[21] *See* Blue Chip Financial Forecasts, Vol. 31, No. 12, December 1, 2012, at 14. Consensus projections of the 30-year Treasury yield for the period 2014-2023.

A. For the reasons discussed above, I did not use a historical average; rather, I developed two forward-looking (*ex-ante*) estimates of the Market Risk Premium.

Q. Please describe your first *ex-ante* approach to estimating the Market Risk Premium.

A. The first approach is based on the market required return, less the current 30-year Treasury bond yield. To estimate the market required return, I calculated the market capitalization weighted average ROE based on the Constant Growth DCF model. To do so, I relied on data from two sources: (1) Bloomberg and (2) Capital IQ. For both Bloomberg and Capital IQ, I calculated the market capitalization weighted expected dividend yield (using the same one-half growth rate assumption described earlier) and combined that amount with the market capitalization weighted projected earnings growth rate to arrive at the market capitalization weighted average DCF result. I then subtracted the current 30-year Treasury yield from that amount to arrive at the market DCF-derived *ex-ante* Market Risk Premium estimate. The results of those two calculations are provided in Document No. 3 of my exhibit.

1   **Q.**   Please now describe the second *ex-ante* approach.

2

3   **A.**   The second approach is based on the fundamental financial

4   principle that investors require higher returns as

5   compensation for higher risk. In essence, this approach

6   uses market-based data to determine whether investors

7   expect future risk to be higher, lower, or approximately

8   equal to historical market risk. To the extent the

9   market expects risk to be higher than historical levels,

10   the Market Risk Premium would be higher than historical

11   levels; the converse also is true.

12

13   In terms of its application, this approach relies on the

14   Sharpe Ratio, which is the ratio of the long-term average

15   Risk Premium for the S&P 500 Index, to the risk of that

16   index.[22] The formula for calculating the Sharpe Ratio is

17   expressed as follows:

$$S_x = \frac{(R_x - R_f)}{\sigma_x} \quad [5]$$

19   where:

20   S_x = Sharpe Ratio for security "x";

21   R_x = the average return of "x";

22   R_f = the rate of return of a risk-free security; and

23   σ_x = the standard deviation of r_x.

24

25   As shown in Document No. 3 of my exhibit, the constant

---

[22] The Sharpe Ratio is relied upon by financial professionals to assess the incremental return received for holding a risky (i.e., more volatile) asset rather than a risk-free (i.e., less volatile) asset. Risk is measured by the standard deviation of returns. That is, the higher the volatility of returns, the greater the risk.

1   Sharpe Ratio is the ratio of the historical Market Risk

2   Premium of 6.60 percent[23] (the numerator of Equation [5]

3   above) and the historical market volatility of 20.30

4   percent (the denominator of Equation [5]).[24] The expected

5   Market Risk Premium is then calculated as the product of

6   the Sharpe Ratio and the expected market volatility. For

7   the purpose of that calculation, I used the 30-day

8   average of the Chicago Board Options Exchange's ("CBOE")

9   three-month volatility index (*i.e.*, the VXV) and the

10   average of settlement prices over the same 30-day period

11   of futures on the CBOE's one-month volatility index

12   (*i.e.*, the VIX) for July 2013 through September 2013.

13   Both of those indices are market-based, observable

14   measures of investors' expectations regarding future

15   market volatility.

16

17   **Q.**   How did you apply your expected Market Risk Premium and

18   risk-free rate estimates?

19

20   **A.**   I relied on each of the *ex-ante* Market Risk Premia

21   discussed above, together with the current, near-term

22   projected, and long-term projected 30-year Treasury bond

23   yields as inputs to my CAPM analyses.

24

25   **Q.**   What Beta coefficients did you use in your CAPM model?

---

[23] The historical Market Risk Premium is provided by Morningstar as the average Risk Premium over the period 1926 through 2011 (*See*, Morningstar Inc., Ibbotson SBBI 2012 Valuation Yearbook, Large Company Stocks: Total Returns Table A-1, at 128-133).

[24] The standard deviation is calculated from data provided by Morningstar in its annual Valuation Yearbook. (*See*, Morningstar Inc., Ibbotson SBBI 2012 Valuation Yearbook, Large Company Stocks: Total Returns Table B-1, at 162-163). I recognize that the VIX forward settlement prices are liquid for approximately six to eight months; nonetheless, that data represents a market-based measure of expected volatility that should be considered in estimating the *ex-ante* Market Risk Premium.

1   **A.**   My approach includes the average reported Beta

2   coefficient from Bloomberg and Value Line for each of the

3   proxy group companies.[25] While both of those services

4   adjust their calculated (or "raw") Beta coefficients to

5   reflect the tendency of the Beta coefficient to regress

6   to the market mean of 1.00, Value Line calculates the

7   Beta coefficient over a five-year period, while

8   Bloomberg's calculation is based on two years of data.

9

10   **Q.**   What are the results of your CAPM analyses?

11

12   **A.**   The results of my CAPM analysis are summarized in

13   Document No. 5 of my exhibit. Relying on the Bloomberg

14   estimates of the Beta coefficient, the results of my CAPM

15   analysis suggest a range of returns from 7.42 percent to

16   12.16 percent with a mean result of 9.95 percent.

17   Applying the Value Line estimates of the Beta

18   coefficient, the results of my CAPM analysis produces a

19   range of results from 7.45 percent to 12.20 percent with

20   a mean result of 9.98 percent.

21

22   **Q.**   Do you believe the CAPM results provide a reasonable

23   range of ROE estimates at this time?

24

25   **A.**   Not entirely. As a practical matter, the low results are

---

[25]   *See* Document No. 4.

approximately 100 basis points below the lowest ROE ever authorized for an electric utility in at least 30 years. By that measure, the mean low results simply are not reasonable. As to the remaining results, as I discuss in Section VIII of my direct testimony, the intended consequence of continued Federal Reserve intervention in the capital markets has been to maintain long-term Treasury yields at historically low levels. Since the CAPM defines the Cost of Equity in terms of Treasury yields, the effect of those actions is to decrease, rather substantially, the CAPM estimates. The effect of that policy, however, will not continue indefinitely; consensus forecasts call for the 30-year Treasury yield to increase to 4.70 percent (from the current level of approximately 3.00 percent) in the 2014-2018 timeframe.[26]

Regarding the Sharpe Ratio Derived Market Risk Premium in particular, while measures of volatility are currently below the long-term average VIX, data based on the CBOE VIX Term Structure, which provides a longer-term view, suggests investors expect volatility to increase over the next two years, suggesting a higher Cost of Equity. On balance, then, I do not believe that the CAPM results fully reflect the appropriate range of ROE estimates.

---

[26] *See* Blue Chip Financial Forecasts, Vol. 32, No. 12, December 1, 2012, at 14.

Bond Yield Plus Risk Premium Approach

Q.   Please generally describe the Bond Yield Plus Risk Premium approach.

A.   In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with ownership and therefore require a premium over the return they would have earned as a bondholder.   That is, since returns to equity holders are more risky than returns to bondholders, equity investors must be compensated for bearing that risk.   Risk premium approaches, therefore, estimate the cost of equity as the sum of the Equity Risk Premium[27] and the yield on a particular class of bonds.   As noted in my discussion of the CAPM, since the Equity Risk Premium is not directly observable, it typically is estimated using a variety of approaches, some of which incorporate *ex-ante*, or forward-looking estimates of the cost of equity, and others that consider historical, or *ex-post*, estimates.   An alternative approach is to use actual authorized returns for electric utilities to estimate the Equity Risk Premium.

Q.   Please explain how you performed your Bond Yield Plus Risk Premium analysis.

---

[27]   The Equity Risk Premium is defined as the incremental return that an equity investment provides over a risk-free rate.

A. As discussed above, I first defined the Risk Premium as the difference between the authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yield. I also calculated the average period between the filing of the case and the date of the final order (the "lag period"). In order to reflect the prevailing level of interest rates during the pendency of the proceedings, I calculated the average 30-year Treasury yield over the average lag period (approximately 201 days).

Because the data covers a number of economic cycles,[28] the analysis also may be used to assess the stability of the Equity Risk Premium. Prior research, for example, has shown that the Equity Risk Premium is inversely related to the level of interest rates.[29] That analysis is particularly relevant given the historically low level of current Treasury yields.

Q. How did you model the relationship between interest rates and the Equity Risk Premium?

A. The basic method used was regression analysis, in which the observed Equity Risk Premium is the dependent variable, and the average 30-year Treasury yield is the independent variable. Relative to the long-term

---

[28] *See* National Bureau of Economic Research, U.S. Business Cycle Expansion and Contractions.

[29] *See, e.g.*, Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992, at 63-70; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985, at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Autumn 1995, at 89-95.

historical average, the analytical period includes interest rates and authorized ROEs that are quite high during one period (*i.e.*, the 1980s) and that are quite low during another (the post-Lehman bankruptcy period). Therefore, to account for this variability I used the semi-log regression, in which the Equity Risk Premium is expressed as a function of the natural log of the 30-year Treasury yield:

$$RP = \alpha + \beta(LN(T_{30})) \; [6]$$

As shown on Document No. 6 of my exhibit, the semi-log form is useful when measuring an absolute change in the dependent variable (in this case, the Risk Premium) relative to a proportional change in the independent variable (the 30-year Treasury yield).

As Document No. 6 of my exhibit illustrates, since 1980 there has been a statistically significant, negative relationship between the 30-year Treasury yield and the Equity Risk Premium. Consequently, simply applying the long-term average Equity Risk Premium of 4.39 percent (*see* Document No. 6 of my exhibit) would significantly understate the Cost of Equity and produce results well below any reasonable estimate. Based on the regression

1 coefficients in Document No. 6 of my exhibit, however,

2 the implied ROE is between 10.23 percent and 10.76

3 percent (*see* Document No. 6 of my exhibit).   In any

4 event, the analysis demonstrates that there has been a

5 significant inverse relationship between the 30-year

6 Treasury yield and the Equity Risk Premium.

7

8 **VII. BUSINESS RISKS AND OTHER CONSIDERATIONS**

9 **Q.** Do the mean DCF and CAPM results for the proxy group

10 provide an appropriate estimate of the Cost of Equity for

11 Tampa Electric?

12

13 **A.** No, the mean results do not necessarily provide an

14 appropriate estimate of the Company's Cost of Equity.

15 While the intent of selecting a proxy group is to select

16 companies with similar risk profiles, future risks and

17 growth opportunities will vary from company to company.

18 Even within a group of similarly situated companies, it

19 is common for analytical results to reflect a seemingly

20 wide range of results.   Therefore, in my view, there are

21 several additional factors that must be taken into

22 consideration when determining where the Company's Cost

23 of Equity falls within the range of results.   These

24 factors include the Company's planned capital investment

25 program, and the costs associated with the flotation of

1   common stock. These risk factors, which are discussed

2   below, should be considered in terms of their overall

3   effect on the Company's business risk.

4

5   **Planned Capital Expenditures**

6   Q.   Please briefly summarize the Company's capital investment

7   plans.

8

9   A.   Tampa Electric expects an annual average of approximately

10        $350 million in capital needs over the next five years to

11   support system reliability and modest customer growth.

12   In addition, the Company's Polk Power Station combined

13   cycle conversion will require an additional $610 million

14   in capital expenditures.[30] As described in the Direct

15   Testimonies of Witnesses Mark J. Hornick, Jeffrey S.

16   Chronister and S. Beth Young, Tampa Electric must finance

17   improvements to its system and meet the other capital

18   obligations required to operate a reliable and efficient

19   electric system.

20

21   Q.   Do credit rating agencies recognize risks associated with

22   increased capital expenditures?

23

24   A.   Yes, they do. From a credit perspective, the additional

25   pressure on cash flows associated with high levels of

---

[30]   See Florida Public Service Commission Order No. PSC-13-0014-FOF-EI, issued January 8,
       2013 granting determination of need for Polk 2-5 Combined Cycle Conversion.

1 capital expenditures exerts corresponding pressure on

2 credit metrics and, therefore, credit ratings. S&P has

3 noted several long-term challenges for utilities'

4 financial health including heavy construction programs to

5 address demand growth, declining capacity margins, and

6 aging infrastructure and regulatory responsiveness to

7 mounting requests for rate increases.[31] S&P further noted

8 that:

9   For regulated utilities, infrastructure spending

10   leads to rate-base growth. But for a company to

11   preserve its financial strength, it must be able

12   to quickly begin recovering this spending.

13   * * *

14   With all these incremental investments, a

15   perfect regulatory storm could arise if costs

16   for fuel and purchased gas rise sharply at the

17   same time that utilities need to raise rates to

18   recover the costs related to infrastructure

19   spending for mandated environmental upgrades,

20   new generation construction, renewable

21   requirements, or pipeline replacements. If this

22   happens, regulators could decide to allow only

23   partial recovery of incurred capital costs

24   through rate increases to reduce rate spikes for

25   customers and possibly defer the remaining

---

[31]   *See* Standard & Poor's, *Industry Report Card: Utility Sectors In the Americas Remain Stable, While Challenges Beset European, Australian, and New Zealand Counterparts*, RatingsDirect, June 27, 2008, at 4.

41

1   balance.   Because deferrals do not provide the

2   cash flow needed for utilities to service their

3   debt obligations, utility credit quality could

4   be affected. To retain critical access to the

5   debt markets, utilities will need to continue to

6   seek and receive supportive cost recovery from

7   regulators.[32]

8

9 The rating agency views are consistent with certain

10 observations discussed in Section VIII of my direct

11 testimony: (1) the benefits of maintaining a strong

12 financial profile are significant when capital access is

13 required and become particularly acute during periods of

14 market instability; and (2) the Commission's decision in

15 this proceeding will have a direct bearing on the

16 Company's credit profile and its ability to access the

17 capital needed to fund its investments.

18

19 Q. Are equity investors also concerned with comparatively

20   high levels of capital expenditures?

21

22 A. Yes, equity investors also recognize the pressure on cash

23   flows associated with relatively high levels of capital

24   expenditures.   For example, KeyBanc Capital Markets

25   ("KeyBanc") conducts a quarterly review of the electric

---

[32] Standard & Poor's, *U.S. Utilities' Capital Spending Is Rising, And Cost-Recovery Is Vital*, RatingsDirect, May 14, 2012, at 6.

utility industry.   In a recent report, KeyBanc noted that:

> While recent prices may have come off of their earlier highs due to the global economic crisis slowing construction demand, we believe the long-term trend of rising construction materials costs could resume as the global economy rebounds.   The cost of building new generation remains a moving target, as worldwide demand for construction materials commodities (steel, concrete and copper), labor and components (turbines and boilers) would remain fundamentally strong, driven by a rebound in the U.S. and Chinese economies and required compliance with future U.S. environmental regulations.   We believe this presents challenges to both unregulated and regulated investment in new generation plants. In particular, on the regulated side, there exists a chicken-and-egg problem in that securing pricing without a regulatory buy-in is as difficult as receiving regulatory pre-approval without firm pricing.[33]

---

[33] KeyBanc Capital Markets Inc., *Electric Utilities Quarterly 3Q11*, December 2011, at 17.

1 **Q.** Have you also considered the relationship between capital

2 expenditures and the earned return on common equity?

3

4 **A.** Yes, I have. The "DuPont" formula decomposes the Return

5 on Common Equity into three components: (1) the Profit

6 Margin (net income/revenues); (2) Asset Turnover

7 (revenues/net plant); and (3) the Equity Multiplier (net

8 plant/equity).[34]   As Document No. 7 of my exhibit

9 demonstrates, based on the Value Line Electric universe,

10 the Asset Turnover rate declined from 2003 through 2011

11 (the historical period covered by Value Line) and is

12 expected to decline further through Value Line's 2015 –

13 2017 projection period. Over that same period, according

14 to Value Line data, average Net Plant experienced a

15 cumulative increase of approximately 175.00 percent.

16 Since, as noted above, the utility industry is going

17 through a period of increased capital investment, the lag

18 between the addition of net plant and revenue generated

19 by those investments dilute the Asset Turnover ratio, at

20 least in the near term.

21

22 In order to gain an additional perspective on the

23 relationship between plant additions and Asset Turnover,

24 I performed a regression analysis in which the annual

25 change in the Asset Turnover rate was the dependent

---

[34]   The DuPont formula is commonly used by financial analysts to monitor specific operational and financial drivers of a company's earned ROE. The formula expands the calculation of the ROE into the product of three financial metrics: Profit Margin, Asset Turnover and the Equity Multiplier. That is, ROE = (earnings / revenue) x (revenue / assets) x (assets / equity).

44

1 variable, and the annual change in Net Plant was the

2 independent variable. As shown in Document No. 7 of my

3 exhibit, that analysis shows a statistically significant

4 negative relationship between the two variables, such

5 that as annual net plant increases, the Asset Turnover

6 ratio decreases. This, in turn, suggests that an

7 increase in capital expenditures also negatively affects

8 the Return on Common Equity, causing greater financial

9 stress to the utility. To the extent investors value a

10 company based on earnings and cash flow, this additional

11 financial strain is a key concern.

12

13 **Q.** What are your conclusions regarding the effect of the

14 Company's capital spending plans on its risk profile?

15

16 **A.** It is clear that the Company's capital expenditure

17 program is significant. It also is clear that the

18 financial community recognizes the additional risks

19 associated with substantial capital expenditures. In my

20 view, these factors suggest an ROE above the mean results

21 of the Cost of Equity analyses.

22

23 *Flotation Costs*

24 **Q.** What are flotation costs?

25

45

1 **A.** Flotation costs are the costs associated with the sale of

2 new issues of common stock. These costs include out-of-

3 pocket expenditures for preparation, filing,

4 underwriting, and other costs of issuance of common

5 stock.

6

7 **Q.** Why is it important to recognize flotation costs in the

8 allowed return on equity?

9

10 **A.** In order to attract and retain new investors, a regulated

11 utility must have the opportunity to earn a return that

12 is both competitive and compensatory. To the extent that

13 a company is denied the opportunity to recover prudently

14 incurred flotation costs, actual returns will fall short

15 of expected (or required) returns, thereby diminishing

16 its ability to attract adequate capital on reasonable

17 terms.

18

19 **Q.** Are flotation costs part of the utility's invested costs

20 or part of the utility's expenses?

21

22 **A.** Flotation costs are part of the invested costs of the

23 utility, which are properly reflected on the balance

24 sheet under "paid in capital." They are not current

25 expenses, and therefore are not reflected on the income

1   statement. Rather, like investments in rate base or the

2   issuance costs of long-term debt, flotation costs are

3   incurred over time. As a result, the great majority of a

4   utility's flotation costs are incurred prior to the test

5   year, but remain part of the cost structure that exists

6   during the test year and beyond and, as such, should be

7   recognized for ratemaking purposes. Therefore, recovery

8   of flotation costs is appropriate even if no new

9   issuances are planned in the near future because failure

10   to allow such cost recovery may deny the Company the

11   opportunity to earn its required rate of return in the

12   future.

13

14 **Q.**   Is the need to consider flotation costs eliminated

15   because the Company is a subsidiary of TECO Energy?

16

17 **A.**   No. Although the Company is a wholly-owned subsidiary of

18   TECO Energy, it is appropriate to consider flotation

19   costs because wholly-owned subsidiaries receive equity

20   capital from their parents and provide returns on the

21   capital that roll up to the parent, which is designed to

22   attract and raise capital based on the returns of those

23   subsidiaries. To deny recovery of issuance costs

24   associated with the capital that is invested in the

25   subsidiaries ultimately will penalize the investors that

1 fund the utility operations and will inhibit the

2 utility's ability to obtain new equity capital at a

3 reasonable cost.

4

5 **Q.** Does the DCF model or the CAPM already incorporate

6 investor expectations of a return that compensates for

7 flotation costs?

8

9 **A.** No. All the models used to estimate the appropriate ROE

10 assume no "friction" or transaction costs, as these costs

11 are not reflected in the market price (in the case of the

12 DCF model) or risk premium (in the case of the CAPM).

13 Therefore, it is appropriate to consider flotation costs

14 when determining where within the range of reasonable

15 results the Company's return should fall.

16

17 **Q.** Is the need to consider flotation costs recognized by the

18 academic and financial communities?

19

20 **A.** Yes. Several economists have recognized that the

21 flotation cost adjustment is made not to reflect current

22 or future financing costs, but rather to compensate

23 investors for costs incurred for all past issuances

24 comprising the total equity portion of the Company's

25 capitalization. An article in *The Journal of Finance*,

48

1   for example, observed that:

3   Under the conventional approach, in other

4   words, the flotation cost adjustment is not

5   made to reflect current or future financing

6   costs…. [I]t is made to compensate investors

7   for costs incurred in *preceding* stock issues.[35]

9   The need to reimburse for equity issuance costs is

10 justified by the academic and financial communities in

11 the same spirit that investors are reimbursed for the

12 costs of issuing debt. This treatment is consistent with

13 the philosophy of a fair rate of return. According to

14 Dr. Shannon Pratt, an expert in the field of business

15 valuation:

17   Flotation costs occur when a company issues new

18   stock. The business usually incurs several

19   kinds of flotation or transaction costs, which

20   reduce the actual proceeds received by the

21   business. Some of these are direct out-of-

22   pocket outlays, such as fees paid to

23   underwriters, legal expenses, and prospectus

24   preparation costs. Because of this reduction

25   in proceeds, the business's required returns

---

[35]   Patterson, Cleveland S., *Flotation Cost Allowance in Rate of Return Regulation: Comment*, The Journal of Finance, Vol. XXXVIII, No. 4, September 1983, at 1337 [Clarification added].

1   must be greater to compensate for the

2   additional costs. Flotation costs can be

3   accounted for either by amortizing the cost,

4   thus reducing the net cash flow to discount, or

5   by incorporating the cost into the cost of

6   equity capital. Since flotation costs

7   typically are not applied to operating cash

8   flow, they must be incorporated into the cost

9   of equity capital.[36]

10

11 **Q.**   How did you calculate the effect of flotation cost

12   recovery?

13

14 **A.**   I modified the DCF calculation to provide a dividend

15   yield that would reimburse investors for direct issuance

16   costs. My flotation cost calculation recognizes the

17   direct costs of issuing equity that were incurred by TECO

18   Energy and the proxy group companies in their most recent

19   two common equity issuances. Based on the direct

20   issuance costs provided in Document No. 8 of my exhibit,

21   an adjustment of 0.14 percent (*i.e.,* 14 basis points)

22   reasonably represents the direct flotation costs for the

23   Company. In addition to direct issuance costs, there is

24   another indirect component to flotation costs that arises

25   from the market pressure resulting from an increase in

---

[36]   Shannon P. Pratt, Roger J. Grabowski, <u>Cost of Capital: Applications and Examples</u>, 4th ed. (John Wiley & Sons, Inc., 2010), at 586.

