

part 2

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WITNESS SIMS

5/16/2016 10:00 AM

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

Application of

WASHINGTON GAS LIGHT COMPANY

CASE NO. PUE-2016-00001

For authority to increase existing rates and
charges and to revise the terms and
conditions applicable to gas service pursuant
to §56-237 of the Code of Virginia

DIRECT TESTIMONY OF ROBERTA W. SIMS

TABLE OF CONTENTS

<u>Topic</u>	<u>Page</u>
I. Qualifications.....	1
II. Purpose of Testimony	2
III. Identification of Exhibits.....	3
IV. The Need for Rate Relief.....	3
V. Washington Gas's Direct Case Presentation.....	5
VI. Corporate Scorecard	8

INDEX TO SCHEDULES

<u>Topic</u>	<u>Schedules</u>
FY 2015 Corporate Scorecard	Schedule 50a

WASHINGTON GAS LIGHT COMPANY

VIRGINIA

DIRECT TESTIMONY OF ROBERTA W. SIMS

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Roberta W. Sims. I am Vice President of Rates and Regulatory Affairs, Washington Gas Light Company ("Washington Gas" or "Company"). My business address is 6801 Industrial Road, Springfield, Virginia, 22151.

I. QUALIFICATIONS

Q. DESCRIBE YOUR EXPERIENCE WITH THE COMPANY.

A I began my employment with the Company in 1986 as an attorney addressing rates and regulatory matters in the Office of General Counsel. Prior to that time, from 1981 to 1986, I worked at the Public Service Commission of the District of Columbia ("Commission") in various legal capacities. I was named a Vice President of Washington Gas in 1992. I have served in the following roles since that time: August 1992 to 1994, Vice President and General Manager of the District of Columbia Division of Washington Gas; August 1994 to September 2009, Vice President of Corporate Relations; October 2009 to September 2014, Vice President of Regulatory Affairs and Energy Acquisition; and October 2014 to present, Vice President of Rates and Regulatory Affairs.

In my current capacity, I am responsible for coordinating the Company's regulatory activities, including planning and directing rate cases and regulatory compliance and interventions, before the District of Columbia

1 and Maryland Public Service Commissions, the Virginia State Corporation
2 Commission ("SCC") and the Federal Energy Regulatory Commission.

3 **Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?**

4 A. I received a Bachelor of Arts degree from Hampton University and a
5 law degree from Georgetown University.

6 **Q. HAVE YOU TESTIFIED PREVIOUSLY?**

7 A. Yes. I testified before this Commission in Case No. PUE-2010-00139.
8 I also testified before the District of Columbia Public Service Commission in
9 the Company's base rate proceedings in Formal Case Nos. 849, 853, 1093
10 and currently in 1137. In addition, I have testified before the Maryland Public
11 Service Commission in the Company's base rate proceeding in Case No.
12 9322, and in connection with the Company's winter preparedness plans. I
13 have also testified on corporate matters before legislative bodies in the
14 District of Columbia and Maryland.

15 **II. PURPOSE OF TESTIMONY**

16 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

17 A. I provide an overview of the Company's rate case presentation and
18 support the overall justness and reasonableness of the rate relief that
19 Washington Gas seeks in this proceeding. The new rates established in this
20 proceeding will allow the Company an opportunity to earn its authorized rate
21 of return. I also describe the Company's Corporate Scorecard and explain
22 how it is used to measure corporate performance, which, in turn, is tied to
23 short-term incentive compensation.

III. IDENTIFICATION OF EXHIBITS

Q. DO YOU SPONSOR ANY EXHIBITS IN SUPPORT OF YOUR TESTIMONY?

A. Yes, I have one exhibit. The exhibit is the Company's Fiscal Year 2015 ("FY2015") Corporate Scorecard, provided as Schedule 50a, Statement 1.

IV. THE NEED FOR RATE RELIEF

Q. PLEASE DESCRIBE WASHINGTON GAS.

A. Washington Gas has been providing natural gas retail and delivery service to customers for more than 167 years in Virginia, the District of Columbia, and in surrounding areas in Maryland.

Washington Gas's corporate headquarters is located in the District of Columbia and the Company's primary operations facility, Springfield Center, is located at 6801 Industrial Road in Springfield, VA.