1   the supply of stock. As described by Dr. Roger A. Morin:

2

3   As far as the market pressure effect is

4   concerned, empirical studies clearly show that

5   the market pressure effect is real, tangible,

6   and measureable. All studies support the idea

7   that the announcement of the sale of large

8   blocks of stock produces a decline in a

9   company's stock price, as one would expect given

10   the increased supply of common stock.[37]

11

12   As to the total flotation costs, "allowing for market

13   pressure costs raises the flotation cost allowance for

14   stock issues to well above 5%."[38]   Based on a total

15   flotation cost of 5.00 percent, an adjustment of 0.22

16   percent (*i.e.*, 22 basis points) reasonably represents the

17   total direct and indirect flotation costs for the

18   Company.

19

20 Q. Has the Commission previously recognized the need to

21   recover flotation costs?

22

23 A. The Commission recently recognized "there are costs

24   incurred when a firm issues equity and those costs should

25   be recovered within the ROE."[39]   In that case, the

---

[37]   See Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at
       323-324 [Clarification added].
[38]   *Ibid.*, at 324.
[39]   Order No. PSC 12-0179-FOF-EI, Docket No. 110138-EI, at 51.

1   Commission did not recognize a specific adjustment for

2   flotation costs, but instead "[took] into consideration

3   the witnesses' testimony and analyses regarding an

4   allowance for flotation costs." [40]

5

6   Q.   Are you proposing to adjust your recommended ROE to

7   reflect the effect of flotation costs on the Company's

8   ROE?

9

10 A.   Consistent with recent Commission practice, I am not

11   proposing a specific adjustment.   Rather, I have

12   considered the effect of flotation costs, in addition to

13   the Company's other business risks, in determining where

14   its ROE falls within the range of results.

15

16 **VIII. CAPITAL MARKET ENVIRONMENT**

17 Q.   Do economic conditions influence the required cost of

18   capital and required return on common equity?

19

20 A.   Yes.   As discussed in Section VI, the models used to

21   estimate the Cost of Equity are meant to reflect, and

22   therefore are influenced by, current and expected capital

23   market conditions.

24

25 Q.   Have you reviewed any specific indices to assess the

---

[40]   *Ibid.*

52

1   relationship between current market conditions and

2   investor return requirements?

3

4 **A.** Yes, I considered several measures of capital market

5   risk, including: (1) the relationship between treasury

6   yields and the Cost of Equity; (2) incremental credit

7   spreads on investment grade utility debt; and (3) the

8   relationship between electric utility dividend yields and

9   long-term Treasury yields. As discussed below, each of

10   those measures provide information that is relevant to

11   the implementation of models used to estimate the Cost of

12   Equity, and in the interpretation of the model results.

13

14 ***Relationship Between Historically Low Treasury Yields and the***

15 ***Cost of Equity***

16 **Q.** As a preliminary matter, has the cost of equity fallen in

17   tandem with the recent decline in long-term treasury

18   yields?

19

20 **A.** No, it has not. The fear of taking the risks of equity

21   ownership, for example, has motivated many investors to

22   move their capital into the relative safety of Treasury

23   securities. In doing so, investors have bid down yields

24   to the point that they currently are receiving yields on

25   ten-year Treasury bonds that are below the rate of

1   inflation.[41]   In effect, those investors are willing to

2   accept a *negative* real return on Treasury bonds rather

3   than be subject to the risk of owning equity securities.

4

5   At the same time, the Federal Reserve's policy of buying

6   longer-dated Treasury securities and selling short-term

7   securities also may have had the effect of lowering long-

8   term Treasury yields.   That is, of course, the objective

9   of the Federal Reserve's "maturity extension program"

10   which began in September 2011. [42]   As the Federal Reserve

11   noted:

12

13   Under the maturity extension program, the

14   Federal Reserve intends to sell or redeem a

15   total of $667 billion of shorter-term Treasury

16   securities by the end of 2012 and use the

17   proceeds to buy longer-term Treasury

18   securities.   This will extend the average

19   maturity of the securities in the Federal

20   Reserve's portfolio.

21   ***

22   By reducing the supply of longer-term Treasury

23   securities in the market, this action should

24   put downward pressure on longer-term interest

25   rates, including rates on financial assets that

---

[41]   *See*, for example, *Treasurys Slide After Lackluster Sale*, The Wall Street Journal, August 8, 2012.

[42]   On September 13, 2012 the Federal Reserve announced that, in addition to continuing the maturity extension program announced in June, they would also begin buying mortgage-backed securities at a pace of $40 billion per month. *See* Federal Reserve Press Release, dated September 13, 2012.

1 investors consider to be close substitutes for
2 longer-term Treasury securities. The reduction
3 in longer-term interest rates, in turn, will
4 contribute to a broad easing in financial
5 market conditions that will provide additional
6 stimulus to support the economic recovery.[43]

7

8 Consequently, two factors are at work: (1) the continued
9 focus on capital preservation on the part of investors
10 has caused them to reallocate capital to the relative
11 safety of Treasury securities, thereby bidding up the
12 price and bidding down the yield; and (2) the Federal
13 Reserve's continued policy of buying long-term Treasury
14 securities in order to lower the yield. As the Federal
15 Reserve noted in its June 2012 Open Market Committee
16 meeting minutes, the effect of those two factors has been
17 a continued decline in Treasury yields:

18

19 Yields on longer-dated nominal and inflation-
20 protected Treasury securities moved down
21 substantially, on net, over the intermeeting
22 period. The yield on nominal 10-year Treasury
23 securities reached a historically low level
24 immediately following the release of the May
25 employment report. A sizable portion of the

---

[43] http://www.federalreserve.gov/monetarypolicy/maturityextensionprogram.htm

decline in longer-term Treasury rates over the period appeared to reflect greater safe-haven demands by investors, along with some increase in market participants' expectations of further Federal Reserve balance sheet actions.[44]

At issue, then, is whether those two factors – the continuing tendency of investors to seek the relative safety of long-term Treasury securities and the Federal Reserve's policy of lowering long-term Treasury yields – have caused the required return on equity to fall in a fashion similar to the recent decline in interest rates. In large measure, that issue becomes a question of whether the premium required by debt and equity investors also has remained constant as Treasury yields have decreased. To the extent that the risk premium has increased, the higher premium has offset, at least to some degree, the decline in Treasury yields, indicating that the Cost of Equity has not fallen in lock step with the decline in interest rates.

One method of performing that analysis is to analyze the implied required market return of the S&P 500 companies on a "build-up" basis. From that perspective, the required market return represents the sum of: (1) long-

---

[44] Minutes of the Federal Open Market Committee June 19-20, 2012, at 4.

term Treasury yields; (2) the credit spread (*i.e.*, the incremental return required by debt investors over Treasury yields; and (3) the Equity Risk Premium (*i.e.*, the incremental return required by equity investors over the cost of debt). As shown in Document No. 9 of my exhibit, that has been the case: both debt and equity investors have required increased risk premiums as long-term Treasury yields have fallen. In fact, this analysis demonstrates that despite Treasury yields decreasing in recent years, the overall expected market return for the S&P 500 has actually *increased*.

As discussed above, the proposition that the risk premium has increased even as Treasury yields have declined makes practical sense: as investors seek the safety of Treasury securities they require higher equity returns to overcome the currently perceived risk of equity markets vis-à-vis Treasury securities. Even if the decrease in Treasury yields is driven by investors' expectations of continued buying on the part of the Federal Reserve, that expectation does not affect the fundamental assessment of risks associated with equity investments in utility companies. If anything, the uncertainty surrounding the timing and degree of continued Federal intervention introduces an additional element of uncertainty, which

1   increases investment risk and, therefore, the required

2   return.

3

4   **Q.**   Have you reviewed specific market indices that also

5   support the position that cost of equity has not fallen

6   in tandem with long-term interest rates?

7

8   **A.**   Yes. As noted above, I have considered Incremental

9   Credit Spreads and the relationship between dividend

10   yields and Treasury yields (that is, the "Yield Spread").

11   Each of those measures, which are discussed below,

12   supports the position that the Cost of Equity has not

13   fallen in lock step with the decrease in Treasury yields.

14

15   *Incremental Credit Spreads*

16   **Q.**   How have credit spreads been affected by current market

17   conditions?

18

19   A.   The "credit spread" is the return required by debt

20   investors to take on the default risk associated with

21   securities of differing credit quality. For a given

22   credit rating, the credit spread is measured by reference

23   to a Treasury security of similar tenure. That is, the

24   credit spread on A-rated utility bonds may be measured by

25   reference to the 30-year Treasury Bond yield; the same

1   would be true of Baa-rated securities.[45]   Because lower

2   credit ratings reflect higher levels of risk, credit

3   spreads typically are higher for lower-rated securities.

4   In that regard, the "incremental credit spread" (e.g.,

5   the difference between the credit spreads associated with

6   A and Baa-rated securities) is an indication of

7   incremental return required by investors to take on

8   additional levels of risk. As my Document No. 10 of my

9   exhibit demonstrates, since the beginning of 2010, the

10   Moody's Utility Bond Index Baa/A credit spread has

11   steadily increased, indicating that debt investors have

12   increased their marginal return requirements.

13

14   It is also interesting to note that the incremental

15   credit spread has increased as long-term Treasury yields

16   have decreased.   In fact, as Document No. 11 of my

17   exhibit demonstrates, even since January 2010, changes in

18   the incremental credit spread are negatively correlated

19   with changes in the 30-year Treasury yield.

20

21 **Q.**   What are the implications of those findings in assessing

22   the Company's Cost of Equity?

23

24 **A.**   The recent decline in long-term Treasury yields has been

25   accompanied by an increase in the premium required by

[45] The minimum maturity for the bonds in this index is 20 years, with an average of 30 years. Moody's Long-Term Corporate Bond Yield Averages are derived from pricing data on a regularly replenished population of nearly 100 seasoned corporate bonds in the U.S. market, each with current outstandings over $100 million.   The bonds have maturities as close as possible to 30 years, they are dropped from the list if their remaining life falls below 20 years, if they are susceptible to redemption, or if their ratings change.   All yields are yield-to- maturity calculated on a semi-annual basis.   Each observation is an unweighted average, with Average Corporate yields representing the unweighted average of the corresponding Average Industrial and Average Public Utility observations. See Bloomberg.com.

investors to accept incremental levels of credit risk.
That is, the incremental credit spread has increased as
the level of Treasury yields have decreased. While that
inverse relationship applies to the cost of debt, prior
academic research has demonstrated that the equity risk
premium likewise is inversely related to interest rates.[46]
Consequently, neither the Cost of Equity nor the cost of
debt has decreased in lock step with Treasury yields.

Those results also demonstrate the importance of
maintaining a financial and credit profile that supports
the Company's current senior unsecured credit rating
(S&P: BBB+,   Moody's: A3,   Fitch: A-)[47].   Because
incremental credit spreads have steadily increased, the
benefit of maintaining the Company's credit rating is
greater in the current market than it has been, even over
the past two years. That conclusion is consistent with
recent findings by Fitch, which noted that:

> While it appears that the credit spread
> differential between the rating categories has
> a relatively small impact during times of
> economic stability, during recent periods of
> economic stress, a higher credit rating
> produces a meaningful difference in credit

---

[46]   Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts,* Financial Management, Summer 1992; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity,* Financial Management, Spring 1985, at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry,* Financial Management, Autumn 1995, at 89-95.
[47]   Source: SNL Financial.

1   spreads… and provides more assured access to

2   capital.[48]

3

4   Since regulatory actions affect credit ratings in

5   several, often significant ways, the Commission's

6   decision in this proceeding will directly affect the

7   Company's credit profile and influence its ability to

8   maintain a credit profile that enables continued access

9   to capital at reasonable costs. Given the Company's

10   substantial capital investment plans and external funding

11   needs, the benefits of reliable and cost-effective

12   capital access are significant.

13

14 **_Yield Spreads_**

15 **Q.** Please briefly define the term "yield spread", and

16   explain its meaning in assessing capital market

17   conditions.

18

19 **A.** The "yield spread" is the difference between the yield on

20   long-term Treasury securities on the one hand, and common

21   stock dividend yields on the other. Investors often

22   consider yield spreads in their assessment of security

23   valuation and capital market conditions. As explained

24   below, to the extent that yield spreads materially

25   deviate from long-term relationships, it may be an

---

[48]   _Fitch's Review of Utility ROE Trends_, FitchRatings, March 22, 2010, at 3.

1   indication of continuing dislocations within the capital

2   market.

3

4 **Q.**   Have you reviewed the current and historical yield spread

5   for electric utility companies?

6

7 **A.**   Yes, I have. As shown in Document No. 12 of my exhibit,

8   for much of the period from January 1, 2000 through

9   February 15, 2013, the 30-year Treasury yield has

10   exceeded the dividend yield on electric utility stocks

11   (as measured by the SNL Electric Company Index). In

12   fact, over that time, the yield spread averaged

13   approximately 58 basis points.[49] That period, however,

14   includes the 2002 – 2003 credit contraction, during which

15   the Treasury yields and utility dividend yields were

16   essentially equal, and the post-Lehman Brothers

17   bankruptcy period, during which the yields inverted, such

18   that the electric utility index dividend yield exceeded

19   the 30-year Treasury yield. Excluding those two periods,

20   the average yield spread was 129 basis points (that is,

21   on average, the 30-year Treasury yield exceeded the

22   dividend yield by 129 basis points.

23

24   As Document No. 12 of my exhibit also demonstrates, the

25   yield spread inverted shortly after the September 15,

---

[49] That is to say that on average, the 30-year Treasury yield exceeded the electric
utility dividend yield by 58 basis points.

1   2008 Lehman Brothers bankruptcy, and has essentially

2   remained inverted since that time.   In fact, since August

3   2011, the yields have remained inverted, such that the

4   SNL Electric Company Index average dividend yield

5   exceeded the 30-year Treasury yield by 97 basis points.

6   The continuing instability in the yield spread also has

7   been observed by The Wall Street Journal, which noted

8   that historically, "dividend yields have tended to track

9   the yield on 10-year Treasurys closely."[50]   The article

10 went on to note that:

11

12   Regulated utilities' dividend yields decoupled

13   from Treasury yields in December 2007, as the

14   U.S. recession began.   After the initial flight

15   to   quality   cut   yields   on   Treasurys,

16   particularly after Lehman Brothers collapsed in

17   September 2008, the Federal Reserve's policy of

18   buying up government debt has helped keep them

19   low.

20

21 **Q.**   How does such data enter into your assessment of the

22 Company's Cost of Equity?

23

24 **A.**   As noted above, investors often look to the relationships

25 among financial metrics to assess current and expected

---

[50]   Denning, Liam, A Short Circuit in the Stock Market, The Wall Street Journal, October 23, 2009, at C10.   I note that while this article referred to ten-year Treasury yields, the fundamental conclusion, that the utility yield spread has deviated from its long-term relationship, remains.

1   levels of market stability. As also noted above, to the

2   extent that current relationships among such indices

3   materially deviate from long-term norms, it may be an

4   indication of continuing or expected market instability.

5   Moreover, such data provide market-based methods by which

6   to assess the implications of the currently low Treasury

7   yields for the Company's Cost of Equity. If, for

8   example, the currently low level Treasury yields

9   indicated a correspondingly low Cost of Equity, the

10 average dividend yield would be approximately 2.54

11 percent, or lower.[51] As shown on Document No. 2 of my

12 exhibit, however, the current (proxy group) average

13 dividend yield is approximately 3.97 percent. Again, low

14 Treasury yields are not necessarily indicative of

15 correspondingly low equity return requirements.

16

17 **Q.** What conclusions do you draw from those analyses?

18

19 **A.** First, it is important to recognize the relationships

20 among financial measures relied upon by investors, and to

21 reflect those relationships in Cost of Equity estimates.

22 Simply observing, for example, that long-term Treasury

23 rates are at historically low levels is not a sufficient

24 level of analysis to conclude that the Cost of Equity is

25 at a commensurately low level. As noted above, for

---

[51] 2.54 percent equals 3.12 percent, less the long-term average yield spread of 58 basis points. Excluding the post-Lehman Brothers bankruptcy period, and the 2002 – 2003 credit contraction, implies a yield spread of 129 basis points, suggesting an implied dividend yield of less than 1.83 percent (assumes a constant growth rate), which is more than 200 basis points below the current (proxy group) average dividend yield of 3.97 percent.

1   example, if investors believed that the current level of

2   long-term Treasury yields is indicative of the Cost of

3   Equity, electric utility dividend yields would be more

4   than 200 basis points below their current levels.

5   Recognizing such factors provides a more complete

6   perspective of investor risk and enables a more

7   reasonable determination of the Cost of Equity.

8

9   Finally, assessing the results of the Cost of Equity

10   analyses described in Section VI requires interpretation

11   and judgment for the purpose of determining the Company's

12   ROE recommendation. An analysis of the capital market

13   environment provides a more complete perspective, and

14   enables a more reasoned determination of the Cost of

15   Equity.

16   **IX. CAPITAL STRUCTURE**

17   **Q.** What is the Company's proposed capital structure?

18

19   **A.** In its application filed in this docket, the Company has

20   proposed a capital structure comprised of 54.19 percent

21   common equity 45.81 percent debt.[52]

22

23   **Q.** How does the capital structure affect the cost of equity?

24

25   **A.** The capital structure should enable the subject company

---

[52] *See* Direct Testimony of Sandra W. Callahan.

1   to maintain its financial integrity, thereby enabling

2   access to capital at competitive rates under a variety of

3   economic and financial market conditions.   The capital

4   structure relates to a company's financial risk, which

5   represents the risk that a company may not have adequate

6   cash flows to meet its financial obligations, and is a

7   function of the percentage of debt (or financial

8   leverage) in its capital structure.   In that regard, as

9   the percentage of debt in the capital structure

10   increases, so do the fixed obligations for the repayment

11   of that debt.   Consequently, as the degree of financial

12   leverage increases, the risk of financial distress (*i.e.*,

13   financial risk) also increases.   Since the capital

14   structure can affect the subject company's overall level

15   of risk,[53] it is an important consideration in

16   establishing a just and reasonable rate of return.

17

18 Q. Is there support for the proposition that the capital

19   structure is a key consideration in establishing an

20   appropriate return on equity?

21

22 A. Yes.   The United States Supreme Court and various utility

23   commissions have long recognized the role of capital

24   structure in the development of a just and reasonable

25   rate of return for a regulated utility.   In particular, a

---

[53] *See* Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 45-46.

66

utility's leverage, or debt ratio, has been explicitly recognized as an important element in determining a just and reasonable rate of return:

> Although the determination of whether bonds or stocks should be issued is for management, the matter of debt ratio is not exclusively within its province. Debt ratio substantially affects the manner and cost of obtaining new capital. It is therefore an important factor in the rate of return and must necessarily be considered by and come within the authority of the body charged by law with the duty of fixing a just and reasonable rate of return.[54]

Perhaps the ultimate authority for balancing the issues of cost and financial integrity is the Supreme Court's decision in *Hope* that was cited and applied by the U.S. Court of Appeals for the D.C. Circuit in 1977:

> The rate-making process under the Act, i.e., the fixing of "just and reasonable rates, involves a balancing of the investor and the consumer interests." 320 U.S. at 603, 64 S. Ct. at 288. The equity investor's stake is made

---

[54] *New England Telephone & Telegraph Co. v. State*, 97 A.2d 213, 220 (N.H. 1953) (citing *New England Tel. & Tel. Co. v. Department of Pub. Util.*, 97 N.E. 2d 509, 514 (Mass. 1951) and *Petitions of New England Tel. & Tel. Co.*, 80 A.2d 671 (Vt. 1953)).

1   less secure as the company's debt rises, but

2   the consumer rate-payer's burden is

3   alleviated.[55]

4

5   Consequently, the principles of fairness and

6   reasonableness with respect to the allowed rate of return

7   and capital structure are considered at both the federal

8   and state levels.

9

10 **Q.** Please discuss your analysis of the capital structures of

11   the proxy group companies.

12

13 **A.** I calculated the average capital structure for each of

14   the proxy group companies over the last eight quarters.

15   As shown in Document No. 13 of my exhibit, the proxy

16   group actual capital structure common equity ratios range

17   from 47.99 percent to 57.81 percent. Based on that

18   review, it is apparent that the Company's proposed

19   capital structure is generally consistent with the

20   capital structures of the proxy group companies.

21

22 **Q.** What is the basis for using average capital components

23   rather than a point-in-time measurement?

24

25 **A.** Measuring the capital components at a particular point in

---

[55] *Communications Satellite Corp. v. FCC*, 611 F.2d 883, 904 (D.C. Cir. 1977).

1   time can skew the capital structure by the specific

2   circumstances of a particular period. Therefore, it is

3   more appropriate to normalize the relative relationship

4   between the capital components over a period of time.

5

6 **Q.**   What is your conclusion regarding the Company's proposed

7   capital structure as it relates to the Company's Cost of

8   Equity?

9

10 **A.**   Considering the average actual common equity ratio ranges

11   from of 47.99 percent to 57.81 percent for the proxy

12   group companies, I believe that Tampa Electric's proposed

13   common equity ratio of 54.19 percent is generally

14   consistent with the proxy group companies.

15

16 **X. CONCLUSIONS AND RECOMMENDATION**

17 **Q.**   What is your conclusion regarding the Company's Cost of

18   Equity?

19

20 **A.**   I believe that a rate of return on common equity in the

21   range of 10.50 percent to 11.50 percent represents the

22   range of equity investors' required rate of return for

23   investment in integrated electric utilities similar to

24   Tampa Electric in today's capital markets. Within that

25   range, I conclude that the Cost of Equity for Tampa

1   Electric is 11.25 percent My recommendation also takes

2   into consideration the Company's risk profile relative to

3   the proxy group analytical results with respect to: (1)

4   the incremental risks associated with the Company's need

5   to fund substantial capital; and (2) flotation costs

6   associated with equity issuances. As such, a rate of

7   return on common equity in the range of 10.50 percent to

8   11.50 percent reasonably represents the return required

9   to invest in a company with a risk profile comparable to

10   Tampa Electric. Document No. 1 of my exhibit summarizes

11   my analytical results.

12

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

14

15 **A.** Yes, it does.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY

OF

ROBERT B. HEVERT

ON BEHALF OF TAMPA ELECTRIC COMPANY

</div>

I. INTRODUCTION

Q. Please state your name, affiliation and business address.

A. My name is Robert B. Hevert. I am Managing Partner of Sussex Economic Advisors, LLC ("Sussex"). My business address is 161 Worcester Road, Suite 503, Framingham, Massachusetts 01701.

Q. Are you the same Robert B. Hevert who filed direct testimony in this proceeding?

A. Yes I am.

Q. Please state the purpose of your rebuttal testimony.

A. The purpose of my rebuttal testimony is to respond to the direct testimony of witness Michael P. Gorman on behalf of the Federal Executive Agencies ("FEA"); witness Richard A. Baudino on behalf of the WCF Hospital Utility

1   Alliance ("HUA"); witness Dr. J. Randall Woolridge on

2   behalf of the Florida Office of Public Counsel ("OPC");

3   and witness Steve W. Chriss on behalf of the Florida

4   Retail Federation ("FRF") (together "opposing ROE

5   witnesses") as their testimony relates to the Company's

6   Return on Equity ("ROE" or "Cost of Equity"). I also

7   respond to OPC witness Kevin W. O'Donnell's direct

8   testimony regarding the Company's capital structure.

9

10 **II. SUMMARY AND OVERVIEW**

11 **Q.** Please summarize the key issues and recommendations

12   addressed in your rebuttal testimony.

13

14 **A.** In my direct testimony, I recommended an ROE range of

15   10.50 percent to 11.50 percent and within that range,

16   recommended a return of 11.24 percent. The updated

17   analyses contained in my rebuttal testimony continue to

18   support that range and recommendation. As my direct

19   testimony noted, and as discussed throughout my rebuttal

20   testimony, my recommendations and the analytical results

21   on which they are based, consider a variety of analytical

22   results, and reflect a number of factors including

23   prevailing and expected capital market conditions. Doing

24   so is especially important when conditions have changed

25   significantly over a relatively brief period, as recently

1   has been the case.

2

3   In this proceeding, there is a meaningful difference in

4   the ranges and recommendations offered by the various ROE

5   witnesses. As my rebuttal testimony demonstrates, there

6   are a number of methodological, theoretical and practical

7   reasons why ROE recommendations as low as 8.75 percent in

8   the case of witness Woolridge, or 9.30 percent in the

9   case of witness Baudino are unreasonably low. Certain of

10   the opposing ROE witnesses, for example, develop their

11   recommendations by giving weight to ROE estimates that

12   are well below any return authorized by any regulatory

13   commission in at least 30 years. Despite the significant

14   effect of those estimates on their ROE ranges and

15   recommendations, and notwithstanding the fact that those

16   results are so low as to be highly improbable relative to

17   observed authorized returns, none of those witnesses has

18   explained why Tampa Electric is so less risky, or how it

19   is that present capital market conditions are so benign

20   that investors would reduce their return requirements far

21   below the returns available to other vertically

22   integrated utilities.

23

24   In addition, there is a relatively recent and highly

25   relevant benchmark by which ROE recommendations in this

1   proceeding can be assessed: the 10.50 percent ROE
2   authorized for Florida Power and Light ("FP&L") by the
3   Commission in Docket No. 120015-EI.[1] While my recommended
4   range (10.50 percent to 11.50 percent) coincides with
5   that return, the opposing ROE witnesses have recommended
6   ROE ranges that are substantially and unreasonably below
7   the Commission's decision. At issue, then, is whether
8   there is a reasonable basis to conclude that the return
9   required by equity investors for a vertically integrated
10   electric utility such as Tampa Electric has fallen by 120
11   basis points or more since December 2012.[2] That is
12   especially the case since visible measures of investor
13   return requirements, such as long-term interest rates,
14   have increased over that period.

16   Q. Please expand on that last point.

18   A. There is little question that both current and expected
19   long-term interest rates have increased since the
20   Commission's decision in the FP&L proceeding. On a spot
21   basis, the 30-year Treasury yield rose by 78 basis points
22   from December 12, 2012 through July 31, 2013. Similarly,
23   the Moody's A and Baa-rated Utility Bond Indices
24   increased by 82 basis points and 78 basis points,
25   respectively, over the same period (see Document No. 7 of

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[1] Florida Public Service Commission, Docket No. 120015-EI, Order No. PSC-13-0023-S-EI, at 5.

[2] Refers to the date on which the revised Stipulation and Settlement containing the 10.50 percent ROE was filed in Docket No. 120015-EI. See Order No. Order No. PSC-13-0023-S-EI, at 8. Please also see Document No. 40 of my exhibit, which notes that Regulatory Research Associates reports the decision date in that docket as December 13, 2013.

my exhibit). On a forward-looking basis, the expected 27-year Treasury yield three years hence (that is, the "forward" 27-year Treasury yield discussed below; *see* also Document 8 of my exhibit) increased by 79 basis points.

It also is the case that both current and forward interest rates have increased since the date of the analyses contained in my direct testimony (i.e., February 15, 2013). On a spot basis, the Treasury yield curve has shifted upward, with longer-term maturities experiencing the greater increases; the same holds true for forward long-term Treasury yields. Even over a more recent period, (*i.e.*, from May 1, 2013 to July 12, 2013) forward long-term Treasury yields increased by 86 basis points.[3]

Q. Is it also the case that utility dividend yields recently have increased?

A. Yes, it is. Similar to my review of interest rates, I calculated the average dividend yield for my proxy group from May 1, 2013 through July 12, 2013. As Document No. 9 of my exhibit indicates, the proxy group dividend yield increased by 23 basis points over that time.

---

[3] Forward yields were calculated as the expected long-term Treasury yield three years forward for each trading day from February 15, 2013 through July 12, 2013. That calculation is based on the "expectations" theory, which states that (for example) the current 30-year Treasury yield equals the combination of the current three-year Treasury yield, and the 27-year Treasury yield expected in three years. That is, an investor would be indifferent to (1) holding a 30-year Treasury to maturity, or (2) holding a three-year Treasury to maturity, then a 27-year Treasury bond, also to maturity. As illustrated in Document No. 8 of my exhibit since February 15, 2013, forward yields have increased by 49 basis points. *See* Document No. 8 of my exhibit.

1   **Q.**   In light of that data, what are your conclusions

2   regarding the opposing ROE witnesses' recommendations?

3

4   **A.**   From an analytical perspective, it is important that the

5   inputs and assumptions used to arrive at an ROE

6   recommendation, including assessments of capital market

7   conditions, are consistent with the recommendation,

8   itself. While I appreciate that all analyses necessarily

9   require an element of judgment, the application of that

10   judgment must be made in the context of the quantitative

11   and qualitative information available to the analyst.

12   Because the application of financial models and

13   interpretation of their results is often the subject of

14   differences among analysts in regulatory proceedings, I

15   believe that it is important to review and consider a

16   variety of data points; doing so enables us to put in

17   context both quantitative analyses and the associated

18   recommendations. In my view, the broad increase in

19   interest rates since December 2012 is a relevant data

20   point that is difficult to reconcile with the dramatic

21   decrease in returns recommended by the opposing ROE

22   witnesses.

23

24   As noted in my direct testimony, it also is important to

25   recognize that in establishing their return requirements,

investors consider a broad range of data including authorized returns from alternative jurisdictions, and current capital market data.[4] Equity investors have many options available to them, and allocate their capital based on the expected returns associated with those alternatives. While I am not suggesting that the Commission should be bound by decisions in other regulatory jurisdictions, given that investors consider such data in framing their investment decisions, return recommendations that materially deviate from observed industry norms should be supported by clear and unambiguous reasons explaining those deviations.

As discussed throughout my rebuttal testimony, there are a number of methodological, theoretical and practical reasons why recommendations as low as 8.75 percent are unreasonably low. Witness Woolridge, for example, develops his recommendation by giving weight to ROE estimates that are well below all returns authorized for vertically integrated utilities by any regulatory commission in at least 30 years.[5] Witness Baudino points to comparatively low long-term Treasury yields and concludes, by extension, that the Cost of Equity must be commensurately low.[6] As noted above, that position is at odds with observable data.

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[4] See direct testimony and Exhibit of Robert B. Hevert at 36 - 39; 52 - 65.

[5] I note that witness Dr. Woolridge's 8.75 percent DCF result is below all authorized ROEs for vertically integrated utilities since at least 1980.

[6] See direct testimony of Richard A. Baudino, at 7.

As discussed in my direct testimony, no one financial model is any more "correct" than any other method in all circumstances, and as such, it is important to consider the results of a variety of methods.[7] That observation is especially important when market conditions are such that financial models produce results that are widely divergent and highly sensitive to inputs and assumptions. Neither market conditions in general, nor the Company's situation in particular supports the proposition that Tampa Electric's Cost of Equity is far below recently authorized returns, as several of the opposing ROE witnesses assume to be the case.[8] While their recommendations may be consistent with each other, my recommended range is consistent with a broader, highly relevant set of observations: the returns available to other electric utilities (*see* Document No. 10 of my exhibit).

III. **RESPONSE TO FEA WITNESS GORMAN AS IT RELATES TO THE COMPANY'S COST OF EQUITY**

Q. Please briefly summarize witness Gorman's recommendation regarding the Company's Cost of Equity.

A. Witness Gorman recommends an ROE of 9.25 percent, within a recommended range of 9.15 percent to 9.30 percent.[9] Witness Gorman establishes his ROE recommendation by

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[7] *See* direct testimony and Exhibit of Robert B. Hevert, at 19-20.

[8] I recognize that witness Chriss considers recently authorized returns in other jurisdictions. *See* direct testimony of Steve W. Chriss, at 10.

[9] *See* direct testimony of Michael P. Gorman, at 2 and 46.

1   reference to his Constant Growth DCF analysis assuming

2   analysts' earnings growth estimates (9.16 percent to 9.40

3   percent), his Multi-Stage DCF analysis (8.89 percent),

4   and his Risk Premium analyses (9.30 percent).[10]   Witness

5   Gorman also considers his Sustainable Growth DCF model

6   results (8.14 percent to 8.30 percent), although he does

7   not place specific weight on those estimates.[11]

8   Similarly, while he performs a CAPM analysis, witness

9   Gorman places "minimal" weight on those results (8.60

10 percent).[12]

11

12 Q.   What are the principal areas in which you disagree with

13   witness Gorman?

14

15 A.   The principal areas in which I disagree with witness

16   Gorman's analyses and conclusions include: (1) the long-

17   term growth estimate used in the Constant Growth DCF

18   model; (2) the application of the Multi-Stage DCF model;

19   (3) the Market Risk Premium (the "MRP") component of the

20   CAPM and in particular, the expected market return from

21   which the MRP is calculated; (4) the assumptions and

22   methods underlying witness Gorman's Risk Premium

23   analyses; and (5) the implications of current market

24   conditions for Tampa Electric's Cost of Equity.

25

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[10]   *Ibid.*, at 34 and 40.
[11]   *Ibid.*, at 34-35.
[12]   *Ibid.*, at 46.

Application of the Constant Growth DCF Model

1

2 **Q.** What is the primary difference between you and witness

3 Gorman in the application of the Constant Growth DCF

4 model?

5

6 **A.** While we agree that it is appropriate to rely on analyst

7 earnings growth estimates in applying the Constant Growth

8 DCF model, witness Gorman reasons that those estimates

9 should be limited to what he considers may be a

10 reasonable estimate of long-term "sustainable" growth.

11 In that regard, because they are higher than the five-

12 and ten-year nominal Gross Domestic Product ("GDP")

13 growth estimates provided by the *Blue Chip Financial*

14 *Forecast* ("*Blue Chip*"), witness Gorman concludes that the

15 mean and mean-high analyst consensus earnings growth

16 estimates in my Constant Growth DCF analysis are

17 irrational.[13] Aside from his focus on the *Blue Chip*

18 forecasts, witness Gorman suggests that the growth

19 estimates included in my analyses cannot be sustained by

20 the proxy group companies' current earnings retention

21 ratios.[14]

22

23 As discussed below, the salient issue in assessing growth

24 rates in the context of the DCF model is whether

25 investors tend to rely on a particular estimate of

---

[13]   *Ibid.*, at 54 - 55.

[14]   *Ibid.*, at 55.

1   growth. As discussed in my response to witness Baudino,

2   prior academic research (as well as the analyses

3   presented later in my rebuttal testimony) indicates that,

4   consistent with the approach used in my analyses,

5   investors rely on analysts' earnings growth projections

6   in valuing equity securities. While witness Gorman may

7   be of the view that analyst growth rates are not

8   sustainable, the relevant issue is whether investors rely

9   on those projections in making their investment

10 decisions. Given the empirical evidence supporting the

11 use of analysts' earnings growth projections, I disagree

12 with witness Gorman's conclusion that my constant growth

13 DCF produces overstated results. I discuss witness

14 Gorman's 4.90 percent long-term growth assumption in more

15 detail later in this section of my rebuttal testimony.

16

17 *Application of the Multi-Stage DCF Model*

18 Q. Do you agree with witness Gorman's application of the

19   Multi-Stage DCF model?

20

21 A. While I agree that the Multi-Stage DCF approach is a

22   reasonable analytical technique, witness Gorman's Multi-

23   Stage model contains several assumptions that produce

24   unreasonably low ROE estimates. In particular, witness

25   Gorman's model assumes a perpetual growth rate beginning

11

1 in the eleventh year of his model (that is, calendar year

2 2024) based on a GDP growth rate projection that actually

3 ends in 2024. In addition, despite the fact that they

4 are paid on a quarterly basis, witness Gorman assumes

5 that all dividends are received at the end of the year.

6 Those assumptions have the effect of unreasonably

7 decreasing the DCF result.

8

9 Q. How does witness Gorman's assumption with regard to the

10 timing of dividend payments affect his Multi-Stage DCF

11 model results?

12

13 A. Witness Gorman notes that quarterly dividends in his

14 Multi-Stage DCF model were "annualized (multiplied by

15 4)."[15] Considering that the companies within witness

16 Gorman's proxy group pay dividends on a quarterly basis,

17 assuming (as witness Gorman has done) that the entire

18 dividend is paid at the end of that year essentially

19 defers the timing of the quarterly cash flows (that is,

20 the quarterly dividends) until year-end, even though they

21 are paid throughout the year. Since witness Gorman's

22 model assumes annual dividend payments, a reasonable

23 approach would be to assume that cash flows are received

24 (on average) in the middle of the year, such that half

25 the quarterly dividend payments occur prior to the

---

[15] *Ibid.*, at 25.

1   assumed dividend payment date, and half occur after

2   (i.e., the "mid-year convention"). That approach is

3   consistent with the common practice in the Constant

4   Growth DCF model of accounting for periodic growth in

5   dividends by applying one-half of the expected annual

6   dividend growth rate to calculate the expected dividend

7   yield.

8

9   **Q.** How would the mid-year convention affect witness Gorman's

10   Multi-Stage DCF results?

11

12   **A.** Holding all other assumptions constant, simply changing

13   witness Gorman's methodology to reflect the mid-year

14   convention increases the mean and median results by

15   approximately 17 basis points.[16]

16

17   **Q.** Do you agree with the long-term growth rate in witness

18   Gorman's Multi-Stage DCF model?

19

20   **A.** No, I do not. The long-term growth rate represents the

21   expected rate of growth, in perpetuity, as of the

22   beginning of the third, or "terminal" stage.[17] Witness

23   Gorman assumes a long-term growth rate of 4.90 percent,

24   which is the approximate average of the five year (2015 –

25   2019) and ten year (2020 – 2024) nominal GDP growth rate

---

[16] *See* Document No. 11 of my exhibit.
[17] *See* Exhibit MGP-9, Page 1 of 1.

estimates, as reported by *Blue Chip*.[18] Consequently, Witness Gorman's long-term GDP growth rate projection, which he applies to years eleven through 200 of his model (that is, from year 2024 through 2212), covers only year eleven (that is, 2024). That is, despite the fact that the *Blue Chip* projection period ends in 2024, witness Gorman uses it as the measure of expected perpetual GDP growth beginning in 2024.

Since the *Blue Chip* forecast is applicable only to a single year of witness Gorman's terminal stage, I developed an alternative analysis (*see* Document No. 12 of my exhibit). In that analysis, I continue to include the *Blue Chip* forecast, but only in the period to which it applies. Since the *Blue Chip* forecast terminates in 2024, I added a fourth stage, which incorporates an additional estimate of long-term growth beyond the period represented by the *Blue Chip* forecast. As discussed in more detail below, the fourth-stage growth rate represents the combination of the long-term historical average real GDP growth rate, and the market's expectation of long-term inflation beginning ten years from now. Limiting the *Blue Chip* forecast to the period to which it applies, and incorporating the alternative estimate of long-term growth increases the mean and

---

[18] *See* direct testimony of Michael P. Gorman, at 34 and Exhibit MPG-9. Witness Gorman calculates his nominal GDP growth rates based on separate Blue Chip consensus forecasts for real GDP growth and growth in the GDP Chained Price Index for the periods 2015-2019 and 2020-2024. At page 33 of his direct testimony, witness Gorman points to the EIA Annual Energy Outlook, which projects real GDP growth in the range of 2.0 to 2.90 percent for the years 2011 through 2040, and Congressional Budget Office projections of real GDP growth from 2.20 percent to 2.60 percent over the coming five to ten years.

1 median DCF results by 47 to 48 basis points.

2

3 **Q.** Are there other benchmarks that put witness Gorman's 4.90

4 percent long-term growth rate in context?

5

6 **A.** Yes, there are. While witness Gorman suggests that the

7 reasonableness of his ROE estimates may be viewed in the

8 context of his long-term growth projections, an

9 alternative approach is to assess his long-term growth

10 projections in the context of recently authorized ROEs.

11 Given that witness Gorman's Risk Premium approach is

12 premised on the use of authorized returns as a measure of

13 "expectational" data,[19] it would follow that the long-term

14 growth rate assumed in his Multi-Stage DCF model should

15 produce results that are reasonably consistent with

16 current expectations (that is, with recently authorized

17 equity returns).

18

19 Knowing that his average Multi-Stage DCF estimate is 8.89

20 percent, and that recently authorized equity returns are

21 quite a bit higher (see Document 40 of my exhibit, and

22 Exhibit MPG-12), it is reasonable to question the

23 terminal growth rate used in witness Gorman's Multi-Stage

24 DCF analysis. As shown in Document No. 13 of my exhibit,

25 keeping all of witness Gorman's data and assumptions

---

[19] *Ibid.*, at 37.

1   constant but for the terminal growth rate, and solving

2   for the growth rate that produces an average ROE of 10.01

3   percent[20] produces an implied growth rate of 6.31

4   percent.[21] That, of course, is substantially above witness

5   Gorman's 4.90 percent estimate, although it is quite

6   consistent with the long-term geometric average nominal

7   GDP growth rate of 6.23 percent.[22]

8

9 Q. Is there another approach to calculating the long-term

10   growth rate that produces more reasonable results than

11   witness Gorman's 4.90 percent estimate?

12

13 A. Yes, there is. As witness Gorman points out in footnote

14   16 of his direct testimony (page 33), nominal GDP growth

15   is the product of real GDP growth and inflation. It is

16   possible to use observable market data regarding nominal

17   and inflation-protected Treasury yields (referred to as

18   "Treasury Inflation Protected Securities" or "TIPS") to

19   calculate the market's forward view of inflation (that

20   is, inflation expected over the long term beginning ten

21   years from now).   In particular, the difference between

22   nominal Treasury yields and TIPS yields is commonly

23   considered to be a measure of expected inflation.

24   Because the expected rate of inflation is easily

25   calculated, all that is needed is an estimate of long-

---

[20] 10.01 percent represents the average authorized ROE in 2012 for electric utilities. In performing this analysis I am not suggesting that 10.01 percent is an appropriate return for Tampa Electric.

[21] See Document No. 13 of my exhibit.

[22] Source: Bureau of Economic Analysis

16

1   term real GDP growth.

2

3   **Q.**   Is there a method that can be used to estimate projected

4   long-term real GDP growth beginning ten years from now?

5

6   **A.**   Yes, there is. In his response to the CAPM analysis

7   contained in my direct testimony, witness Gorman refers

8   to the long-term average rate of capital appreciation

9   (from 1926 through 2012) as a measure of the market's

10   expectation of the forward-looking (that is, the

11   expected) rate of growth. As witness Gorman explains, he

12   uses "this gauge of actual capital appreciation in the

13   market in the past as an estimate of future expected

14   growth of the market index going forward…"[23] That same

15   approach can be applied to real GDP growth; historical

16   real GDP growth can be used as a measure of expected real

17   GDP growth in the terminal period. According to data

18   provided by the Bureau of Economic Analysis, over the

19   period 1929 to 2012 the average annual real GDP growth

20   rate was 3.22 percent (on a geometric average basis).

21   Combining real GDP growth with the expected inflation

22   rate of 2.29 percent produces an expected long-term

23   growth rate of 5.59 percent.[24]

24

25   **Q.**   With those points in mind, did you make any additional

---

[23]   direct testimony of Michael P. Gorman, at 59.

[24] $[(1.0322) \times (1.0229)] - 1 = .0559.$

1   adjustments to witness Gorman's analysis?

2

3 **A.**   Yes, Document No. 14 of my exhibit provides the

4   incremental results of those adjustments. To ensure that

5   I correctly applied the analysis, I first recreated

6   witness Gorman's Multi-Stage model and replicated his

7   results. I then updated the market data used in that

8   model to July 12, 2013, and adjusted witness Gorman's

9   Internal Rate of Return calculation to reflect the mid-

10   year convention (as explained above). Next, I revised

11   the long-term growth rate used in the final stage of

12   witness Gorman's model to the more reasonable estimate of

13   perpetual long-term nominal GDP growth described above.

14   The cumulative effect of those adjustments is to increase

15   the average ROE estimate to 9.60 percent. Although that

16   result remains well below a reasonable estimate of the

17   Company's Cost of Equity, it is meaningfully above

18   witness Gorman's 9.25 percent ROE recommendation.

19

20 **Q.**   Aside from those adjustments to witness Gorman's model,

21   did you provide your own Multi-Stage DCF analysis?

22

23 **A.**   Yes, I did.

24

25 **Q.**   Please generally describe the structure of your Multi-

18

1   Stage model.

2

3   **A.**   The Multi-Stage model that I have included in response to

4   witness Gorman's analysis focuses on cash flow growth

5   rates over three distinct stages.   As with the Constant

6   Growth form of the DCF model, the Multi-Stage form

7   defines the Cost of Equity as the discount rate that sets

8   the current price equal to the discounted value of future

9   cash flows.   Unlike the Constant Growth form, however,

10   the Multi-Stage model included in my rebuttal testimony

11   is solved in an iterative fashion.

12

13   As noted above, the model sets the subject company's

14   stock price equal to the present value of future cash

15   flows received over three "stages".   In the first two

16   stages, "cash flows" are defined as projected dividends.

17   In the third stage, "cash flows" equal both dividends and

18   the expected price at which the stock is sold at the end

19   of the period (i.e., the "terminal price").   I calculated

20   the terminal price based on the Gordon model, which

21   defines the price as the expected dividend divided by the

22   difference between the Cost of Equity (i.e., the discount

23   rate) and the long-term expected growth rate.   In

24   essence, the terminal price is defined by the present

25   value of the remaining "cash flows" in perpetuity.[25]   In

---

[25] The terminal rate equals the 5.59 percent expected nominal GDP growth
discussed earlier in my response to witness Gorman.

1   each of the three stages, the dividend is the product of

2   the projected Earnings Per Share, and the expected

3   dividend payout ratio.

4

5 Q.   What are the primary analytical benefits of your three-

6   stage model?

7

8 A.   The primary benefits relate to the flexibility provided

9   by the model's structure. Since it provides the ability

10   to specify near, intermediate, and long-term growth

11   rates, for example, the model avoids the sometimes-

12   limiting assumption that the subject company will grow at

13   the same, constant rate in perpetuity. In addition, by

14   calculating the dividend as the product of earnings and

15   the payout ratio, the model enables analysts to include

16   assumptions regarding the timing and extent of changes in

17   the payout ratio to reflect, for example, increases or

18   decreases in expected capital spending, or a transition

19   from current payout levels to long-term expected levels.

20   In that regard, because the model relies on multiple

21   sources of earnings growth projections, it is not limited

22   to a single source, such as Value Line, for all inputs,

23   and mitigates the potential bias associated with relying

24   on a single source of growth estimates.[26]

25

---

[26] See, for example, Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, 21 (Summer 1992).