As of September 30, 2015, the Company provided natural gas service to customers through approximately 1.1 million meters across its system, including approximately 512,000 meters in Virginia.

Q. WHAT RATE RELIEF DOES WASHINGTON GAS SEEK IN THIS CASE?

A. In this filing, Washington Gas requests an annual base rate increase of \$45.6 million. Of this amount, approximately 48.9% or \$22.3 million represents costs relating to the Company's approved accelerated pipe replacement program established pursuant to the SAVE (Steps to Advance Virginia's Energy Plan) Act. As required by the Act, these costs, which are currently recovered through the SAVE Rider, will be included in new base rates approved by the Commission in this proceeding. As such, \$22.3 million

1 of the requested rate relief does not represent a rate increase above the
2 amount to be collected through the SAVE Rider.

3 **Q. WHAT ARE THE PRIMARY DRIVERS OF THIS RATE CASE?**

4 A. The Company's current rates, approved in Case No. PUE 2010-00139,
5 were implemented on October 1, 2011. Since that time, factors including rate
6 base growth, general inflation, an increase in employee-related costs, and
7 safety and regulatory requirements, have contributed to the increase in the
8 cost of providing gas service to customers. At the same time, incremental
9 revenues in Virginia have been insufficient to support the increase in the
10 costs of providing service. Those factors, combined with the roll-in to base
11 rates of SAVE surcharge revenues, drive the need for a base rate increase.

12 **Q. ARE THE RATES BEING PROPOSED BY WASHINGTON GAS JUST AND**
13 **REASONABLE?**

14 A. Yes. The Company's existing rates no longer reflect the cost of doing
15 business in Virginia and, therefore, do not provide Washington Gas a
16 reasonable opportunity to recover its expenses and earn the authorized rate
17 of return on investment made to provide service to Virginia customers.

18 The direct testimonies of Washington Gas's witnesses in this
19 proceeding demonstrate that the Company has incurred and will continue to
20 incur costs that are necessary to provide safe and reliable utility service to our
21 customers. In fact, we have extensive efforts underway to implement our new
22 customer information and mobile work management systems as well as our
23 new eService portal – all of which are designed to meet the changing
24 expectations of our customers and enhance the customer experience. While
25 we have had challenges with our eService implementation, we are making the

right progress to have the system functioning properly, with our focus continuing to be improved customer service.

Significantly, the Company has maintained its proven record of safety and operational efficiency. Although we strive to control costs, our ability to do so is limited by our obligations to meet safety and regulatory requirements for our customers, employees, shareholders and the public. The rates proposed in this case are designed to recover these properly incurred costs.

V. WASHINGTON GAS'S DIRECT CASE PRESENTATION

Q. WHAT TEST YEAR DOES WASHINGTON GAS PROPOSE IN ITS DIRECT PRESENTATION?

A. This rate case filing is based on a test year consisting of the twelve months ended September 30, 2015. The rate effective period is anticipated to be the twelve months beginning December 1, 2016.

Q. PLEASE INTRODUCE THE COMPANY'S WITNESSES AND IDENTIFY THE ISSUES THEY ADDRESS.

A. The Company supports its request for rate relief with my Direct Testimony and Exhibit, as well as the Direct Testimony and Exhibits of the following 14 witnesses:

- Witness Gunnar J. Gode presents the proposed capital structure and overall cost of capital.
- Witness Robert B. Hevert proposes a reasonable rate of return on common equity ("ROE").
- Witness Robert E. Tuoriniemi presents the Company's jurisdictional cost of service with adjustments that are representative of the rate effective period, and calculates the required annual revenue increase.