1   The model also enables the analyst to assess the

2   reasonableness of the inputs and results by reference to

3   certain market-based metrics. For example, the stock

4   price estimate can be divided by the expected Earnings

5   Per Share in the final year to calculate an average P/E

6   ratio. Similarly, the terminal P/E ratio can be divided

7   by the terminal growth rate to develop a Price to

8   Earnings Growth ("PEG") ratio. To the extent that either

9   the projected P/E or PEG ratios are inconsistent with

10   historical or expected levels, it may indicate incorrect

11   or inconsistent assumptions within the balance of the

12   model.

13

14 Q. What were your specific assumptions with respect to the

15   payout ratio?

16

17 A. For the first two periods I relied on the first year and

18   long-term projected payout ratios reported by Value

19   Line,[27] for each of the proxy companies. I then assumed

20   that by the end of the second period (i.e., the end of

21   year 10), the payout ratio will converge to the industry

22   expected ratio of 66.67 percent.[28]

23

24 Q. Please summarize the results of your Multi-Stage DCF

25   analysis.

---

[27] As reported in the Value Line Investment Survey as "All Div'ds to Net Prof."

[28] Source: Bloomberg Professional.

1   **A.**   My Multi-Stage DCF analysis produces a range of results

2   from 9.47 percent to 10.67 percent; the upper end of that

3   range is consistent with my recommended ROE range, and

4   with recently authorized returns in credit-supportive

5   regulatory jurisdictions such as Florida.

6

7   *Application of Capital Asset Pricing Model*

8   **Q.**   Please summarize witness Gorman's CAPM analysis.

9

10   **A.**   witness Gorman develops a single CAPM estimate, which is

11   based on the average of two separate Market Risk Premium

12   estimates. Witness Gorman's first MRP estimate (7.50

13   percent) is based on the long-term historical

14   (arithmetic) average real market return from 1926 through

15   2012 as reported by Morningstar, which he then adjusts

16   for current inflation forecasts.[29] witness Gorman's

17   second MRP estimate (5.70 percent) represents the

18   historical difference between the average return on the

19   S&P 500, and the average total return on long-term

20   government bonds.[30] witness Gorman then relies on *Blue*

21   *Chip*'s projected 30-year Treasury yield of 3.70 percent

22   as the risk-free rate, and Beta Coefficients provided by

23   Value Line to calculate his 8.60 percent average CAPM

24   result.[31]

25

---

[29]   *See* direct testimony of Michael P. Gorman, at 43.

[30]   *Ibid.*, at 43.

[31]   direct testimony of Michael P. Gorman, at 58.

1 **Q.** Does witness Gorman note any objections to your CAPM

2   analysis?

3

4 **A.** Yes, witness Gorman asserts that my DCF-derived MRP

5   estimate is based on a growth rate c that is "far too

6   high" to be "sustainable",[32] and argues that my Sharpe

7   Ratio approach relies on volatility measures that are

8   short-term and inappropriate for utility investors.[33]

9   Because witness Gorman's concern with the

10   "sustainability" of growth rates arises in other aspects

11   of his testimony, I address his specific concern

12   regarding the expected market growth rate below.

13

14 **Q.** What is the basis of witness Gorman's assertion that your

15   DCF-derived market return estimate is not "sustainable"?

16

17 **A.** witness Gorman notes that the earnings growth rate

18   component of my DCF-derived market return is higher than

19   estimates of long-term nominal GDP growth and on that

20   basis, concludes that those projections are "far too high

21   to be a rational outlook for sustainable long-term market

22   growth."[34] witness Gorman supports his position by noting

23   that the rate of "capital appreciation for the S&P 500

24   over the period 1926 through 2012" was 7.50 percent.[35]

25   Adding the market average dividend yield of 2.00 percent

---

[32] *Ibid.*, at 59.
[33] *Ibid.*, at 60.
[34] *Ibid.*, at 58.
[35] *Ibid.*, at 59.

1   to that 7.50 percent rate of growth, witness Gorman

2   concludes that a reasonable expectation of the total

3   market return would be 9.50 percent, which would

4   translate to a "going-forward expected market risk

5   premium of 6.4 percent."[36]

6

7 Q. Turning first to the expected total return on the market,

8   do you agree with witness Gorman's 9.50 percent estimate?

9

10 A. No, I do not. Since witness Gorman supports his position

11   in terms of the historical rate of capital appreciation,

12   it also is appropriate to consider the expected market

13   return in the context of historical market returns. In

14   that regard, from 1926 through 2012, the arithmetic

15   average market return (including the 7.50 percent capital

16   appreciation rate noted by witness Gorman) was 11.80

17   percent,[37] 230 basis points above witness Gorman's 9.50

18   percent estimate.

19

20   Because witness Gorman concludes that the market return

21   estimates used in my analyses are "too high" relative to

22   historical levels, it also is instructive to understand

23   how often various ranges of total returns actually have

24   occurred over the 1926 to 2012 period. To perform that

25   analysis, I gathered the annual return on Large Company

---

[36] *Ibid.*, at 59.

[37] The return on Large Company Stocks, as reported by Morningstar, is
the source on which witness Gorman relies to arrive at his 7.50
percent historical average capital appreciation rate.

24

Stocks reported by Morningstar, produced a histogram of those observations, and calculated the probability that a given market return estimate would be observed. The results of that analysis, which are presented in Document No. 15 of my exhibit, demonstrate that returns of 13.00 percent and higher actually occurred quite often.

In fact, the 12.93 percent and 13.00 percent estimates, which witness Gorman considers excessive by historical standards, represent the 49th percentile of the actual returns observed from 1926 to 2012. In other words, of the 87 annual observations, 44 were 13.00 percent or higher. By that measure, my estimate is not too high; it is entirely consistent with the historical experience that witness Gorman considers relevant.

Q. Turning now to witness Gorman's position that your MRP estimate is too high, did you also consider where your estimates fall within the range of historical observations?

A. Yes, I did. Similar to my review of observed market returns, I gathered the annual Market Risk Premia reported by Morningstar and produced a histogram of the observations. The results of that analysis, which are

presented in Document No. 16 of my exhibit, demonstrate that MRPs of at least 9.85 percent (generally the range of the MRP estimates in my direct testimony; *see* direct testimony and Exhibit of Robert B. Hevert, Document No. 5, Page 1 of 1 of my exhibit) have occurred nearly half of the time.

I then considered a different perspective, calculating the cumulative probability of the same ranges of MRP estimates. Those results, which are provided in Document No. 17 of my exhibit, demonstrate that (based on historical observations) there is approximately a 45.00 percent likelihood that an MRP of at least 10.00 percent will occur.

Those data present another important point: the annual average MRP of 6.70 percent is quite heavily influenced by a small number of large, negative observations. In 2008, for example, the MRP was negative 41.40 percent and as a result, the average long-term MRP fell. In other words, in the year during which market risk and uncertainty were at historically high levels, the historical average MRP suggested that investors required a significantly lower Return on Equity investments than they did on Treasury securities. In fact, from 2007-2012

1   the historical average MRP decreased from 7.10 percent to

2   6.70 percent, while market volatility increased from

3   17.54 percent to a high of 32.69 percent in 2008 and

4   eventually fell to 17.80 percent in 2012.[38] That is, the

5   effect of the 2007 to 2009 financial dislocation, in

6   which realized returns fell and volatility increased, was

7   to decrease the long-term average MRP.

8

9   The assumption that investors became less risk averse (as

10 manifested in a lower MRP) during periods of increasing

11 market uncertainty (as measured by the volatility of

12 returns in 2008) is counter-intuitive, and in my view,

13 leads to unreliable analytical results.

14

15 Q. Does witness Gorman's observation that the historical

16   rate of capital appreciation has been 7.50 percent relate

17   to other aspects of his ROE analyses and recommendations?

18

19 A. Yes, it does. As noted earlier, witness Gorman's DCF

20   analyses reflect his view as to what may or may not

21   represent a "sustainable" rate of growth. Witness Gorman

22   compares analyst growth rates used in the Constant Growth

23   DCF analysis with the *Blue Chip* projection of nominal GDP

24   growth (4.90 percent).[39] As noted earlier, despite the

25   fact that it is disconnected in time from its application

---

[38]   Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation
       Valuation Yearbook, at 142 - 143 and Bloomberg Professional.
[39]   *See* direct testimony of Michael P. Gorman, at 26-27.

in his analysis,[40] witness Gorman also relies on the *Blue Chip* nominal GDP growth projection as the terminal growth rate in his Multi-Stage DCF analysis.

While witness Gorman suggests that 4.90 percent represents the upper limit on long-term growth, he also estimates the long-term forward-looking expected return on the market by assuming the 7.50 percent historical rate of capital appreciation. In other words, witness Gorman appears to be of the view that 4.90 percent is a reasonable measure of long-term growth for the DCF model, and that 7.50 percent is an appropriate measure of long-term growth to estimate the expected market return. It is important to recognize that the growth component of the constant growth DCF model represents the expected rate of capital appreciation; the same is true of the terminal growth rate used in his multi-stage DCF analysis.[41] Consequently, the 7.50 percent rate of capital appreciation that witness Gorman assumes for the purpose of his expected market return also represents a measure of expected long-term growth.

In essence, witness Gorman's various analyses assume long-term growth rates of 4.90 percent to 7.50 percent. The growth estimates used in my Constant Growth DCF model

---

[40] As noted earlier, the Blue Chip projection period ends in the year in which witness Gorman uses it as the estimate of expected *perpetual* GDP growth.

[41] As noted in my direct testimony, the Constant Growth DCF model assumes that earnings, dividends, and book value all grow at the same, constant rate in perpetuity (see direct testimony of Robert B. Hevert, at 22). Those assumptions imply that the Market-to-Book and price/earnings ratios stay constant. The same basic assumptions hold for witness Gorman's "sustainable growth" model.

1 (5.78 percent on average) and the long-term growth

2 estimate assumed in my Multi-Stage DCF analysis (5.59

3 percent) fall within that range. Consequently, witness

4 Gorman's assertions that my growth rate estimates are

5 somehow inflated are inconsistent with his own data and

6 assumptions.

7

8 Q. What would be the effect of reflecting the long-term

9 capital appreciation rate (7.50 percent) in the Multi-

10 Stage DCF analysis?

11

12 A. If we were to keep witness Gorman's 4.90 percent growth

13 rate as the third-stage estimate, but include the 7.50

14 percent long-term capital appreciation rate noted in

15 witness Gorman's testimony, the mean and median Multi-

16 Stage DCF result would increase to 10.74 percent (*see*

17 Document No. 12 of my exhibit). That estimate, of

18 course, is well within my recommended range.

19

20 Q. What are your conclusions regarding witness Gorman's CAPM

21 analysis?

22

23 A. As a practical matter, witness Gorman's CAPM result is

24 nearly 200 basis points below the Commission's decision

25 in Docket No. 120015-EI. Consequently (and for the

1 reasons discussed above), I agree with witness Gorman's

2 decision to place "minimal weight" on his 8.60 percent

3 CAPM estimate.[42]

4

5 **_Application of the Risk Premium Model_**

6 **Q.** Please briefly describe witness Gorman's Risk Premium

7 analyses.

8

9 **A.** witness Gorman defines the "Risk Premium" as the

10 difference between average annual authorized equity

11 returns for electric utilities, and a measure of long-

12 term interest rates each year from 1986 through 2012.

13 Witness Gorman's first approach calculates the annual

14 risk premium by reference to the 30-year Treasury yield,

15 and the second considers the average A-rated utility bond

16 yield.[43] In each case, witness Gorman discards the three

17 lowest and three highest implied equity risk premia, and

18 establishes the range of Risk Premium estimates based on

19 the next highest (or lowest) estimate. In other words,

20 the lower bound of his Risk Premium range is defined by

21 the fourth-lowest risk premium, regardless of the year in

22 which it occurred. In a similar manner, the upper bound

23 of witness Gorman's Risk Premium range is defined by the

24 fourth-highest estimate, regardless of the year in which

25 that observation occurred. Witness Gorman then applies

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[42] *See* direct testimony of Michael P. Gorman, at 46.
[43] *See* Exhibits MPG-11 and MPG-12.

weights of 25.00 percent and 75.00 percent, respectively, to his lower and upper bound estimates.[44]

As to the period over which he gathers and analyzes his data, witness Gorman suggests that his 27-year horizon is a "generally accepted period to develop a risk premium study using 'expectational' data."[45] witness Gorman further notes that "it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns", and concludes that his "risk premium study is based on expectational data, not actual returns, and, thus, need not encompass very long time periods."[46] Based on those assumptions, witness Gorman calculates a range of estimates from 7.72 percent to 9.88 percent, and produces a return estimate of 9.28 percent, which he rounds to 9.30 percent.[47]

Q. Does witness Gorman rely on his Risk Premium model in making his ROE recommendation?

A. Yes, he does. As noted above, witness Gorman develops his ROE estimate (i.e., 9.25 percent) at least in part based on his Risk Premium results.[48]

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[44] *See* direct testimony of Michael P. Gorman, at 36 and 39.
[45] *Ibid.*, at 37.
[46] *Ibid.*, at 38.
[47] *Ibid.*, at 39-40.
[48] *Ibid.*, at 46.

Q. What are your specific concerns with witness Gorman's Risk Premium analyses?

A. I have several concerns with witness Gorman's analysis: (1) his method of relying on the fourth lowest and highest risk premium is arbitrary and establishes a range of ROE estimates that are predicated on economic and financial conditions that are far removed from the current market; (2) witness Gorman's method and recommendation ignore an important relationship revealed by his own data, i.e., that the Risk Premium has a strong negative correlation to the level of interest rates (whether measured by Treasury or utility bond yields); and (3) the low end of witness Gorman's Risk Premium estimates, which is well below his CAPM estimate (which he gave minimal weight in developing his ROE range and recommendation), is far lower than any ROE authorized since at least 1986 and as such, has no relevance in estimating the Company's Cost of Equity.

Q. Turning first to the method by which witness Gorman selected the bounds of his Risk Premium estimates, have you reviewed the range of data included in his analysis?

A. Yes, I have. Considering first the Treasury yield-based

1   analysis, I plotted the yields and Risk Premia over the

2   1986 to 2012 period included in witness Gorman's

3   analysis. That graph is presented in Document No. 18 of

4   my exhibit.

5

6   There are several important points that may be taken from

7   that data. First, the low end of witness Gorman's Risk

8   Premium range, 4.41 percent, was observed in 1987 and

9   1991 (that is, during the second Reagan administration

10 and the G.H.W. Bush administration). It is apparent that

11 a discrete observation from an economic environment 26

12 years ago has little to do with current market

13 conditions. In fact, a very visible measure of such

14 differences is the fact that in 1987, Treasury yields

15 exceeded the Risk Premium. As Document No. 18 of my

16 exhibit demonstrates, however, since the turn of the

17 Millennium, the opposite has been true; the Risk Premium

18 has consistently exceeded Treasury yields. By that

19 measure alone, it is clear that the low end of witness

20 Gorman's range has little, if any, relevance to the

21 current market environment.

22

23 As to the high end of his range, witness Gorman's

24 convention of discarding the three highest Risk Premium

25 estimates has the effect of ignoring observations from

33

1 2009, 2011 and 2012. Since 2008, the Federal Reserve has

2 proceeded on a steady path of initiatives (including the

3 extension of Quantitative Easing announced on June 19,

4 2013) designed to lower long-term Treasury yields.[49] By

5 not including the most recent data in his analysis,

6 witness Gorman's method fails to recognize the decrease

7 in Treasury yields and the concurrent, and considerable,

8 increase in the Risk Premium.

9

10 Q. Please elaborate on your last point, that the Risk

11 Premium has increased as Treasury yields have decreased.

12

13 A. As Document No. 18 of my exhibit demonstrates, over

14 witness Gorman's study period the Risk Premium has moved

15 inversely to changes in Treasury yields. While witness

16 Gorman suggests that such a relationship may be

17 "simplistic", it clearly is supported by his own data;[50]

18 the correlation between the two is negative 86.78 percent

19 (see Document No. 18 of my exhibit). To put that degree

20 of correlation in perspective, if the two were to move in

21 exactly opposite directions, the correlation would be

22 negative 100.00 percent, if they did not move together at

23 all, the correlation would be zero. Because correlation

24 coefficients by definition are between zero and one

25 (either positive or negative), a correlation of negative

---

[49] *See* Federal Reserve Press Release dated June 19, 2013.
[50] direct testimony of Michael P. Gorman, at 62. Please also see page 37 of my direct testimony and in particular footnote 29 in which I cite academic articles that conclude such a relationship does exist.

34

86.78 percent indicates a strong tendency for the Equity Risk Premium to increase as interest rates decrease. While witness Gorman suggests that there is no academic support for the position that the Risk Premium is inversely related to changes in interest rates, Dr. Roger Morin notes that:

> [p]ublished studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates - rising when rates fell and declining when interest rates rose.[51]

In fact, several of the articles cited by Dr. Morin also were cited in my direct testimony.[52]

Turning back to witness Gorman's data, a simple linear regression analysis reveals that for every 100 basis point decrease in yields, the Risk Premium increases by approximately 44 basis points (*see* Document No. 18 of my exhibit).[53] That result is consistent with those found by Maddox, Pippert and Sullivan, who determined that the Risk Premium would increase by 37 basis points for every 100 basis point change in the 30-year Treasury yield.[54]

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[51] Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc. (2006), at 128 [clarification added].

[52] *See* direct testimony of Robert B. Hevert, at 37.

[53] Adjusting for serial correlation does not materially affect the results; *see* Document No. 18 of my exhibit.

[54] *See* Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Vol. 24, No. 3, Autumn 1995, at 93.

1   Citing Harris and Marston, the authors note a similar
2   estimate of 36 basis points.[55]   While witness Gorman
3   suggests that other variables may be at play, he has
4   provided no insight as to whether those variables (e.g.,
5   credit spreads) would materially affect the interest
6   rate/Risk Premium relationship. Adding credit spreads as
7   an explanatory variable, for example, does not alter the
8   fundamental negative relationship between interest rates
9   and the Equity Risk Premium (see Document No. 18 of my
10 exhibit). If anything, allowing for the "unusually wide
11 Treasury to utility bond yield spreads"[56] noted by witness
12 Gorman would increase the estimated ROE (the regression
13 coefficient relating to the credit spread is positive).

14

15 Q. Have you made any adjustments to witness Gorman's
16   analysis to reflect the concerns discussed above?

17

18 A. Yes, I have. While I continue to believe that the
19   regression analysis included in my direct testimony is
20   the appropriate method, I have adjusted witness Gorman's
21   analysis to reflect the Risk Premium associated with the
22   prevailing level of interest rates. Based on witness
23   Gorman's Exhibit MPG-11, the average 30-year Treasury
24   yield in 2011 and 2012 was 3.42 percent; the average Risk
25   Premium during those years was 6.70 percent. Applying

---

[55] *Ibid.*
[56] *See* direct testimony of Michael P. Gorman, at 40.

1   the projected 3.70 percent (30-year) Treasury yield to

2   that risk premium produces an ROE estimate of 10.40

3   percent.   Assuming the respective 2011 and 2012 Risk

4   Premium estimates (combined with the projected 3.70

5   percent Treasury yield) produces a range of 10.01 percent

6   to 10.79 percent.   While the low end of the range is

7   somewhat below my recommended range, those estimates are

8   far more consistent with observed authorized returns than

9   witness Gorman's 7.72 percent to 9.88 percent range.[57]

10

11   Q.   Have you completed a similar analysis using witness

12   Gorman's Utility Bond Yield data?

13

14   A.   Yes, those results are consistent with my analysis of

15   witness Gorman's Treasury yield-based Risk Premium.   Here

16   again, it is clear that the Risk Premium has increased as

17   the Utility Bond Yield has decreased.   In fact, because

18   the two have been moving steadily in opposite directions,

19   the Risk Premium now is higher than the Bond Yield.

20   Witness Gorman, however, developed his Risk Premium (and,

21   therefore, his ROE) estimates based on data points that

22   occurred more than 17 years prior to that point of

23   inversion.   Even the high end of witness Gorman's Risk

24   Premium estimate (which is based on calendar year 2010)

25   is derived from data reflecting a period in which the

---

[57]   *Ibid.*, at 39.   Please note that I address witness Gorman's assumption
       that a return estimate as low as 7.72 percent should be given any
       weight in more detail below.

1   Bond Yield exceeded the Risk Premium and as such,

2   produces an ROE estimate that is incompatible with the

3   current market environment.

4

5   Q. Do you have any other observations regarding witness

6   Gorman's Risk Premium analysis?

7

8   A. Yes, I do. Aside from the shortcomings discussed above,

9   witness Gorman's Risk Premium recommendation gives

10   considerable weight to ROE estimates that are well below

11   the lowest return that has ever been authorized. Of the

12   1,410 electric utility rate authorizations since 1980 for

13   which authorized ROEs were disclosed, the lowest was 8.75

14   percent.[58] witness Gorman, however, gives specific weight

15   to ROE estimates that (on average) are over 100 basis

16   points below that 8.75 percent level. It also is

17   important to recognize that the 7.72 percent and 8.11

18   percent ROE estimates, each of which witness Gorman gave

19   25.00 percent weight, are well below his average CAPM

20   result (8.60 percent) to which he gave no specific weight

21   in arriving at his ROE recommendation.

22

23 *Capital Market Conditions and Investor Risk Perceptions*

24 Q. Please briefly summarize witness Gorman's position

25   regarding current capital market conditions and their

---

[58] Source: Regulatory Research Associates.

38

1   effect on the Company's Cost of Equity.

2

3 **A.**   Witness Gorman presents a review of general electric

4   utility industry credit outlooks and stock price

5   performance, and concludes that the market has embraced

6   "the electric utility industry as a safe-haven

7   investment, and views utility equity and debt investments

8   as low-risk securities."[59] witness Gorman further states

9   that my discussion "ignores market sentiments toward

10   utility companies, and instead lumps utility investments

11   in with general corporate investments."[60] The risk

12   metrics discussed in my direct testimony, however, relate

13   specifically to the effect of capital market conditions

14   on utility companies generally and electric utilities in

15   particular.[61] Consequently, witness Gorman is incorrect

16   when he concludes that I somehow have "lumped" utilities

17   together with "general corporate investments."

18

19 **Q.**   Do you agree with witness Gorman's conclusions regarding

20   utility stock valuations and their implications for the

21   Company's Cost of Equity?

22

23 **A.**   No, I do not. While witness Gorman suggests that

24   "utility stock investments are regarded by market

25   participants as a moderate to low-risk investment,"[62] he

---

[59]   *See* direct testimony of Michael P. Gorman, at 7-8.
[60]   *Ibid.*, at 65.
[61]   *See* direct testimony of Robert B. Hevert, Document Nos. 11, 12.
[62]   direct testimony of Michael P. Gorman, at 11.

1   fails to recognize that from July 12, 2012 through July

2   12, 2013, electric utilities were one of the worst

3   performing equity market sectors. In fact, while the S&P

4   500 gained 25.88 percent, witness Gorman's proxy group[63]

5   gained only 4.04 percent (*see* Document No. 19 exhibit).

6   On relative basis, therefore, electric utilities were

7   among the weakest industry sectors over the last year.

8

9   **IV. RESPONSE TO HUA WITNESS BAUDINO AS IT RELATES TO THE**

10   **COMPANY'S COST OF EQUITY**

11   **Q.**   Please summarize witness Baudino's ROE analyses and ROE

12   recommendation in this proceeding.

13

14   **A.**   Witness Baudino recommends an ROE of 9.30 percent, which

15   is based on the results of his Constant Growth DCF

16   analyses.[64] Although witness Baudino performs several

17   CAPM analyses, he does not "directly incorporate [those]

18   results" in his ROE recommendation.[65]

19

20   Witness Baudino notes that interest rates have declined

21   from January 2002 through May 2013, and suggests that the

22   required Return on Equity also is lower.[66] As to its

23   capital structure, witness Baudino accepts the Company's

24   proposed 54.20 percent equity ratio, but suggests that

25   doing so makes his ROE recommendation conservative.[67]

---

[63]   witness Gorman relied on the same proxy group included in my direct testimony.

[64]   *See* direct testimony of Richard A. Baudino, at 2. [Clarification added]

[65]   *Ibid.*

[66]   *Ibid.*, at 4, 12. *See* also Exhibit RAB-2.

[67]   *See* direct testimony of Richard A. Baudino, at 33-34.

1 Lastly, because he believes they are accounted for in the

2 stock prices used in DCF analyses, witness Baudino

3 suggests it is unnecessary to reflect flotation costs in

4 his ROE estimate.[68]

5

6 Q. What are the principal areas in which you disagree with

7 witness Baudino's ROE analyses?

8

9 A. The principal areas in which I disagree with witness

10 Baudino include: (1) his sole reliance on the Constant

11 Growth DCF model to determine the Company's Cost of

12 Equity; (2) the growth rates applied in the Constant

13 Growth DCF model; (3) the risk-free rate and Market Risk

14 Premium used in the CAPM; (4) whether the Bond Yield Plus

15 Risk Premium analysis provides reasonable estimates of

16 the Company's Cost of Equity; (5) the recovery of

17 flotation costs; and (6) our respective assessments of

18 the Company's level of business and financial risk. In

19 addition, while witness Baudino and I disagree regarding

20 the selection and composition of our respective proxy

21 groups, those differences do not appear to account for a

22 meaningful difference in our analytical results or

23 recommendations. Nonetheless, I briefly discuss our

24 different proxy company selection criteria, below.

25

---

[68] *Ibid.*, at 47-48.

1   *Proxy Group Composition*

2   **Q.**   Please summarize the criteria by which witness Baudino

3   selected his proxy group.

4

5   **A.**   witness Baudino began with the electric utilities included

6   in the July 2013 issue of *AUS Utility Reports*, and

7   arrived at his proxy group by excluding companies that:

8   1. Were not rated "Baa" or "BBB" by Moody's Investor

9   Service ("Moody's") or Standard and Poor's ("S&P");

10   2. Have eliminated dividend payments or recently cut

11   dividend payments;

12   3. Were recently, or are currently involved in merger

13   activities or significant restructuring; or

14   4. Had recent experience with significant earnings

15   fluctuations.[69]

16

17   He then excluded Ameren Corporation and Edison

18   International because of business challenges in their

19   unregulated generation business segments. Witness

20   Baudino also excluded PG&E Corporation due to near-term

21   earnings growth uncertainty related to the recent gas

22   pipeline explosions. Based on those criteria, witness

23   Baudino arrived at a group of 16 companies.[70] Document

24   No. 20 of my exhibit provides a comparison of the

25   companies included in our respective proxy groups.

---

[69]   *See* direct testimony of Richard A. Baudino, at 17-18. Note, witness Baudino excludes companies that have credit ratings from both Moody's and S&P that are either above, or below Baa/BBB.

[70]   *Ibid.*, at 17-19.

1 **Q.** Are the scope and definition of the screens applied by
2   witness Baudino generally consistent with those used in
3   your direct testimony?

4

5 **A.** While certain of the screening criteria are common to our
6   analyses, there are certain differences between our
7   approaches.

8

9 **Q.** What are the primary differences between you and witness
10   Baudino with respect to screening criteria?

11

12 **A.** The majority of the difference in our approaches relate
13   to witness Baudino's use of proxy companies that: (1)
14   receive less than 90.00 percent of their regulated net
15   income from electric operations; (2) do not have
16   meaningful amounts of regulated generating assets; or (3)
17   derive less than 10.00 percent of their generation from
18   coal-fired power plants. In addition, four companies
19   included in my proxy group were excluded by witness
20   Baudino because their bond credit ratings were above
21   Baa/BBB (Moody's/S&P).

22

23   As shown in Document Nos. 1, 2, and 5 of my exhibit,
24   despite those differences, the composition of our
25   respective proxy groups has little effect on the

1   differences in our analytical results. Consequently, the

2   analyses accompanying my rebuttal testimony include

3   results for a Combined Proxy Group that contains all of

4   the proxy companies relied on by either witness Baudino

5   or me.

6

Application of the Constant Growth DCF Analysis

8 **Q.** Please briefly describe witness Baudino's Constant Growth

9   DCF analysis and results.

10

11 **A.** Witness Baudino calculates an average dividend yield of

12   4.00 percent by dividing each proxy company's annualized

13   dividend by its average monthly stock price for the six-

14   month period from January 2013 to June 2013.[71] For the

15   expected growth rate, witness Baudino relies on Earnings

16   Per Share growth rate projections from Value Line, Zacks,

17   and Thomson, as well as Dividend Per Share growth rate

18   projections from Value Line.[72] witness Baudino then

19   calculates DCF results based on the mean and median

20   growth rate of the four sources noted above, producing

21   eight ROE estimates that range from 7.38 percent to 10.07

22   percent.[73]

23

24   Witness Baudino refers to the DCF results produced using

25   mean growth rates as "Method 1", and DCF results produced

---

[71] *See* direct testimony of Richard A. Baudino, at 20. witness Baudino calculates the average monthly stock price as the average of the highest and lowest stock price for the month; *see* Exhibit RAB-8.

[72] *See* also Exhibit RAB-9, page 2.

[73] *Ibid.*

1 using median growth rates as "Method 2". The mean and

2 midpoint DCF results of Method 1 were 9.32 percent and

3 9.08 percent, respectively. The mean and midpoint DCF

4 results of Method 2 were 9.08 percent and 8.73 percent,

5 respectively.[74]

6

7 Lastly, witness Baudino considers a form of "Sustainable

8 Growth", although he does not appear to include that

9 estimate in his final DCF analyses.

10

11 Q. Please summarize the differences between you and witness

12 Baudino in the selection of growth rates in your DCF

13 models.

14

15 A. Witness Baudino and I disagree in three general areas:

16 (1) the use of projected dividend growth rates in

17 estimating the Cost of Equity; (2) the criteria on which

18 a given growth rate estimate may be considered

19 appropriate for the purposes of the Constant Growth DCF

20 model; and (3) the form of "Sustainable Growth" described

21 in witness Baudino's testimony.

22

23 Q. Please explain your concern with witness Baudino's use of

24 projected dividend growth rates in the DCF model.

25

---

[74] See direct testimony of Richard A. Baudino, at 25; See also Exhibit
RAB-9, Page 2 of 2.

A. As noted in my direct testimony, earnings are the fundamental driver of a company's ability to pay dividends.[75] Management decisions to conserve cash for capital investments, to manage the dividend payout for the purpose of minimizing future dividend reductions, or to signal future earnings prospects can influence dividend growth rates in near-term periods. Over the long-run, however, dividends are dependent on and will increase as a function of earnings. Since the DCF model assumes cash flows based on a constant dividend payout ratio in perpetuity, earnings, rather than dividends, are the appropriate measure of growth.

I also note that Value Line is the only service noted in witness Baudino's testimony that provides dividend growth projections. To the extent that the earnings projections services such as Zacks and Thomson Financial used by both witness Baudino and me represent survey data, the results are less likely to be biased in one direction or another.

Q. Is the use of analysts' earnings growth projections in the DCF model supported by academic literature?

A. Yes, a number of published articles support the use of analysts' earnings growth projections in the DCF model. A

---

[75] See direct testimony of Robert B. Hevert, at 24.

1986 article entitled *Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return* by Dr. Robert Harris, for example, demonstrated that financial analysts' earnings forecasts (referred to in the article as "FAF") in the Constant Growth DCF formula are an appropriate method of calculating the expected MRP.[76] In that regard, Dr. Harris noted that:

> ...a growing body of knowledge shows that analysts' *earnings* forecasts are indeed reflected in stock prices. Such studies typically employ a consensus measure of FAF calculated as a simple average of forecasts by individual analysts.[77]

Dr. Harris further noted that:

> Given the demonstrated relationship of FAF to equity prices and the direct theoretical appeal of expectational data, it is no surprise that FAF have been used in conjunction with DCF models to estimate equity return requirements.[78]

Similarly, in *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts*, Harris and Marston presented "estimates of shareholder required rates of return and risk premia which are derived using forward-looking analysts' growth forecasts."[79] In that regard, Harris and Marston reported that,

---

[76] *See* Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return*, Financial Management, 1986 at 66.

[77] *Ibid.*, at 59. Emphasis added. As noted in my direct testimony, Zacks and First Call, the sources of earnings growth projections that I use in addition to Value Line, are consensus forecasts.

[78] *Ibid.*, at 60.

[79] Robert S. Harris, Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992.

1 ...in addition to fitting the theoretical

2 requirement of being forward-looking, the

3 utilization of analysts' forecasts in

4 estimating return requirements provides

5 reasonable empirical results that can be useful

6 in practical applications.[80]

7 Here again, the finding was clear: analysts' earnings

8 forecasts are highly related to stock price valuations

9 and, therefore, are appropriate inputs to stock valuation

10 and ROE estimation models.[81] As discussed below, that

11 conclusion also holds true for the universe of electric

12 utilities covered by Value Line.

13

14 Q. Please describe the analyses you performed to assess the

15 relationship between stock prices and projected earnings

16 and dividend growth rates.

17

18 A. My analyses were based on the fundamental premise of the

19 Constant Growth DCF model, i.e., that the current market

20 price is a function of expected growth. As discussed in

21 more detail below, my analyses examine the relationship

22 between the current Price/Earnings ("P/E") ratios as the

23 dependent variable with (projected) Earnings Per Share

24 ("EPS") and Dividend Per Share ("DPS") growth rates (as

25 provided by Value Line) as the explanatory variables.

---

[80] *Ibid.*, at 63.

[81] In *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, published in Financial Management, Spring 1985, Brigham, Shome and Vinson noted that "evidence in the current literature indicates that (i) analysts' forecasts are superior to forecasts based solely on time series data; and (ii) investors do rely on analysts' forecasts."

1   The intent was to determine whether projected earnings or

2   dividend growth rates are statistically related to the

3   companies' P/E ratios.

4

5 Q. What did those analyses reveal?

6

7 A. As shown in Document No. 21 of my exhibit, the analyses

8   indicate that projected dividend growth is not a

9   statistically significant explanatory variable; projected

10   earnings growth rate, on the other hand, is statistically

11   significant.[82] That is, while EPS growth rates have a

12   statistically significant ability to explain changes in

13   valuation levels, DPS growth rates do not.

14

15 Q. Do you have any other concerns with the projected

16   Dividend Per Share growth rates used by witness Baudino?

17

18 A. Yes. In particular, I note the Value Line dividend growth

19   rate estimates on which witness Baudino relies include

20   growth estimates significantly below the projected rate

21   of inflation. By relying on those estimates, witness

22   Baudino implicitly has assumed that investors would

23   commit capital to a company expected to have negative

24   real growth *in perpetuity*. Since witness Baudino

25   excluded Otter Tail Corporation's 21.50 percent earnings

---

[82]   For the reasons discussed later in my response to witness Baudino,
Document No. 21 of my exhibit also includes Book Value Per Share
growth rates.

49

growth rate from his DCF calculation for being "anomalous"[83], I believe it would have been appropriate for witness Baudino to exclude negative real growth rate projections, as well.

As Document No. 22 of my exhibit demonstrates, after eliminating negative real growth rates from witness Baudino's DCF analysis, the mean projected Dividend Per Share growth rate increases from 4.29 percent to 5.69 percent (an increase of 140 basis points).[84] Similarly, the median projected Dividend Per Share growth rate increases from 3.31 percent to 5.50 percent (219 basis points).

While I do not agree with the use of Dividend Per Share growth rates, I note that after eliminating negative real growth rates, the mean and median Dividend Per Share growth rate is generally consistent with the mean and median Earnings Per Share growth rates on which witness Baudino relies. As Document No. 22 of my exhibit also demonstrates, excluding negative real dividend growth rates would increase witness Baudino's "Method 1" mean and midpoint DCF results from 9.32 percent and 9.08 percent to 9.68 percent and 9.63 percent, respectively. The same adjustment would increase witness Baudino's

---

[83] direct testimony of Richard A. Baudino, at 18, 24. witness Baudino also excluded PNM Resources from his proxy group because he found the dividend and earnings growth rate projections (12.50 percent and 12.00 percent, respectively) "excessive" and "non-constant"; see direct testimony of Richard A. Baudino, at 38.

[84] A 2.21 percent expected rate of inflation was calculated as the difference between the 30-day average of the 30-year nominal Treasury yield (3.46 percent) and the 30-year TIPS yield (1.25 percent) as of July 12, 2013.

1   "Method 2" mean and midpoint DCF results from 9.08

2   percent and 8.73 percent to 9.64 percent and 9.67

3   percent, respectively. While those adjusted results

4   remain well below a reasonable estimate of the Company's

5   Cost of Equity, they do demonstrate the sensitivity of

6   witness Baudino's results to reasonable changes in the

7   growth rate assumption.

8

9 Q. Does witness Baudino discuss other growth rate estimates

10   in his testimony?

11

12 A. Yes, witness Baudino states that he "utilized the

13   sustainable growth formula", which (as discussed in more

14   detail below) he appears to have taken from Value Line's

15   projected "Retained to Common Equity" rate.[85] As witness

16   Baudino explains, the estimate is calculated as the

17   product of the expected earned return on common equity

18   ("R"), and the retention ratio (*i.e.,* the portion of

19   earnings not paid out in dividends, or "B").[86]

20

21 Q. Do you agree with witness Baudino's sustainable growth

22   rate estimate?

23

24 A. No, I do not. The Sustainable Growth model assumes that

25   growth is a function of expected earnings, and the extent

---

[85] direct testimony of Richard A. Baudino, at 23-24. The sustainable
      growth rates reported in Exhibit RAB-9 are equal to Value Line's
      reported projections for Retained to Common Equity, as shown in
      Document No. 23 of my exhibit.
[86] *Ibid.*

to which those earnings are retained (that is, not paid out in dividends. As discussed below, witness Baudino relies on the simplest form of the Sustainable Growth model, which sometimes is referred to as the "B x R" approach (where "B" is the earnings retention rate, and "R" is the expected Return on Common Equity). As Document No. 23 of my exhibit demonstrates, the B x R method is essentially equal to Value Line's "Retained to Common Equity" rate (differences are due to rounding).

If witness Baudino is going to consider a form of Sustainable Growth, he should use the "BR + SV" form of the model, which reflects growth from both internally generated funds (*i.e.*, the "BR" term) and from issuances of equity (*i.e.*, the "SV" term). As noted above, the first term is the product of the retention ratio (*i.e.*, "B", or the portion of net income not paid in dividends) and the expected return on equity (*i.e.*, "R"). The "SV" term can be represented as:

$$\left(\frac{m}{b} - 1\right) \times Growth\ Rate\ in\ Common\ Shares$$

Where:

$$\frac{m}{b} = The\ Market\ to\ Book\ Ratio$$

52

In this form, the "SV" term reflects an element of growth as the product of (1) the growth in shares outstanding and (2) that portion of the market-to-book ratio that exceeds unity.

In addition, it is important to realize that for the purpose of setting utility rates, the Sustainable Growth method of estimating long-term growth requires an estimate of the earned Return on Common Equity. Since the "R" in the "B x R" approach refers to the equity return, witness Baudino effectively has pre-supposed the Return on Common Equity projected by Value Line for his proxy group companies. Notwithstanding that witness Baudino has assumed the reasonableness of Value Line's projections for the purpose of his Sustainable Growth calculation, as demonstrated in Document No. 23 of my exhibit, his recommended Cost of Equity of 9.30 percent is 117 basis points below the mean Return on Common Equity estimate (for his proxy group) of 10.47 percent.

Q. Putting aside those concerns, did witness Baudino use the sustainable growth estimate in arriving at his DCF estimate?

A. No, he did not. Exhibit RAB-9, page 2 provides the DCF

1   calculations that support witness Baudino's ROE

2   recommendation; that page does not reference the

3   Sustainable Growth estimate.[87]   In addition, I have

4   replicated witness Baudino's Exhibit RAB-9, page 2 (*see*

5   Document No. 22 of my exhibit), and confirmed that

6   witness Baudino's DCF estimates do not include his

7   Sustainable Growth estimate.

8

9   ***Multi-Stage DCF Analysis***

10   **Q.**   Given witness Baudino's concern with Value Line's

11   Earnings Per Share growth rate estimate for Otter Tail

12   Corporation and his use of dividend growth rate

13   projections in the Constant Growth DCF model, is there a

14   second form of the DCF model that may be considered?

15

16   **A.**   Yes, as discussed in my response to witness Gorman

17   (above), I have considered the results of a Multi-Stage

18   DCF model.

19

20   ***Capital Asset Pricing Model***

21   **Q.**   Please summarize witness Baudino's CAPM analyses.

22

23   **A.**   As noted earlier, witness Baudino performs two sets of

24   CAPM analyses. His first set calculates two Market Risk

25   Premium measures, which rely on the forecasted market

---

[87]   *Ibid.*, at 25. *See* also Exhibit RAB-9.

1   total return as determined using Value Line projections,

2   and five and 20-year Treasury security yields (*i.e.*, 0.87

3   percent and 2.77 percent, respectively). Witness Baudino

4   calculates a total growth rate for the market of 11.43

5   percent, using the average of the book value and earnings

6   growth forecasts (9.22 percent and 13.64 percent,

7   respectively) for all companies covered by Value Line.

8   Witness Baudino combines that average growth rate with

9   Value Line's average expected dividend yield of 0.75

10   percent for the same group of companies, and calculates

11   an expected market return of 12.18 percent.[88]

12

13   Witness Baudino's two Market Risk Premium measures

14   represent the difference between (1) his calculated

15   expected market total return, and (2) the current yield

16   on five and 20-year Treasury securities. Witness Baudino

17   arrives at his CAPM results using the average Value Line

18   Beta coefficient of 0.71 for his proxy companies.[89]

19

20   Witness Baudino's second set of CAPM analyses calculate

21   the geometric and arithmetic mean long-term annual

22   returns on stocks, and long-term annual income returns on

23   long-term government bonds, resulting in two historical

24   measures of the Market Risk Premium.[90] witness Baudino

25   uses those two Market Risk Premium measures in

---

[88]   *Ibid.*, at 28-31. *See* also Exhibit RAB-10 and Exhibit RAB-11.
[89]   *Ibid.*, at 28-30. *See* also Exhibit RAB-10.
[90]   The difference between the return on stocks and the income return on
       government bonds represents the historical Market Risk Premium.

1   combination with the current 20-year Treasury bond yield

2   and the average Value Line Beta coefficient to calculate

3   two additional CAPM results.[91]

4

5   Although witness Baudino advises the Commission to

6   consider only his DCF results in establishing the

7   Company's ROE,[92] he does report CAPM results ranging from

8   6.10 percent to 9.44 percent, reasoning that those

9   results indicate that his 9.30 percent ROE recommendation

10   is "generous".[93]

11

12   Q.   Do you agree with witness Baudino's application of the

13   CAPM and his interpretation of its results?

14

15   A.   No, there are two areas in which I disagree with witness

16   Baudino: (1) the term of the Treasury security used as

17   the risk-free rate component of the model; and (2) the

18   calculation of the Market Risk Premium.   In addition, for

19   the reasons discussed throughout my rebuttal testimony, I

20   disagree that witness Baudino's 9.30 percent ROE

21   recommendation is "generous".

22

23   Q.   Turning first to the risk-free rate component, why do you

24   disagree with witness Baudino's use of five and 20-year

25   Treasury securities as the measure of the risk-free rate?

---

[91]   *See* direct testimony of Richard A. Baudino, at 29-31.   *See* also
       Exhibit RAB-11.
[92]   *Ibid.*, at 31-32.
[93]   *Ibid.*, at 31-32.

56

A. As discussed below, the tenor of the risk-free rate used in the CAPM should match the life (or duration) of the underlying investment. As noted by Morningstar:

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the time horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[94]

Pratt and Grabowski recommend a similar approach to selecting the risk-free rate: "In theory, when determining the risk-free rate and the matching ERP you should be matching the risk-free security and the ERP with the period in which the investment cash flows are expected."[95]   To that point, a 2004 paper titled *Applying*

---

[94]   Morningstar, Inc., <u>2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook</u>, at 44.

[95]   Shannon Pratt and Roger Gabrowski, <u>Cost of Capital: Applications and Examples</u>, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92. "ERP" is the Equity Risk Premium.

The Capital Asset Pricing Model by Robert Harris reviews current practices for application of the CAPM and, when summarizing best current practices, concludes "[t]he risk-free rate should match the tenor of the cash flows being valued."[96] As a practical matter, equity securities represent a perpetual claim on cash flows; 30-year Treasury bonds are the longest-maturity securities available to match that perpetual claim.

One measure of the term of expected cash flows is Equity Duration. In finance, "duration" (whether for bonds or equity) typically refers to the present value weighted time to receive the security's cash flows. In terms of its practical application, duration is a measure of the percentage change in the market price of a given stock in response to a change in the implied long-term return of that stock. A common investment strategy is to "immunize" the portfolio by matching the duration of investments with the term of the underlying asset in which the funds are invested, or the term of a liability being funded.

As demonstrated in Document No. 24 of my exhibit, the average Equity Duration of the companies in witness Baudino's proxy group is approximately 26.70 years.

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[96] Paper cited with permission of author.

1   Given that relatively long Equity Duration, and knowing
2   that utility assets are comparatively long-lived, I
3   continue to believe that it is appropriate to use the
4   long-term Treasury yield as the measure of the risk-free
5   rate.
6
7 Q. Is witness Baudino's assumption that five and 20-year
8   Treasury yields are equally valid measures of the risk-
9   free rate supported by his data?
10
11 A. No, it is not.   As discussed above, the mean Equity
12   Duration of the companies in witness Baudino's proxy
13   group is 26.70 years.   In comparison, the current
14   duration of five-year, 20-year and 30-year Treasuries are
15   4.88, 15.15, and 19.14 years respectively.[97]   While the
16   duration of even the longest-term Treasury security falls
17   short of the average Equity Duration for witness
18   Baudino's proxy group, the 30-year Treasury yield
19   provides the longest available duration and, therefore,
20   the best available security for that purpose.   The
21   principle of duration is relevant to the electric utility
22   stocks that comprise witness Baudino's proxy group, given
23   that institutional investors own (on average) 63.45
24   percent of those companies' shares.[98]
25

---

[97]   *See* Document No. 25 of my exhibit.
[98]   *See* Document No. 26 of my exhibit.