- 1 • Witness Aaron B. Gibson presents the support for the Company's
- 2 Normal Weather Study and for the ratemaking, pro forma labor and
- 3 labor-related accounting adjustments.
- 4 • Witness Luanne S. Gutermuth describes and supports Washington
- 5 Gas's employee compensation strategy and approach.
- 6 • Witness Michael Halloran confirms the reasonableness of the
- 7 Company's compensation program both in terms of design and overall-
- 8 pay levels.
- 9 • Witness Ronald B. Edelstein describes Washington Gas's proposal to
- 10 fund research and development initiatives managed by the Gas
- 11 Technology Institute.
- 12 • Witness Melton A. Huey supports the Company request for approval of
- 13 Integrity Management Program cost deferrals.
- 14 • Witness Sean Skulley describes the Company's proposed tariff
- 15 modifications to facilitate improved access to natural gas for citizens of
- 16 the Commonwealth.
- 17 • Witness Paul H. Raab provides support for the direct use of natural
- 18 gas in support of the Company's initiatives to improve access to
- 19 natural gas.
- 20 • Witness David C. Kenahan sponsors the Company testimony
- 21 regarding the recovery of Business Process Outsourcing ("BPO") 2.0
- 22 deferrals.
- 23 • Witness Mark W. Shaver sponsors testimony relating to the
- 24 implementation of the Company's new customer information and
- 25 mobile work management systems.

- Witness Kevin M. Murphy supports the Company request to recover costs associated with former plans to construct a liquefied natural gas peaking facility.
- Witness James B. Wagner supports the Company's proposed rate design and presents the Company's Class Cost of Service study underlying the proposed rates. He also sponsors and explains the Company's proposal to replace its existing Weather Normalization Adjustment ("WNA") and Conservation and Ratemaking Efficiency ("CARE") Ratemaking Adjustment ("CRA") with a Revenue Normalization Adjustment ("RNA").

Q. WHY HAS WASHINGTON GAS REQUESTED APPROVAL OF AN ALTERNATIVE RNA IN THIS CASE?

A. The RNA, as proposed, is an alternative to the current WNA and CRA provisions. The Commission first approved a WNA in Case No. PUE-2006-00059 and first approved the current CRA in Case No. PUE-2012-00138. While accomplishing the same results as the WNA and CRA together, calculations under the proposed RNA will be simpler and more straightforward to evaluate monthly. The details of the RNA implementation, if approved, are provided by Witness Wagner.

If the Commission declines to approve the alternative proposal, Washington Gas will simply maintain the *status quo* of making adjustments through the WNA and CRA.

1 Q. ARE THERE OTHER PROPOSALS IN THE CASE THAT REPRESENT
2 NEW POLICY ISSUES FOR THE COMMISSION'S CONSIDERATION?

3 A. Yes. The Company is requesting modifications to the existing tariff
4 language to address market impediments to customers seeking access to an
5 abundant, low cost natural resource. Witness Skulley describes the proposal
6 and the benefits of lowering greenhouse gas emissions and creating
7 opportunities for future expansion of natural gas service to communities
8 currently not connected to a natural gas pipeline.

9 VI. CORPORATE SCORECARD

10 Q. WHAT IS THE CORPORATE SCORECARD?

11 A. The Corporate Scorecard is a set of operational and financial goals,
12 reviewed and established annually, that provide the balanced framework for
13 corporate performance management. The goals are used to align Washington
14 Gas's business activities with the Company's corporate vision, and provide a
15 measure of organizational performance. The Scorecard for FY2015 is
16 provided as Schedule 50a, Statement 1.

17 Q. WHAT ARE THE CATEGORIES WITHIN THE CORPORATE
18 SCORECARD?

19 A. The Scorecard goals are established across the following areas: (1)
20 Safe Delivery; (2) Performance Improvement; (3) Customer Value; (4)
21 Supplier Diversity; (5) Employer of Choice; (6) Reliable Supply; (7)
22 Sustainability; and (8) Financial Performance.

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1 1 leaks; (3) response time to Code 2 and Code 3 leaks; and (4)
2 damage prevention ratio.

3 (2) Performance Improvement

4 • Operation and Maintenance ("O&M") per Customer - This
5 measurement captures the Company's ability to improve operating
6 costs on a per customer basis.

7 • Construction Unit Cost Attainment - This measurement captures
8 the ability to reduce or minimize unit costs for all the major types of
9 construction performed by the Company.

10 (3) Customer Value

11 • New Meter Additions – This measures meter growth from new
12 construction, conversions and appliance programs.

13 • Customer Engagement – This measurement captures the ability
14 of the Company to build a platform that enables our organization to
15 compete more effectively.

16 • Customer Information System – This measurement captures the
17 performance of the project and our ability to deliver the scope within
18 the planned schedule and approved budget.