59

1   Q.   Putting aside the issue of Equity Duration, does witness

2   Baudino's DCF model recognize the perpetual nature of

3   equity?

4

5   A.   Yes, it does. As witness Baudino correctly observes, the

6   Constant-Growth DCF model assumes growth in perpetuity:

7   "the stream of income from the equity share is assumed to

8   be perpetual; that is, there is no salvage or residual

9   value at the end of some maturity date (as is the case

10   with a bond)." [99]

11

12 Q.   What would be the effect of assuming the companies in

13   witness Baudino's proxy group only provided cash flows to

14   equity investors over five or 20 years?

15

16 A.   As shown in Document No. 27 of my exhibit, assuming a 20-

17   year holding period, the mean and median DCF would be

18   2.83 percent, and 2.89 percent, respectively.

19   Interestingly, both of those ROE estimates are nearly

20   equal to witness Baudino's assumed 2.77 percent risk-free

21   rate (i.e., six month average of the 20-year Treasury

22   yield).[100] Assuming a holding period of five years

23   produces mean and median ROE estimates of negative 34.46

24   percent and negative 34.66 percent, respectively. The

25   only way witness Baudino's DCF results could be realized

---

[99]   direct testimony of Richard A. Baudino, at 15.
[100]   Exhibit RAB-10, page 2.

1   is if the shares were sold at the end of the five and 20-

2   year holding periods, *and* the prices at which they are

3   sold reflect cash flows in perpetuity. Those results

4   support the point made earlier in my testimony: the risk-

5   free rate should reflect the perpetual nature of equity.

6   Since the longest-dated Treasury security is 30 years,

7   that is the appropriate term for this purpose.

8

9   Q.   What is your response to witness Baudino's suggestion

10   that "the risk-free rate should have no interest rate

11   risk?" [101]

12

13   A.   The process of duration matching mitigates interest rate

14   risk. In any event, if witness Baudino is concerned with

15   interest rate risk *per se*, he should focus exclusively on

16   short-term Treasury Bills as the risk-free rate. Doing

17   so, of course, would further decrease his already-low

18   CAPM estimates. Consequently, I disagree with witness

19   Baudino's position that interest rate risk disqualifies

20   the 30-year Treasury yield as the appropriate measure of

21   the risk-free rate.

22

23   Q.   What concerns do you have with witness Baudino's *ex-ante*

24   Market Risk Premium ("MRP") calculations?

25

---

[101]   direct testimony of Richard A. Baudino, at 43.

A. In arriving at his *ex-ante* Market Risk Premium estimates, witness Baudino calculates the expected market return using an average of earnings growth projections (13.64 percent) and book value growth projections (9.22 percent).[102] As noted above, academic research indicates investors rely on estimates of earnings growth in arriving at their investment decisions. The analysis presented in Document No. 21 of my exhibit (discussed in more detail above) also demonstrates book value growth rates are not a statistically significant indicator of electric utility company valuations. In that regard, witness Baudino did not include book value growth projections in his proxy group DCF analysis; he has not explained why it is reasonable to include those growth rates in his MRP analysis but exclude them from his proxy company DCF analyses. Excluding book value growth estimates from witness Baudino's market return calculation would increase his MRP estimate by 2.21 percentage points (221 basis points).[103]

Q. Do you agree with witness Baudino's use of historical estimates of the MRP?

A. No, I do not. As witness Baudino notes, using historical data to estimate the current MRP is "rather suspect

---

[102] *Ibid.*, at 28-30 and RAB-10.
[103] 2.21 percent equals 13.64 percent less 11.43 percent.

1   because it naively assumes that investors currently

2   expect historic risk premiums to continue unchanged into

3   the future regardless of present or forecasted economic

4   conditions."[104] witness Baudino also cites to Brigham,

5   Shome, and Vinson, noting that the MRP varies over time,

6   and that historical estimates are sensitive to the period

7   over which they are measured.[105] Nonetheless, witness

8   Baudino presents CAPM analyses using both geometric and

9   arithmetic average historical MRP estimates (4.70

10   percent, and 6.70 percent, respectively);[106] those

11   estimates are significantly below the forward-looking MRP

12   calculations discussed above.

13

14   Witness Baudino similarly notes "[t]here is no real

15   support for the proposition that an unchanging,

16   mechanically applied historical risk premium is

17   representative of current investor expectations and

18   return requirements."[107] Despite those reservations,

19   witness Baudino presents CAPM analyses that rely on

20   historical measures of the Market Risk Premium, and

21   points to those results as support for the position that

22   his 9.30 percent ROE recommendation is "generous".[108]

23

24 **Q.**   Please briefly summarize witness Baudino's comments

25   regarding your *ex-ante* CAPM analyses?

---

[104]   direct testimony of Richard A. Baudino, at 29.

[105]   *Ibid.*

[106]   *See* Exhibit RAB-10. *See also*, direct testimony of Richard A. Baudino, at 31. The MRPs are calculated as the average (geometric and arithmetic) stock return less the income-only portion of bond returns over the period 1926 to 2012.

[107]   direct testimony of Richard A. Baudino, at 30.

[108]   *Ibid.*, at 32.

1   **A.**   witness Baudino disagrees with my Sharpe Ratio-derived

2   Market Risk Premium, noting "it is highly unlikely that

3   investors would use such an unorthodox method to derive

4   their expected market risk premium and CAPM return."[109]

5   witness Baudino further suggests that the forecasted

6   Treasury bond yields relied upon in my CAPM analyses are

7   "speculative at best and *may or may not* come to pass."[110]

8

9   **Q.**   Do you agree with witness Baudino's concerns in that

10   regard?

11

12   **A.**   No, I do not. As to the Sharpe Ratio method, as

13   discussed in my direct testimony that approach is meant

14   to capture the interaction among expected volatility,

15   interest rates, and the Market Risk Premium.[111] However,

16   in order to narrow the scope of issues in dispute, my

17   updated analyses do not rely upon the Sharpe Ratio

18   calculation of the MRP. Rather, I continue to rely on

19   two *ex-ante* estimates of the MRP derived from Constant

20   Growth DCF model estimates of the total market return.

21

22   Regarding the use of projected interest rates, it is

23   important to remember that, as witness Baudino states,

24   "[r]eturn on equity analysis is a forward-looking

25   process."[112] In that regard, witness Gorman, witness

---

[109]   *Ibid.*, at 43.
[110]   *Ibid.*, at 42-43 [emphasis added].
[111]   direct testimony and Exhibits of Robert B. Hevert, at 32-33.
[112]   direct testimony of Richard A. Baudino, at 22.

1 Woolridge, and I consider forward looking estimates of

2 the risk-free rate.[113] Even if witness Baudino is

3 concerned that the projections may not come to pass, the

4 increases in forward long-term Treasury yields discussed

5 earlier in my rebuttal testimony demonstrate that

6 investors believe interest rates are likely to rise.

7 Since our analyses are predicated on market expectations,

8 the expected increase in Treasury yields (as reflected in

9 increasing forward rates) is a measurable and relevant

10 data point.

11

12 ***Bond Yield Plus Risk Premium Approach***

13 Q. What concerns does witness Baudino express regarding your

14   Bond Yield Plus Risk Premium analyses?

15

16 A. Witness Baudino suggests that the Bond Yield Plus Risk

17   Premium method is "imprecise and can only provide very

18   general guidance," and notes that "[r]isk premiums can

19   change substantially over time." In summary, witness

20   Baudino likens the approach to a "blunt instrument". [114]

21   As to its application, witness Baudino disagrees with the

22   use of projected Treasury yields in calculating the range

23   of Risk Premium-based results.[115]

24

25 Q. What is your response to witness Baudino's observations?

---

[113] *See* direct testimony of Michael P. Gorman, at 41. *See* also direct
       testimony of J. Randall Woolridge, at 42.
[114] direct testimony of Richard A. Baudino, at 44 [clarification added].
[115] *Ibid.*

A.   As to witness Baudino's point that the Risk Premium can change over time, I agree: as noted in my direct testimony (and as discussed in my response to witness Gorman), there is a statistically significant negative relationship between long-term Treasury yields and the Equity Risk Premium.[116] Given witness Baudino's observation that interest rates have declined since 2002,[117] the Bond Yield Plus Risk Premium analysis provides an empirically and theoretically sound method of quantifying the relationship between the Cost of Equity and interest rates. That is, it provides a method to quantify the change that witness Baudino has observed.

As to witness Baudino's notion that the approach is a "blunt instrument," I disagree. As shown in Document No. 6 of my exhibit, the R-squared of the Bond Yield Plus Risk Premium regression analysis is 0.70, indicating a rather high degree of explanatory value.[118] In comparison, Beta coefficients calculated based on the Value Line methodology have a mean R-squared of only 0.42 (*see* Document No. 28 of my exhibit).[119]

As Document No. 29 of my exhibit demonstrates, using the 95.00 percent confidence interval of the Bond Yield Plus Risk Premium regression's equation coefficient estimates,

---

[116]   *See* direct testimony of Robert B. Hevert, at 38.

[117]   *See* direct testimony of Richard A. Baudino, at 4. *See* also, Exhibit RAB-2.

[118]   R-squared is a measure of what percentage of the variation on the dependent variable is explained by variation in the independent variable of a regression equation.

[119]   witness Baudino relies exclusively on Value Line as his source of Beta coefficients. Value Line derives the Beta coefficient from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Composite Index over a period of five years. As noted earlier, while witness Baudino does not include his CAPM estimates in calculating his ROE recommendation, he does point to those results in determining that his recommendation is "generous".

1 the ROE results range from 9.67 percent to 11.45 percent.

2 That 178 basis point range is well less than the range of

3 DCF model results reported by witness Baudino (7.38

4 percent to 10.07 percent, or 269 basis points). It also

5 is considerably less than the range of CAPM results

6 reported by witness Baudino (6.10 percent to 9.44

7 percent, or 334 basis points).[120] Consequently, the Bond

8 Yield Plus Risk Premium approach provides empirically and

9 theoretically sound results that can be used, at minimum,

10 to assess the wide range of ROE results produced by

11 witness Baudino's analyses in general, and his 9.30

12 percent recommendation in particular.

13

14 ### Flotation Costs

15 Q. Please now summarize witness Baudino's response to your

16   proposed flotation cost adjustment.

17

18 A. Witness Baudino believes it is "likely that flotation

19   costs are already accounted for in current stock prices"

20   and that an adjustment to the DCF result would amount to

21   "double counting."[121] In addition, witness Baudino notes

22   that TECO Energy has stated that it does not plan to

23   raise new equity to fund its capital investment

24   program.[122]

25

---

[120] *See* Exhibit RAB-9, Exhibit RAB-10, and Exhibit RAB-11.
[121] direct testimony of Richard A. Baudino, at 47.
[122] *Ibid.*, at 48.

1   **Q.**   Do you agree with witness Baudino's concerns?

2

3   **A.**   No, I do not. Witness Baudino states that "[m]ultiplying

4   the dividend yield by a 4 percent flotation cost

5   adjustment, for example, essentially assumes that the

6   current stock price is wrong and that it must be adjusted

7   downward to increase the dividend yield and the resulting

8   Cost of Equity."[123]

9

10   The flotation cost estimate used in my direct testimony,

11   however, is well below 4.00 percent, and the adjustment is

12   calculated by dividing the dividend yield by a factor of

13   (1 - flotation costs).[124] Moreover, witness Baudino's

14   suggestion that current prices "likely" account for

15   flotation costs is misplaced. First, because of direct

16   issuance costs (such as those provided in Document No. 8

17   of my exhibit to my direct testimony), the net proceeds

18   received by the Company were less than the market price of

19   the offerings. Absent a direct recovery of those costs,

20   the ROE should be adjusted to reflect that deficiency

21   (which will persist in perpetuity).[125]

22

23   I also note that while witness Baudino suggests that

24   current prices "likely" account for flotation costs, he

25   has provided no analyses as to what costs are reflected in

---

[123]   *Ibid.*, at 48.

[124]   See direct testimony and Exhibit of Robert B. Hevert, Exhibit No.__(RBH-1), Document No. 8 of my exhibit.

[125]   *Ibid.*, at 49-50; *see* also Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc. (2006), at 330-332.

1   prices, or how prices have adjusted in response to those

2   costs. Conversely, my direct testimony provided a summary

3   of direct costs incurred by TECO Energy to acquire the

4   equity capital needed to fund the Company's rate base.[126]

5

6   *Relative Risk and Financial Integrity*

7   **Q.** Do you agree with witness Baudino's position that his ROE

8   estimate is "conservative" in that his proxy group has a

9   lower average credit rating than Tampa Electric?[127]

10

11   **A.** No, I do not. Credit ratings are directed toward the

12   interests of debt investors. The view that differences

13   in credit ratings "notches" among investment grade

14   utilities can be used as a proxy for differences in the

15   Cost of Equity also fails to recognize the senior

16   position that debt holders have relative to equity

17   holders, and the investment horizon considered by equity

18   holders. For example, a long-term issuer credit rating

19   is an opinion regarding the subject company's overall

20   financial capacity to pay its financial obligations as

21   they come due and payable.[128] The claims of equity

22   holders, however, are subordinate to the claims of debt

23   holders.

24

25   Because equity holders bear the residual risk of

---

[126]   *See* direct testimony and Exhibit of Robert B. Hevert, Document No. 8
of my exhibit, Page 1 of 2.

[127]   direct testimony of Richard A. Baudino, at 17.

[128]   *See* Standard & Poor's Ratings Direct, *Standard & Poor's Ratings
Definitions*, June 22, 2012, at 6.

1   ownership, when bondholders are given more comfort in the

2   probability that the subject company will be able to meet

3   its near-term financial obligations (and thus have higher

4   credit ratings), equity holders still bear the

5   incremental risk of insufficient or increasingly volatile

6   cash flows over the long-term.   For that fundamental

7   reason, it is not clear that there is a direct

8   relationship between credit notches and the Cost of

9   Equity.

10

11   Q.   Did you perform any analyses to determine whether witness

12   Baudino's data supports the assumption that there is a

13   quantifiable difference in the Cost of Equity for

14   companies with different bond credit ratings?

15

16   A.   Yes, I did.   I first produced Constant Growth DCF results

17   for each of the comparison companies using the growth

18   rates and dividend yields reported by witness Baudino.   I

19   then applied "credit scores" to witness Baudino's

20   comparison companies by converting the S&P bond ratings

21   reported in his direct testimony to a numerical value.[129]

22   If there is a quantifiable relationship between the proxy

23   companies' credit ratings and Cost of Equity, there

24   should be a positive, statistically significant

25   relationship between the credit score and the DCF

---

[129]   For example, the S&P bond credit rating A was assigned a value of 1,
        A- was assigned a value of 2, and so forth.

70

1 results. That is, as credit quality deteriorates

2 (resulting in a higher score), the Cost of Equity should

3 increase. I therefore performed a regression analysis,

4 in which the dependent variable was the DCF result, and

5 the explanatory variable was the credit score. As shown

6 in Document No. 30 of my exhibit, the regression analysis

7 showed no statistically significant statistical

8 relationship between the two. In fact, the R-squared of

9 the regression was only 1.81 percent which indicates that

10 credit ratings accounted for only 1.81 percent of the

11 change in the DCF-estimated Cost of Equity.[130]

12

13 Q. Does the fact that Standard & Poor's ranks Tampa Electric

14 as having an "Excellent" Business Risk Profile and

15 "Significant" Financial Risk indicate they have less risk

16 than other electric utilities?[131]

17

18 A. No, it does not. A recent review of regulated electric

19 utilities credit ratings from S&P highlighted the

20 prevalence of "Excellent" business risk profiles among

21 electric utilities.[132] Of 173 electric utility parent and

22 operating companies, S&P reported that 153 companies

23 (i.e., approximately 88.00 percent) had "Excellent"

24 business risk profiles. Among those with "Excellent"

25 business risk profiles, S&P's credit ratings ranged from

---

[130] As a point of reference (as noted earlier in my response to witness Baudino), my Risk Premium regression analyses has an R-Squared of approximately 70.00 percent.

[131] See direct testimony of Richard A. Baudino, at 9.

[132] See Standard & Poor's, *U.S. Regulated Electric Utilities, Strongest to Weakest*, October 12, 2012.

as high as AA- to as low as BB+ (*i.e.,* below investment grade). Similarly, approximately 51.00 percent of the companies had a "Significant" financial risk profile or better; those companies' S&P credit ratings ranged from AA- to BBB- (*see* Document No. 31 of my exhibit). As such, Tampa Electric's "Excellent" business risk and "Significant" financial risk profile from S&P does not distinguish the Company as being less risky than other electric utilities, nor does it insulate the Company from the detrimental effects of witness Baudino's ROE recommendation.

Q. Has witness Baudino expressed any concerns with your consideration of the business risks associated with Tampa Electric's high level of capital expenditures?

A. Yes. Witness Baudino suggests that the Company's credit rating already accounts for the risk of high capital expenditure levels, and that the magnitude of the Company's capital expenditure plans is in the bottom quintile or third of (depending on projection year) of the companies included in SNL's industry report.[133]

Q. What is your response to witness Baudino's position?

---

[133] *See* direct testimony of Richard A. Baudino, at 45-46.

1   **A.**   Regarding Tampa Electric's credit rating, as noted above

2   that credit ratings reflect the perspective of debt

3   holders and do not reflect the incremental risk faced by

4   equity holders. Moreover, the data provided by SNL

5   reports each company's planned investments on an absolute

6   basis; it does not provide context for the investments

7   relative to the reporting companies' size. As such, I

8   calculated the ratio of expected capital expenditures to

9   net assets for each of the companies in witness Baudino's

10   proxy group (see Document No. 32 of my exhibit).[134] For

11   the projected period from 2014-2018, I performed that

12   calculation using the Company's projected capital

13   expenditures over that period relative to its projected

14   total net assets as of December 31, 2014. For the proxy

15   companies, I relied on projected capital expenditure

16   projections from Value Line.[135] As discussed in my direct

17   testimony, Tampa Electric expects to invest $350 million

18   each year for the next five years to support system

19   reliability and modest customer growth, and an additional

20   $610 million relating to the Polk Power Station combined

21   cycle conversion.[136] Tampa Electric's 54.38 percent ratio

22   of projected capital expenditures to rate base was above

23   the mean and median of witness Baudino's proxy group

24   (50.61 percent and 48.74 percent, respectively).

25

---

[134] As witness Baudino points out on page 16 his direct testimony, the
intent of his proxy group is to develop a "group of companies with a
risk profile that is reasonably similar to Tampa Electric." As such
for the purpose of this analysis, I relied on witness Baudino's proxy
group and Value Line, a source on which witness Baudino relies.

[135] I note that Mr. Baudino relies on Value Line projections of dividend
growth in his DCF analysis.

[136] direct testimony of Robert B. Hevert, at 40.

V. RESPONSE TO OPC WITNESS WOOLRIDGE AS IT RELATES TO THE COMPANY'S COST OF EQUITY

Q. Please provide a brief summary of witness Woolridge's testimony and ROE recommendation.

A. Witness Woolridge recommends an ROE of 9.00 percent (assuming common equity ratio of 50.00 percent), which represents the upper end of his DCF and CAPM results; he recommends an ROE of 8.75 percent if the Commission adopts the Company's proposed capital structure.[137] In developing his ROE recommendation, witness Woolridge relies primarily on the Constant Growth DCF model, which reflects a variety of growth measures, including growth in dividends, book value, and earnings. Although witness Woolridge gives "greater weight" to his Constant Growth DCF model, he suggests that his ROE recommendation is supported by currently low interest rates and low "expected returns on financial assets."[138]

Q. What are the principal areas of disagreement between you and witness Woolridge?

A. The principal areas of disagreement include: (1) the composition of our respective proxy groups; (2) the growth rates applied in the Constant Growth DCF model;

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[137]   direct testimony of J. Randall Woolridge, at 50.
[138]   *Ibid.*, at 50.

74

1   (3) the application of the CAPM; (4) the reasonableness

2   of the Bond Yield Plus Risk Premium analysis; (5) the

3   effect of current capital market conditions on the

4   Company's ROE; and (6) the Company's proposed capital

5   structure as it relates to the Cost of Equity.

6

7   *Proxy Group Selection*

8   **Q.** Please describe the screening criteria by which witness

9   Woolridge developed his proxy group.

10

11   **A.** Witness Woolridge relies on six screening criteria to

12   develop his group of 34 companies:

13   1. Each company selected must be listed as an Electric

14   Utility by Value Line and as an Electric Utility or

15   Combination Electric and Gas company by AUS

16   Utilities Report;

17   2. Proxy companies must derive at least 50.00 percent

18   of revenues from regulated electric operations;

19   3. Selected companies must have an investment grade

20   bond rating as reported by AUS Utilities Report;

21   4. Companies must have a consistent dividend record

22   with no cuts or omissions for the past three years;

23   5. Each company must not be involved in an acquisition,

24   or be the target of an acquisition in the past six

25   months; and

75

1   6. Proxy companies must have long-term EPS growth

2   forecasts available from Yahoo!, Reuters, or

3   Zacks.[139]

4

5   **Q.** Do you agree with the screening criteria that witness

6   Woolridge applied?

7

8   **A.** Not entirely. Although we do have certain criteria in

9   common (for example we both exclude companies that are

10   party to a significant corporate transaction or that do

11   not consistently pay dividends), I do not believe that

12   witness Woolridge's screens render a group of companies

13   that is sufficiently comparable to Tampa Electric.

14

15 **Q.** What is your concern with witness Woolridge's use of

16   revenue, rather than income, as a screening criterion.

17

18 **A.** Measures of income are far more likely to be considered

19   by the financial community in making credit assessments

20   and investment decisions than are measures of revenue.

21   From the perspective of credit markets, measures of

22   financial strength and liquidity are focused on cash from

23   operations, which is directly derivative of earnings, as

24   opposed to revenue. As part of its rating methodology,

25   Moody's assigns a 40.00 percent weight to measures of

---

[139]   *Ibid.*, at 11-12.

financial strength and liquidity, of which 22.50 percent specifically relates to the ability to cover debt obligations with cash from operations.[140]

Just as rating agencies focus on measures of cash from operations, equity analysts likewise prefer measures of income in assessing equity valuation levels. Common measures of valuation, for example, include the Price/Earnings ratio, the Price/Earnings to Growth ("PEG") ratio and the ratio of Enterprise Value/EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization). The reason, of course, is that measures of revenue can obscure the assessment of the underlying value of the subject company. Energy marketing businesses, for example, typically are characterized by high volumes and comparatively low margins. Consequently, focusing on revenue may mislead the analyst into assuming that such segments are the primary driver of long-term growth, when, as a practical matter, the majority of earnings and cash flows are derived from other business segments. In this instance, in which we are considering whether the underlying utility is the predominant source of long-term growth, it could be misleading to focus on revenue rather than earnings.

---

[140] *See, Rating Methodology, Regulated Electric and Gas Utilities,* Moody's Global Infrastructure Finance, August 2009, at 13.