19 • Customer Satisfaction - This measurement captures the
20 Company's ability to satisfy customers who have initiated service by
21 telephone or online.

22 (4) Supplier Diversity

23 • This measures the Company's efforts to increase spending with
24 diverse-owned businesses.
25

1 (5) Employer of Choice

2 • Employee Engagement - This measurement captures the level
3 of employee engagement based upon a periodic assessment (every 18
4 months) administered by an outside vendor, compared against the
5 national average, and the Company's subsequent follow-through on
6 items identified in the previous survey as requiring attention.

7 • Community Involvement – This measure demonstrates the
8 Company's commitment to community service through volunteer
9 participation and community activity.

10 (6) Reliable Supply

11 • System Reliability – This measurement captures the number of
12 outages per 100,000 meters.

13 (7) Sustainability

14 • This measurement tracks the Company progress in achieving
15 our 2020 Greenhouse Gas Reduction Goals and creating a culture
16 and corporate processes that support their achievements. The
17 areas of review include: direct spend for pipeline replacements;
18 reduction in fleet CO2 emissions; avoidance of commuter miles
19 driven through teleworking; and the recycling rate.

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21 (8) Financial Performance

22 • Utility ROE - This measurement captures the capability to earn
23 the weighted average return on common equity allowed by the three
24 local commissions that regulate Washington Gas.

25

- Non-Utility Earnings - This measurement captures the ability of WGL Holdings, Inc. to deliver earnings through non-utility activities.

Q. HOW DOES THE CORPORATE SCORECARD IMPACT INCENTIVE COMPENSATION?

A. The calculation of short term incentive payments includes a Corporate Factor and an Individual Factor. The Corporate Factor, which can range from 0.0 to 1.5, is determined based on Corporate Scorecard results. Relative weightings for each Scorecard goal were used to determine the Corporate Factor for FY2015, an approach that has been adopted for FY2016. Under this methodology, each Scorecard goal is assigned a specific percentage weighting which collectively total 100%. The relative ratings used to determine the Corporate Factor for FY2015 were: Employee Work Safety (10%); System Safety/Pipeline Integrity (10%); O&M/Customer (5%); Construction Unit Cost (5%); New Meter Additions (5%); Customer Engagement (5%); Customer Information System (5%); Customer Satisfaction (10%) ; Supplier Diversity (5%); Employee Engagement (5%); Community Involvement (5%); System Reliability (5%); Sustainability (5%); Utility ROE (10%); and Non-Utility Adjusted EBIT (10%).

As I noted earlier, the Scorecard goals relate to safety, service reliability, operational efficiency, customer satisfaction, financial strength and other areas that support ratepayers. By tying the determination of the Corporate Factor to achievement of Scorecard goals, the Company has created a program that creates a direct nexus between incentive compensation and ratepayer benefit.

1 Q. WHAT SUMMARY STATEMENT WOULD YOU MAKE ABOUT
2 WASHINGTON GAS'S USE OF THE CORPORATE SCORECARD?

3 A. The Scorecard reflects our commitment to manage our business with a focus
4 on safety and other management attributes that benefit consumers and other
5 stakeholders.

6 Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

7 A. Yes.

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WITNESS CODE

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DIRECT TESTIMONY OF GUNNAR J. GODE

TABLE OF CONTENTS

<u>Topic</u>	<u>Page</u>
I. Qualifications.....	1
II. Purpose of Testimony	2
III. Identification of Schedules and Exhibits	3
IV. The Company's Financing Strategy.....	4
V. Credit Ratings.....	6
VI. Capital Structure.....	7
VII. Discussion of Financing Activity Since Case No. PUE-2010-00139.....	10
VIII. Cost of Capital to the Company.....	14
IX. Required Rate of Return.....	15

INDEX TO SCHEDULES

<u>Topic</u>	<u>Schedule</u>
Company's Proposed Cost of Capital components.....	Schedule 3, Page 1
Adjustments to actual capital structure.....	Schedule 3, Page 2
Recommended cost of preferred stock	Schedule 4, Page 1
Details of the Company's long-term debt	Schedule 4, Page 2
Proposed cost of the Company's long-term debt	Schedule 4, Page 3, 4
Summary of the Company's hedging activity	Schedule 4, Page 5
Company's job development tax credit amounts & costs	Schedule 4, Page 6
Company's cost of short-term debt	Schedule 5
Comparison of proposed capital structure ratio.....	Schedule 50b, Statement 1
Company's long-term debt activity	Schedule 50b, Statement 2
Adjusted capital structures	Schedule 50b, Statement 3
Proposed rate base and capital structure	Schedule 50b, Statement 4