1   Document No. 20 of my exhibit summarizes the reasons that
2   I have excluded many of the companies included in witness
3   Woolridge's 34-company proxy group.

4

5   **_Application of the Constant Growth DCF Analysis_**

6   Q.   Please summarize the differences between you and witness
7   Woolridge regarding the Constant Growth DCF model.

8

9   A.   As a preliminary matter, I note that witness Woolridge's
10   analysis produces an average DCF result of 8.70 percent[141]
11   (which is five basis points below witness Woolridge's
12   8.75 percent ROE recommendation).   I strongly disagree
13   that a DCF result as low as 8.70 percent is relevant in
14   determining the Company's Cost of Equity.   As noted
15   earlier, not only is witness Woolridge's DCF result 180
16   basis points below the Commission's recent decision in
17   Docket No. 120015-EI, there has not been a single case in
18   which an ROE as low as 8.70 percent was authorized for an
19   electric utility since at least 1980.[142]   As discussed
20   below, witness Woolridge's low DCF results are largely
21   explained by the growth rates that he has applied in his
22   analysis.

23

24   Q.   What growth rates does witness Woolridge include in his
25   Constant Growth DCF analysis?

---

[141] Exhibit JRW-10, page 1 of 6. Reflects "Panel A" results.
[142] Source: Regulatory Research Associates.

A.   Witness Woolridge arrives at his assumed growth rate based on a review of a number of data points, including: historical and projected DPS, BVPS, and EPS growth rates as reported by Value Line; consensus EPS growth rate projections from First Call, Reuters, and Zacks; and an estimate of "sustainable growth." Witness Woolridge indicates that he has given more weight to projected EPS growth rates in arriving at his 4.50 percent growth rate estimate.[143]

As to the use of projected earnings growth rates, witness Woolridge asserts that there is an upward bias in those estimates and as such, "the DCF growth rate needs to be adjusted downward from the projected EPS growth rate."[144] Witness Woolridge also discusses the weaknesses he perceives in relying solely on forecasted EPS growth rates for the purpose of the DCF model.[145] Despite those concerns, witness Woolridge relies on projected EPS growth rates from First Call, Reuters, and Zacks, as well as an estimate of Sustainable Growth.

Q.   Does witness Woolridge express any specific concerns with your use of analysts' earnings growth projections in your DCF models?

---

[143]   *See* direct testimony of J. Randall Woolridge, at 38.
[144]   direct testimony of J. Randall Woolridge, at 36.
[145]   direct testimony of J. Randall Woolridge, at 56 - 57.

1   A.   Yes, witness Woolridge argues that analysts' earnings

2   growth estimates are "overly optimistic and upwardly-

3   biased", and that relying on such estimates is a

4   methodological error.[146]   It is important to note,

5   however, that while witness Woolridge's position is based

6   on his observations with respect to the broad market, he

7   has provided no evidence that any of the growth rates

8   used in my DCF analysis are the result of a consistent

9   and pervasive bias on the part of the analysts providing

10   those projections.

11

12   Q.   What is your response to witness Woolridge in that

13   regard?

14

15   A.   First, in light of restrictions imposed by the October

16   2003 Global Research Analyst Settlement, it is unclear

17   how or why utility analysts' estimates would continue to

18   be biased, as witness Woolridge suggests.   That

19   settlement required financial institutions to insulate

20   investment banking from analysis, prohibited analysts

21   from participating in "road shows", and required the

22   settling financial institutions to fund independent

23   third-party research.[147]   To that point, a 2010 article in

24   *Financial Analyst Journal* found that analyst forecast

25   bias has declined significantly or disappeared entirely

---

[146]   *See* direct testimony of J. Randall Woolridge, at 55.

[147]   The 2002 Global Financial Settlement resolved an investigation by the
        U.S. Securities and Exchange Commission and the New York Attorney
        General's Office of a number of investment banks related to concerns
        about conflicts of interest that might influence the independence of
        investment research provided by equity analysts.

since the final judgment was issued in October 2003:

> Introduced in 2002, the Global Settlement and related regulations had an even bigger impact than Reg FD on analyst behavior. After the Global Settlement, the mean forecast bias declined significantly, whereas the median forecast bias essentially disappeared. Although disentangling the impact of the Global Settlement from that of related rules and regulations aimed at mitigating analysts' conflicts of interest is impossible, forecast bias clearly declined around the time the Global Settlement was announced. These results suggest that the recent efforts of regulators have helped neutralize analysts' conflicts of interest.[148]

Based on a review of disclosures contained in recent analyst reports for certain of the proxy companies, it is apparent that the standard industry practice is to avoid conflicts of interest by ensuring that compensation is not, either directly or indirectly, linked to the opinions contained in those reports. In fact, some go so far as to demonstrate the specific factors that determine compensation, including the accuracy of earnings estimates, which creates a disincentive for either over-

---

[148] Armen Hovakimian and Ekkachai Saenyasiri, *Conflicts of Interest and Analyst Behavior: Evidence from Recent Changes in Regulation*, Financial Analysts Journal, Volume 66, Number 4, July/August 2010, at 105. I recognize that witness Dr. Woolridge also refers to this article in his Appendix B.

1   or under-estimating earnings.[149]

2

3   Q.   Please summarize witness Woolridge's analyses regarding

4   the use of consensus earnings growth rate projections.

5

6   A.   Witness Woolridge compares the actual three-to-five-year

7   EPS growth rates and forecasted EPS growth rates for all

8   the companies covered by I/B/E/S.[150]   His results

9   indicate that on average, for all industries covered by

10   I/B/E/S, analysts' projected EPS growth rates have

11   exceeded historical EPS growth.   As witness Woolridge

12   notes, however, there were "negative forecast errors"

13   (*i.e.*, analysts' EPS forecasts understated actual growth

14   in EPS) following the recessions of 1991 and 2001.[151]

15   Witness Woolridge performs a similar analysis using

16   I/B/E/S-covered electric and gas utilities.   Witness

17   Woolridge draws his conclusions regarding the accuracy of

18   analysts' long-term earnings growth rates based on the

19   forecast error experienced across all industries covered

20   by I/B/E/S, as well as the I/B/E/S-covered utilities from

21   1994 through 2008, suggesting that the proxy companies

22   likewise are susceptible to persistent and biased

23   forecast errors.[152]

24

25   Q.   Do you agree with witness Woolridge's assertion in that

---

[149]   *See* for example, BMO Capital Markets, Viewpoint, September 18, 2012,
        at 8.

[150]   Institutional Brokerage Estimate Service (I/B/E/S).

[151]   *See* direct testimony of J. Randall Woolridge, Exhibit JRW-16,
        Appendix B, at 9.

[152]   *Ibid.*, at 13-14.

1   regard?

2

3 **A.**   No, I do not.   While witness Woolridge suggests that

4   "long-term EPS growth rate forecasts of Wall Street

5   securities analysts are overly optimistic and upwardly

6   biased,"[153] and that growth rates for utilities display a

7   similarly upward bias,[154] when viewed in the context of

8   our respective proxy groups, analysts have been more

9   likely to under-estimate, than over-estimate earnings.

10

11 **Q.**   Please describe the analysis you performed to address

12   witness Woolridge's assumption that the proxy companies'

13   earnings growth estimates are biased.

14

15 **A.**   The analysis examines the extent to which the consensus

16   forecast earnings either under- or over-estimated annual

17   earnings from 2002 through 2012 for each of the proxy

18   companies used by either witness Woolridge or me.   Based

19   on data provided by Bloomberg, Document No. 33 of my

20   exhibit demonstrates that the average annual difference

21   between actual and projected earnings (that is, the

22   "Earnings Surprise") for companies in either my proxy

23   group or witness Woolridge's proxy group was 1.45

24   percent.   That is, on average, actual earnings exceeded

25   projected earnings for our combined proxy groups. Over

---

[153]   Direct testimony of J. Randall Woolridge, at 35.
[154]   *See* direct testimony of J. Randall Woolridge, Exhibit JRW-16, Appendix B, at 13-14.   *See* also Exhibit JRW-16, Appendix B1, Page 1 of 6.

1   that period, analysts were 1.67 times more likely to

2   under-estimate, than to over-estimate annual earnings. On

3   that basis, there is no basis to conclude that the

4   earnings projections included in our analyses are likely

5   to be systemically biased.

6

7   I understand that annual earnings estimates are not the

8   long-term growth rate projections used in the Constant

9   Growth DCF model. However, if witness Woolridge is

10   correct and earnings projections are overly optimistic it

11   would stand to reason that such a bias would exist in

12   annual forecasts as well. As demonstrated above, that

13   has not been the case. If anything, analysts covering

14   the proxy group companies are somewhat conservative.

15

16 Q. What is your response to witness Woolridge's reference to

17   the 2010 article by McKinsey & Company ("McKinsey") in

18   support of his assertion that your DCF model relies on

19   biased growth rates?[155]

20

21 A. The McKinsey article is general in nature, and does not

22   indicate that there is a systemic bias on the part of

23   utility analysts. In fact, while the article focuses on

24   analysts' projections for the S&P 500, utilities are only

25   one of ten sectors, and currently represent only 3.30

---

[155]   Exhibit JRW-16, Appendix B1, Page 3 of 6.

percent of the index.[156] Although he points to the article as support for this position that I should not have relied exclusively on utility analysts' presumably biased growth rate projections, witness Woolridge does not point out where the article states that any such bias extends to the utility sector, or whether it is concentrated in other, less stable industry sectors.

Moreover, witness Woolridge neglects to point out that the article observes that "…long-term earnings growth for the market as a whole is unlikely to differ significantly from growth in GDP, as prior McKinsey research has shown."[157] In a footnote to that sentence, McKinsey further states that "Real GDP has averaged 3 to 4 percent over past (sic) seven or eight decades, which would indeed be consistent with nominal growth of 5 to 7 percent given current inflation of 2 to 3 percent."[158] The McKinsey article therefore supports the growth rates used in my Constant Growth and Multi-Stage DCF models: both are within the 5.00 percent to 7.00 percent range noted by McKinsey, and the terminal growth rate estimate used in my Multi-Stage DCF analysis represents the combination of historical real GDP growth and expected inflation.[159]

---

[156] McGraw Hill Financial, *S&P Dow Jones Indices*, August 5, 2013.

[157] McKinsey & Company, McKinsey on Finance, Number 35, Spring 2010, *Equity Analysts: Still too bullish,* at 16-17.

[158] Ibid., at 17.

[159] Please also note that consistent with the McKinsey approach, the terminal growth rate used in my Multi-Stage DCF model is the product of real GDP growth (3.22 percent) and expected inflation (2.45 percent).

Q. Do you agree with witness Woolridge's position that dividend and book value growth rates are appropriate measures of expected growth for the Constant Growth DCF model?[160]

A. No, I do not. It is important to note that earnings growth enables both dividend and book value growth. That is, book value can increase over time only through the addition of retained earnings, or with the issuance of new equity. Both of those factors are derivative of earnings: retained earnings increases with the amount of earnings not distributed as dividends; and the price at which new equity is issued is a function of the EPS and the then-current P/E ratio. Similarly, as noted in my response to witness Baudino, earnings are the fundamental driver of a company's ability to pay dividends.[161]

In addition, Value Line is the only service relied on by witness Woolridge that provides DPS, BVPS, or Sustainable Growth projections. To the extent that the earnings projections services such as Zacks and First Call represent consensus estimates, the results are less likely to be biased in one direction or another as a result of an individual analyst.

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[160] direct testimony of J. Randall Woolridge, at 31.
[161] *See* also direct testimony and Exhibit of Robert B. Hevert, at 24.

1   Lastly, as shown in Document No. 34 of my exhibit, I
2   recreated witness Woolridge's DCF analysis, relying on
3   each of the average projected analyst growth estimates
4   and the dividend yield in Exhibit JRW-10.[162] The results
5   based on the DPS and BVPS growth rates are 8.64 percent,
6   while the average result based on the EPS growth rates is
7   9.38 percent. While I do not believe that 9.38 percent
8   is a reasonable estimate of Tampa Electric's ROE, it is
9   63 basis points higher than witness Woolridge's
10 recommendation (assuming the Company's proposed equity
11 ratio).

13 Q. Do you have any further observations regarding the growth
14   rates used in witness Woolridge's DCF analysis?

16 A. Yes. First, it is interesting to note that in his
17   "Building Blocks" approach to developing the equity risk
18   premium, witness Woolridge has established an expected
19   long-run nominal growth rate of 5.40 percent.[163] As
20   witness Woolridge notes, it is not uncommon for analysts
21   to use an estimate of long-term economic growth as a
22   proxy for the long-term growth of the firm.[164] Given
23   witness Woolridge's expected dividend yield of 4.20
24   percent, the DCF result would be approximately 9.60
25   percent.[165] While that result is still below a reasonable

---

[162] I also eliminated all growth rates less than or equal to zero as such
       estimates violate the basic assumption of the Constant Growth DCF
       model that dividends will grow in perpetuity.

[163] *See* direct testimony of J. Randall Woolridge, Exhibit JRW-16,
       Appendix C, at 2-3. 5.40 percent equals the sum of the Expected
       Inflation amount of 2.75 percent and the Real Earnings Growth Rate of
       2.65 percent. Using the convention assumed earlier in my rebuttal
       testimony, the nominal growth rate would be [(1.0275 x 1.0265)-1], or
       5.47 percent. That estimate is only 12 basis points removed from my
       5.59 percent long-term growth estimate.

[164] *See* direct testimony of J. Randall Woolridge, at 61.

[165] *See* Exhibit JRW-10, at 1 of 6. The estimated dividend yields include
       the one-half year convention for calculating the expected dividend
       yield.

1   estimate of the Company's Cost of Equity, it is

2   approximately 60 to 90 basis points above witness

3   Woolridge's DCF results, and 60 to 85 basis points higher

4   than his recommended ROE. Looking to witness Woolridge's

5   Exhibit JRW-14, page 2 of 3, the average growth rate of

6   6.36 percent would produce a DCF estimate of 10.56

7   percent, which is within my recommended range.

8

9   **Q.**   Those differences aside, do you believe witness

10   Woolridge's DCF analyses produce reasonable estimates of

11   Tampa Electric's Cost of Equity?

12

13   **A.**   No, I do not. The results of any given model must be

14   interpreted in the context of current capital market

15   conditions. Witness Woolridge's DCF analysis suggests an

16   ROE estimate that is 225 to 255 basis points below the

17   Company's currently authorized return, and 180 basis

18   points below the Commission's recent decision regarding

19   FP&L's Cost of Equity. As discussed in Section II,

20   current capital market conditions cannot account for such

21   a significant deviation.

22

23   *Application of the CAPM*

24   **Q.**   Please briefly describe witness Woolridge's CAPM analysis

25   and results.

1   **A.**   Witness Woolridge's CAPM analysis produces an estimated

2   Cost of Equity of 7.50 percent to 7.80 percent.[166] While

3   witness Woolridge places greater weight on his DCF

4   analysis, he nonetheless relies on his CAPM analysis in

5   determining what he considers to be an appropriate range

6   of the Company's Cost of Equity.[167] As with witness

7   Woolridge's DCF results, I strongly disagree that a CAPM

8   result of 7.80 percent (or lower) has any analytical

9   value in determining the Company's ROE. As discussed

10   below, witness Woolridge's rather low CAPM estimates are

11   primarily the result of his estimated Market Risk

12   Premium.

13

14   **Q.**   Please describe how witness Woolridge calculated his

15   Market Risk Premium estimate.

16

17   **A.**   Witness Woolridge reviewed a series of studies that

18   calculated the MRP using different methodologies; he also

19   considered the results of his "Building Blocks" approach.

20   Based on those reviews, witness Woolridge concluded that

21   the MRP ranges from 4.50 percent to 5.50 percent and

22   within that range, the midpoint of 5.00 percent is

23   reasonable.[168] Witness Woolridge cites the results of

24   three surveys, and suggests that his results are

25   consistent with the views of Chief Financial Officers

---

[166]   Exhibit JRW-11, Page 1 of 6.
[167]   *See* direct testimony of J. Randall Woolridge, at 49.
[168]   *Ibid.*, at 48.

("CFO"), professional forecasters, and financial analysts.[169]

Q. What is your response to witness Woolridge on those points?

A. First, in referring to the *Duke CFO Survey* by Professors Graham and Harvey, witness Woolridge concludes that his estimated MRP is consistent with those used by CFOs.[170] In addition to certain measures of expected market returns, recent versions of the survey also asked respondents to provide their Weighted Average Cost of Capital ("WACC"), and Hurdle Rates.[171] Those two metrics are measures of the required, as opposed to the expected return. It also is important to note that the WACC includes both debt and equity; to the extent there is any debt in the capital structure, the WACC will be less than the Cost of Equity. In that regard, the mean WACC reported in the most recent survey for which those particular estimates were included, was 9.30 percent, and the mean Hurdle Rate was 13.50 percent.[172] Those rates, which are well in excess of the reported expected return, are more appropriate measures of required returns and are similar to the market returns of 12.72 percent and 13.44 percent in my updated calculation of the MRP.[173]

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[169] *Ibid.*, at 45.
[170] *Ibid.*, at 48.
[171] The survey has not provided the results of these questions since June 2012.
[172] *See, The Duke CFO Business Outlook Survey*, June 2012 Results, Table 10. The prevailing MRP based on the June 2012 survey was 4.50 percent with a Treasury bond yield of 1.80 percent and an expected return of 6.30 percent.
[173] *See* Document No. 3 of my exhibit.

Second, by referring to the survey by the Federal Reserve Bank of Philadelphia, witness Woolridge suggests that his estimated MRP is consistent with those used by professional forecasters.[174] On reviewing that survey, I note that it does not specify whether the expected returns for the S&P 500 represent *total* returns or only capital appreciation. Specifically, the survey asks: "What do you expect to be the annual average [stock return] over the next ten years for the S&P 500?"[175] To the extent the Philadelphia Fed survey results include only capital gains but not dividends, the survey would understate the total return that investors expect.

Further, while the Survey of Professional Forecasters for the first quarter of 2013 considered the responses of 46 economists and financial forecasters, only 24 survey participants responded to the question regarding the expected return for the S&P 500 over the next ten years.[176] Similarly, only 26 responded to the questions regarding expected return on ten-year Treasury bonds.

Lastly, witness Woolridge cites a study by Pablo Fernandez, which found that the median MRP "employed by U.S. analysts and companies was 5.7 percent."[177] That study also discusses how the required equity risk premium

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[174] *See* direct testimony of J. Randall Woolridge, at 48.
[175] Federal Reserve Bank of Philadelphia, Survey of Professional Forecasters, First Quarter of 2013, at 7.
[176] *Ibid.*, at 17.
[177] direct testimony of J. Randall Woolridge, at 48.

1   is commonly calculated using the Constant Growth DCF

2   model:

3   The [Implied Equity Premium] is the implicit

4   [Required Equity Premium] used in the valuation

5   of a stock (or market index) that matches the

6   current market price. The most widely used

7   model to calculate the [Implied Equity Premium]

8   is the dividend discount model: the current

9   price per share (P_0) is the present value of

10   expected dividends discounted at the required

11   rate of return (Ke). If d_1 is the dividend per

12   share expected to be received in year 1, and g

13   the expected long term growth rate in dividends

14   per share,

15       $P_0 = d_1 / (Ke - g)$, which implies:

16   [Implied Equity Premium] $= d_1/P_0 + g - R_f$[178]

17

18   As explained in my direct testimony (and as discussed in

19   my response to witness Baudino), I calculated the *ex-ante*

20   MRP in a similar manner, using the market capitalization

21   weighted average Constant Growth DCF result for the

22   individual companies in the S&P 500 Index.

23

24 Q. Did witness Woolridge's express any concerns regarding

25   your CAPM analysis?

---

[178] Pablo Fernandez, Javier Aguirreamalloa and Pablo Linares, *Market Risk Premium and Risk Free Rate used for 51 countries in 2013: a survey with 6,237 answers, IESE Business School, June 26, 2013, at 14.*

1 **A.** Witness Woolridge's primary disagreement with my CAPM

2   analysis involves the Market Risk Premium component of

3   the model. As to my use of expected market returns,

4   witness Woolridge states that the result is "inflated due

5   to errors and bias in [my] study."[179] Witness Woolridge

6   also points to the long-term EPS growth rates for the S&P

7   500 of 10.88 percent and 10.93 percent based on the data

8   from Bloomberg and Capital IQ, respectively,[180] and notes

9   that they "are not consistent with historic as well as

10   projected economic and earnings growth."[181]

11

12 **Q.** Turning to witness Woolridge's position that the EPS

13   growth rates used to develop your estimated market return

14   are too high, did you consider where your estimates fall

15   within the range of historical observations?

16

17 **A.** Yes, I gathered the annual capital appreciation return on

18   Large Company Stocks reported by Morningstar for the

19   years 1926 through 2012, produced a histogram of those

20   observations, and calculated the probability that a given

21   capital appreciation return estimate would be observed.

22   The results of that analysis, which are presented in

23   Document No. 35 of my exhibit, demonstrate that capital

24   appreciation rates of 10.00 percent to 11.00 percent and

25   higher actually occurred quite often. In fact, the 10.88

---

[179] direct testimony of J. Randall Woolridge, at 62 [clarification added].

[180] *Ibid.*, at 59.

[181] *Ibid.*, at 60.

1   percent and 10.93 percent estimates, which witness

2   Woolridge asserts are "overstated" by historical

3   standards represent the 50th percentile of the actual

4   capital appreciation rates observed from 1926 to 2012

5   (*see* Document No. 36 of my exhibit).

6

7   ***Bond Yield Plus Risk Premium Analysis***

8   **Q.** Please summarize witness Woolridge's response to your

9   Bond Yield Plus Risk Premium analysis.

10

11   **A.** Witness Woolridge believes that the Risk Premium derived

12   from the analysis is "inflated" and "is a study of

13   *Commission* behavior, not a study of *investor* behavior."[182]

14   Based on the fact that Market-to-Book ratios for electric

15   utilities have generally exceeded 100.00 percent, witness

16   Woolridge suggests "that authorized rates of return have

17   been greater than the return that investors require."[183]

18   Witness Woolridge concludes that as a result, the Bond

19   Yield Plus Risk Premium analysis overstates the actual

20   ROE because, in his view, it "tends to perpetuate any

21   past errors, and over time could become entirely

22   disconnected from financial market realities."[184] Lastly,

23   witness Woolridge believes that the approach is circular

24   in that it relies on the outcome of past rate cases to

25   determine the current Cost of Equity.[185]

---

[182]   *Ibid.*, at 66.
[183]   *Ibid.*, at 67.
[184]   *Ibid.*
[185]   *Ibid.*

1 Q. What is your response to witness Woolridge on those
2 points?

3

4 A. As to his concern that Market/Book ("M/B") ratios above
5 unity suggest authorized returns in excess of required
6 returns, I note that the M/B ratio for the companies in
7 the SNL Electric index, witness Woolridge's proxy group,
8 and my proxy group have been significantly greater than
9 1.00 since at least 2000 (*see* Document No. 37 of my
10 exhibit). It appears, then, that witness Woolridge
11 believes that utility commissions have been consistently
12 wrong for the last 13 years.

13

14 It also is important to note that the M/B ratio equals the
15 market value (or stock price) per share, divided by the
16 total common equity (or the book equity) per share. Book
17 value per share is an accounting construct, which reflects
18 historical costs. In contrast, market value per share
19 (*i.e.*, the stock price) is forward-looking, and is a
20 function of many variables, including (but not limited to)
21 expected earnings and cash flow growth, expected payout
22 ratios, measures of "earnings quality", the regulatory
23 climate, the equity ratio, expected capital expenditures,
24 and the expected return on book equity.[186] Because the
25 numerator (market value per share) and the denominator

---

[186] *See* for example, Roger A. Morin, New Regulatory Finance, Public
Utility Reports, Inc., 2006, at 366. Please note that Dr. Morin
cites several academic articles that address the various factors that
affect the Market-to-Book ratio for utilities. In addition, the
notion that book values should be set at a value approaching unity by
regulatory commissions has been refuted for many years. As noted by
Stewart Meyers in 1972: "In short, a straightforward application of
the cost of capital to a book value rate base does not automatically
imply that the market and book values will be equal. This is an
obvious but important point. If straightforward approaches did imply
equality of market and book values, then there would be no need to
estimate the cost of capital. It would suffice to lower (raise)
allowed earnings whenever markets were above (below) book." Stewart
C. Meyers, *The Application of Finance Theory to Public Utility Rate
Cases*, The Bell Journal of Economics and Management Science, Vol. 3,
No. 1 (Spring 1972), at 76.

(book value per share) are a function of different variables, M/B ratios over 100.00 percent do not necessarily imply that regulatory commissions have been consistently incorrect with respect to the returns that they have authorized.

Further, as noted in my direct testimony, the *Hope* and *Bluefield* guidelines establish that the fair rate of return on equity should be comparable to returns investors expect to earn on other investments of similar risk.[187] Assuming that regulatory commissions appropriately weigh the results of various models, analyses and expert testimony presented before them in order to determine a fair ROE that meets the *Hope* and *Bluefield* standards, authorized ROEs may be used as a proxy for investor return requirements.

Witness Woolridge's criticism of the Bond Yield Plus Risk Premium analysis would, therefore, only be valid if regulatory commissions consistently and significantly over or understated the Cost of Equity. Given that witness Woolridge does not provide any additional support for this claim beyond his general observation that M/B ratios for electric utilities have been greater than 100.00 percent, I disagree with his conclusion.

---

[187] *See* direct testimony of Robert B. Hevert, at 7-9.

Capital Market Conditions

Q. What are witness Woolridge's general observations regarding the current economic environment and its effect on the cost of capital?

A. Witness Woolridge states that "capital costs for utilities, as indicated by long-term bond yields, are still at historically low levels, even given the increase in these rates over the past two months."[188] In support of his position, witness Woolridge points to the significant intervention by the Federal Reserve, and decreases in bond yields since the peak of the economic crisis.[189] Witness Woolridge further suggests that because A-rated utility bonds have decreased by approximately 150 basis points since the Company's existing ROE was authorized, capital costs have decreased by the same amount.[190]

Q. What is your response to witness Woolridge's observations?

A. Witness Woolridge focuses his analysis on the low level of Treasury yields and bond yields through June 2013. As illustrated in Document No. 38 of my exhibit, however, the ten-year Treasury bond yield increased 95 basis

---

[188] *See* direct testimony of J. Randall Woolridge, at 50.
[189] *Ibid.*, at 8-9.
[190] *Ibid.*, at 10.

1 points and the yield on Moody's A-rated utility bonds
2 increased 84 basis points from May 1, 2013 through July
3 12, 2013. That is, the recent increase in interest rates
4 has sustained itself beyond June 2013. In any case (and
5 as discussed earlier in my rebuttal testimony), both
6 current and forward interest rates are well above the
7 levels that prevailed in December 2012 (that is, at the
8 time of the reported decision date in Docket No. 120015-
9 EI; *see* Document No. 40 of my exhibit).

11 Moreover, as discussed in my direct testimony (and in my
12 response to Messrs. Gorman and Baudino), there is an
13 inverse relationship between interest rates and the
14 Equity Risk Premium. While interest rates have fallen
15 since April 2009, the Equity Risk Premium has increased,
16 suggesting that the Cost of Equity has not decreased in
17 tandem with interest rates.[191] As such, witness
18 Woolridge's review of the relatively low levels of the
19 ten-year Treasury yields and long-term A-rated bond
20 yields does not support his 8.75 percent to 9.00 percent
21 ROE recommendation.

23 *Capital Structure and the Cost of Equity*

24 Q. Please summarize witness Woolridge's position on the
25   Company's Cost of Equity as it relates to the Company's

---

[191]   *See* Documents No. 6 and 18 o my exhibit.

1   capital structure.

2

3 **A.**   As noted earlier, witness Woolridge's ROE recommendation

4   is dependent on the capital structure approved by the

5   Commission in this proceeding. Specifically, witness

6   Woolridge recommends an ROE of 8.75 percent if the

7   Commission adopts the Company's proposed capital

8   structure. If, however, the Commission adopts the

9   capital structure proposed by OPC witness O'Donnell,

10   witness Woolridge recommends an ROE of 9.00 percent.[192]

11

12 **Q.**   In your direct testimony, you calculated the

13   capital structures for the proxy group companies to

14   assess the reasonableness of Tampa Electric's proposed

15   capital structure. Have you performed a similar

16   analysis of witness Woolridge's proxy group?

17

18 **A.**   Yes. As discussed in my direct testimony, I analyzed the

19   actual capital structures in place at the operating

20   companies held within my proxy group. Doing so removes

21   the effect of capital used to support unregulated

22   operations, and reflects the nature of assets financed by

23   vertically integrated utilities such as Tampa Electric.

24   The operating utility company capital structures reflect

25   a range of equity ratios range from a low of 47.99

[192]   *See* direct testimony of J. Randall Woolridge, at 17, 18.

99

1   percent to a high of 57.81 percent. As shown in Document

2   No. 39 of my exhibit, I updated that analysis to include

3   more recent data; that analysis provides a range of

4   equity ratios range from 47.75 percent to 58.38 percent.

5   While I disagree with many of the parent companies

6   included in witness Woolridge's peer group, I have

7   calculated the range and average equity for the utility

8   operating companies held within that group as well.

9   Witness Woolridge's proxy group companies' equity ratios

10 range from a low of 45.01 percent to a high of 59.79

11 percent. On that basis, the Company's proposed capital

12 structure which includes a 54.20 percent common equity

13 ratio remains highly consistent with those of the utility

14 operating companies held within my and witness

15 Woolridge's proxy groups.

16

17 Q. Do the capital structures in place at the operating

18   companies differ from those of the consolidated parent

19   companies?

20

21 A. Yes, they do. As shown in Exhibit JRW-4, the average

22   capital structure for witness Woolridge's proxy group

23   companies at the consolidated level includes 45.90

24   percent common equity. As shown in Document No. 39 of my

25   exhibit, for witness Woolridge's proxy group, the average

100

1   capital structure at the combined operating company level

2   includes 51.78 percent common equity. This demonstrates

3   that consolidated company capital structures can

4   understate the average electric utility common equity

5   ratio by more than 5.00 percentage points. That is, for

6   the companies in witness Woolridge's proxy group, it is

7   typical for the utility operating companies to have

8   higher equity ratios than the consolidated parent

9   companies. Therefore, witness Woolridge's comparison of

10   the proxy companies' consolidated capital structures is

11   inappropriate.

12

13   Q. What is your conclusion with respect to the Company's

14   proposed capital structure and its effect on the

15   Company's Cost of Equity?

16

17   A. I conclude that the Company's proposed 54.20 percent

18   equity ratio is consistent with industry practice. I

19   therefore disagree that the Company's ROE should be

20   adjusted downward by 25 basis points, as witness

21   Woolridge suggests.

22

23   **VI. RESPONSE TO FRF WITNESS CHRISS AS IT RELATES TO THE**

24   **COMPANY'S COST OF EQUITY**

25   Q. Please briefly summarize witness Chriss' testimony as it

1   relates to the Company's Return on Equity.

2

3 **A.** As a preliminary matter, I note that witness Chriss does

4   not perform an independent analysis of the Company's Cost

5   of Equity.   Rather,   he   reviews   data   for   65   reported

6   electric   utility   rate   cases   (as   reported   by   SNL

7   Financial),   which   ranged   from   9.00   percent   to   10.50

8   percent, with an average of 9.97 percent and median of

9   10.00 percent.   Removing the effect of distribution-only

10   electric   utilities,   witness   Chriss   calculates   an   average

11   authorized   ROE   of   10.05   percent.[193]   Regarding   the

12   Commission's   decisions   in   the   Gulf   Power   Company   case

13   (Docket No. 110138-EI),   and FP&L case (Docket No. 120015-

14   EI),   witness   Chriss   observes   that   the   authorized   ROEs   of

15   10.25 percent and 10.50 percent, respectively, are below

16   my specific ROE recommendation.[194]

17

18 **Q.** Are   there   other   distinctions   that   are   important   to

19   consider when reviewing Exhibit SWC-3?

20

21 **A.** Yes, there are.   The Company's credit rating and outlook

22   depend   substantially   on   the   extent   to   which   rating

23   agencies   view   the   regulatory   environment   credit

24   supportive,   or   not.[195]   Moody's,   for   example,   finds   the

25   regulatory   environment   to   be   so   important   that   50.00

[193]   *See* direct testimony of Steve W. Chriss, at 10 and Exhibit SWC-3.
[194]   *Ibid.*, at 9.
[195]   *See* direct testimony of Robert B. Hevert, at 61.

1   percent of the factors that weigh in the Company's
2   ratings determination are determined by the nature of
3   regulation.[196]   Similarly, Standard & Poor's has noted
4   that:

5   The assessment of regulatory risk is perhaps
6   the most important factor in Standard & Poor's
7   Ratings Services' analysis of a U.S. regulated,
8   investor-owned utility's business risk. Each of
9   the other four factors we examine--markets,
10   operations, competitiveness, and management--
11   can affect the quality of the regulation a
12   utility experiences, but we believe the
13   fundamental regulatory environment in the
14   jurisdictions in which a utility operates often
15   influences credit quality the most.[197]

16

17 Given the Company's need to access external capital, and
18 in light of the weight that both Moody's and S&P place on
19 the nature of the regulatory environment, I believe that
20 it also is important to consider the extent to which the
21 jurisdictions included in Exhibit SWC-3 are considered by
22 rating agencies to be credit supportive.

23

24 Q. As a point of reference, is Florida generally considered
25   a credit-supportive regulatory jurisdiction?

---

[196]   Moody's *Global Infrastructure Finance, Regulated Electric and Gas Utilities*, August 2009, at 4.
[197]   Standard & Poor's, *Utilities: Assessing U.S. Utility Regulatory Environments*, updated November 15, 2011.

1   A.   Yes, it is. S&P ranks regulatory jurisdictions according

2   to the degree of credit-supportiveness. Florida is ranked

3   "Credit Supportive," which is the second highest tier to

4   which any jurisdiction in Exhibit SWC-3 is assigned.[198]

5

6   Q.   How did you take those rankings into consideration in

7   reviewing Exhibit SWC-3?

8

9   A.   I first replicated Exhibit SWC-3, and ensured that I was

10   able to calculate the same mean and median results.   I

11   then applied S&P's rankings (as represented by a

12   numerical score) to the jurisdictions reported in Exhibit

13   SWC-3 (see Document No. 40 of my exhibit).

14

15 Q.   What did that analysis reveal?

16

17 A.   The principal observation is that the median ROE for

18   companies operating in jurisdictions that are considered

19   at least "Credit Supportive" was 10.25 percent; the

20   median for jurisdictions considered "More Credit

21   Supportive" was 10.30 percent.

22

23 Q.   Lastly, do you have any comments regarding witness

24   Chriss' concern that the Company's proposed ROE is

25   "excessive" in light of the economic circumstances faced

---

[198] Standard & Poor's, *Utilities: Standard & Poor's Revises Its U.S.
Utility Regulatory Assessments*, December 28, 2012, at 3.

1   by its customers?

2

3 **A.** Yes. I appreciate that the decision to seek rate relief

4   is difficult. In my experience, those decisions always

5   consider the effect on customers. Just as low rates are

6   important, so is the financial strength of the incumbent

7   utility. The ability to access the capital markets when

8   and as needed provides the ability to invest in the

9   assets needed to maintain system reliability and to

10   enable growth. In that regard, I also appreciate that

11   the Commission must balance those considerations in

12   arriving at its ROE determination.

13

14   I also note that while witness Chriss speaks of customers

15   generally, his testimony is on behalf of the Florida

16   Retail Federation, and Walmart is a retail customer of

17   Tampa Electric.[199] Although I cannot find financial

18   information regarding all companies represented by the

19   FRF and served by Tampa Electric, I note that based on

20   its most recent report, Value Line assigns Walmart (NYSE:

21   WMT) a Safety Ranking of 1, and a Financial Strength

22   ranking of A++. By comparison, Value Line assigns TECO

23   Energy a Safety Ranking of 2, and a Financial Strength

24   Ranking of B++. By those measures, therefore, TECO Energy

25   is more risky than Walmart. At the same time, Value Line

---

[199] *See* direct testimony and Exhibits of Steve W. Chriss, at 1. I recognize and appreciate that Walmart is a significant customer of Tampa Electric and that it provides both employment and services to the citizens of Florida.

projects Walmart to earn a Return on Common Equity[200] of 20.50 percent in 2014, and 21.00 percent in the 2016 to 2018 period, even considering current and expected economic conditions. Witness Chriss, however, recommends that the Commission authorize Tampa Electric, which Value Line considers to be more risky than Walmart, the opportunity to earn less than one-half of the equity return that Walmart is expected to earn.[201]

VII. RESPONSE TO OPC WITNESS O'DONNELL AS IT RELATES TO THE COMPANY'S CAPITAL STRUCTURE

Q.   Please provide a brief summary of witness O'Donnell's recommendation as it relates to the Company's capital structure.

A.   Witness O'Donnell recommends a capital structure consisting of 49.21 percent long-term debt, 0.79 percent short-term debt, and 50.00 percent common equity. witness O'Donnell arrives at his recommendation as a "middle ground between the Company's requested capital structure and the TECO Energy capital structure."[202] witness O'Donnell also observes the Company's proposed common equity ratio is higher than (1) the average common equity ratio authorized in other jurisdictions; and (2) TECO Energy.[203]   In support of his position, witness

---

[200] Please note that Value Line refers to Return on Common Equity as the "Return on Shareholder's Equity."

[201] For the 2012 fiscal year, the Company's electric operations represented approximately 90.79 percent of TECO Energy's consolidated net income. *See* TECO Energy Inc., SEC Form 10-K for the Fiscal Year ended December 31, 2012, at 44.

[202] direct testimony of Kevin W. O'Donnell, at 26.

[203] *Ibid.*, at 26.

1   O'Donnell presents the December 31, 2012 common equity

2   balances for each of Tampa Electric, Peoples Gas, the

3   company's other non-regulated operations, and TECO

4   Energy, reasoning that since the consolidated equity held

5   at the parent level is less than the sum of the

6   subsidiary equity balances, the Tampa Electric capital

7   structure necessarily reflects the effects of double

8   leverage.[204]

9

10 **Q.**   Do you agree with witness O'Donnell's position that the

11   capital structure should be adjusted to reflect the

12   presumed effect of double leverage?

13

14 **A.**   No, I do not. As discussed in the rebuttal testimony of

15   Sandra W. Callahan, witness O'Donnell's recommendation is

16   inconsistent with the widely accepted practice of

17   utilizing the "stand-alone approach," which treats the

18   utility subsidiary as its own company. Under the stand-

19   alone approach, the cost of capital is determined using

20   the subsidiary's own capital structure and cost of debt

21   and equity; the Cost of Equity is estimated by reference

22   to a proxy group of firms of comparable risk.

23   Importantly, the stand-alone approach recognizes that the

24   return should be based on the relative risk of the

25   investment rather than the source of financing.

---

[204]   *Ibid.*, at 16-17.

1 Q.   Please explain your concern with witness O'Donnell's

2   recommendation relative to the financial community's view

3   of Florida regulation.

4

5 A.   As mentioned elsewhere in my rebuttal testimony, there is

6   no disagreement that Florida is considered a credit-

7   supportive jurisdiction.   As noted earlier, Moody's

8   considers the regulatory structure to be so important

9   that 50.00 percent of the factors that weigh in a ratings

10   determination are related to the nature of regulation.

11   Among the factors considered by Moody's in assessing the

12   regulatory framework are the predictability and

13   consistency of regulatory actions:

14   As the revenues set by the regulator are a

15   primary component of a utility's cash flow, the

16   utility's ability to obtain predictable and

17   supportive treatment within its regulatory

18   framework is one of the most significant

19   factors in assessing a utility's credit

20   quality.   The regulatory framework generally

21   provides more certainty around a utility's cash

22   flow and typically allows the company to

23   operate with significantly less cushion in its

24   cash flow metrics than comparably rated

25   companies in other industrial sectors.

1   ***

2   In situations where the regulatory framework is

3   less supportive, or is more contentious, a

4   utility's credit quality can deteriorate

5   rapidly.[205]

6

7   As also discussed in witness Callahan's rebuttal

8   testimony, if the Commission were to adopt witness

9   O'Donnell's recommendation, it would represent a

10 departure from recent precedent. In light of Moody's

11 focus on "predictable and supportive treatment," I

12 strongly disagree with witness O'Donnell that his

13 recommendation somehow would not have any impact on how

14 credit rating agencies view Tampa Electric. Such a

15 dramatic change by the Commission from previous decisions

16 would create an immediate and lasting concern for

17 investors of the reasonableness of the regulation in

18 Florida.

19

20 **VIII. UPDATED RESULTS**

21 Q. Have you updated the analyses presented in your direct

22   testimony?

23

24 A. Yes. I have updated analyses presented in my direct

25   testimony with data as of July 12, 2013. As noted in my

---

[205] Moody's Investors Service, *Regulatory Frameworks - Ratings and Credit Quality for Investor-Owned Utilities*, June 18, 2010, at 2.

1   response to witness Baudino, I performed the analyses for

2   both the proxy group contained in my direct testimony

3   ("Hevert Proxy Group") and a Combined Proxy Group

4   comprised of all companies included in either the Hevert

5   Proxy Group or witness Baudino's proxy group.

6

7 Q. Please summarize your updated DCF model results.

8

9 A. I have continued to use projected earnings growth rates

10   from Zacks, First Call, and Value Line in developing my

11   Constant Growth DCF model. The results are shown in

12   Document No. 1 of my exhibit. As discussed in my

13   response to witness Gorman, I also have performed a

14   Multi-Stage DCF analysis; those results are presented in

15   Document No. 2 of my exhibit.

16

17 Q. Please summarize your updated CAPM analysis.

18

19 A. Using the same data sources and assumptions, I updated my

20   CAPM analysis with data as of July 12, 2013. For the

21   reasons discussed in my response to witness Baudino, my

22   updated CAPM analyses exclude the Sharpe Ratio based

23   approach of estimating the Market Risk Premium. For the

24   risk-free rate, I continue to refer alternatively to:

25   (1) the 30-day average of the 30-year Treasury yield; (2)

1   a consensus near-term forecast of the average 30-Year

2   Treasury yield; and (3) a consensus long-term forecast of

3   the average 30-Year Treasury yield.   For the Beta

4   coefficient, I continue to rely on published results from

5   Bloomberg and Value Line.   For the MRP, I continue to

6   refer to the form of *ex-ante* market risk premia that I

7   described in my direct testimony.[206]

8

9 **Q.**   What are your updated CAPM results?

10

11 **A.**   As shown in Document No. 5 of my exhibit, based upon

12   updated market information, my CAPM analyses produce a

13   range of ROE estimates from 10.07 percent to 12.71

14   percent for the Hevert Proxy Group.

15

16 **Q.**   Please summarize your updated Bond Yield Plus Risk

17   Premium analysis.

18

19 **A.**   My updated Bond Yield Plus Risk Premium analysis includes

20   authorized ROEs as reported by Regulatory Research

21   Associates through July 12, 2013.   For the purpose of

22   calculating the expected risk premium and ROE, I used the

23   current and projected 30-year Treasury yield.   As shown

24   in Document No. 6 of my exhibit, my updated results range

25   from 10.27 percent to 10.90 percent.

---

[206]   As discussed in my rebuttal testimony, I did not include an estimate
of the Sharpe Ratio-derived Market Risk Premium in my updated
results.   I relied on data from Bloomberg and Value Line for my
updated estimates of the *ex-ante* Market Risk Premium (in my direct
testimony I relied on data from Bloomberg and Capital IQ).

1 Q. Have you considered whether your recommended return meets

2 the standard of a fair rate of return?

3

4 A. Yes. As noted in my direct testimony, my recommendation

5 is based upon my understanding of the *Hope* and *Bluefield*

6 standards.[207] Based on those standards, the consequence

7 of the Commission's Order in this case should enable the

8 Company to earn a fair and reasonable return and maintain

9 its financial flexibility over the period during which

10 rates are expected to remain in effect. My assessment

11 also reflects the Company's need to attract capital at

12 terms similar to those offered to companies of comparable

13 risk. A recommendation that diminishes the Company's

14 ability to compete for capital in the open market does

15 not meet the "comparable company" standard.

16

17 **IX. CONCLUSIONS AND RECOMMENDATION**

18 Q. Please summarize the analyses and conclusions contained

19 in your rebuttal testimony.

20

21 A. My updated analytical results are provided in Document

22 Nos. 1 through 6 of my exhibit. My recommended ROE takes

23 into account the results of these various models and

24 analyses, as well as current and expected capital market

25 conditions. In particular, my analyses and

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[207] *See* direct testimony of Robert B. Hevert at 7-11.

recommendation reflect the recent and substantial increases in current Treasury yields, forward Treasury yields, and current dividend yields. Based on the data and analyses discussed throughout my rebuttal testimony, I conclude that the reasonable range of ROE estimates continues to be from 10.50 percent to 11.50 percent and within that range, 11.25 percent is a reasonable and appropriate estimate of the Company's Cost of Equity.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

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 1   STATE OF FLORIDA    )
                         :            CERTIFICATE OF REPORTER
 2   COUNTY OF LEON      )

 3

 4         I, LINDA BOLES, CRR, RPR, Official Commission
     Reporter, do hereby certify that the foregoing
 5   proceeding was heard at the time and place herein
     stated.
 6
           IT IS FURTHER CERTIFIED that I
 7   stenographically reported the said proceedings; that the
     same has been transcribed under my direct supervision;
 8   and that this transcript constitutes a true
     transcription of my notes of said proceedings.
 9
           I FURTHER CERTIFY that I am not a relative,
10   employee, attorney or counsel of any of the parties, nor
     am I a relative or employee of any of the parties'
11   attorney or counsel connected with the action, nor am I
     financially interested in the action.
12
           DATED THIS 10th day of September
13   2013.

14

15   _____

16            LINDA BOLES, CRR, RPR
     FPSC Official Commission Reporters
17            (850) 413-6734

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