WASHINGTON GAS LIGHT COMPANY

Virginia

DIRECT TESTIMONY OF GUNNAR J. GODE

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is Gunnar J. Gode. I am Director of Treasury Operations and Financial Systems for Washington Gas Light Company ("Washington Gas" or "Company"). My business address is 101 Constitution Avenue, NW, Washington, D.C. 20080.

I. QUALIFICATIONS

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I received a B.S. degree in managerial economics from Cornell University and a M.B.A. degree from Babson College. I am a Certified Public Accountant in the State of Maryland.

I have been employed by Washington Gas since 2004, holding various positions within the Finance organization. Before entering my current role, I have served as Director of Utility Metrics, Director of Corporate Accounting, and Director of Financial Reporting. In my current role, I am responsible for analyzing and recommending the financing plan for Washington Gas, including the capital structure and related financing transactions. These duties include maintaining corporate liquidity, developing relationships with commercial and investment banks and securities issuance.

Prior to joining Washington Gas, I worked as a business recovery consultant, analyzing business models and recommending strategies to

1 maximize the use of entity assets, and also as a senior accountant at
2 PricewaterhouseCoopers and Grant Thornton, specializing in the high-tech and
3 utility industries, respectively.

4 II. PURPOSE OF TESTIMONY

5 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

6 A. I will address the Company's financing strategy and plans, as well as
7 each of the capital structure components and costs of capital, with the
8 exception of the return on common equity, which is presented by Company
9 Witness Hevert.

10 I recommend an overall rate of return of 8.21% for the Company. This
11 return is based upon the following capital structure and cost rates (subject to
12 rounding considerations), as detailed in Schedule 3, Page 1:

13

	Capitalization (\$000)	Ratio	Cost	Return
Debt				
Long-Term Debt	\$707,582	37.66%	5.87%	2.21%
Short-Term Debt	\$56,219	2.99%	0.16%	0.00%
Total Debt	\$763,801	40.65%		2.21%
Preferred Stock	\$28,173	1.50%	4.79%	0.07%
Common Equity	\$1,081,292	57.55%	10.25%	5.90%
Job Dev. Tax Credits	\$5,646	0.30%	8.46%	0.03%
TOTAL	\$1,878,912	100.00%		8.21%

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1 **III. IDENTIFICATION OF SCHEDULES AND EXHIBITS**2 **Q. DO YOU SPONSOR ANY SCHEDULES OR EXHIBITS IN SUPPORT OF**
3 **YOUR TESTIMONY?**4 **A.** Yes, I sponsor Schedules 3, 4, 5 and 50b, as described in this testimony.

5 The following is a summary of these Schedules.

- 6
-
- 7 • Schedule 3, Page 1 summarizes the Company's proposed cost of
-
- 8 • Schedule 3, Page 2 lists adjustments to the actual capital
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- 9 • Schedule 4, Page 1 provides the recommended cost of preferred
-
- 10 • Schedule 4, Page 2 shows details of the Company's long-term
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- 11 • Schedule 4, Pages 3 and 4 illustrate the proposed cost of the
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- 12 • Schedule 4, Page 5 provides a summary of the Company's
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- 13 • Schedule 4, Page 6 describes the Company's Job Development
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- 14 • Schedule 5, Page 1 computes the Company's cost of short-term
-
- 15 • Schedule 50b, Statement 1, Page 1 compares the proposed
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- 16 • Schedule 50b, Statement 2, Page 1 lists the Company's long-term
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- 17 • Schedule 50b, Statement 3, Page 1 presents the adjusted capital
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- 18 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 19 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 20 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 21 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 22 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 23 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 24 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base
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- 25 • Schedule 50b, Statement 4, Page 1 uses the proposed rate base

1 ¹ Page 39 of Stipulation to Case No. PUE-2010-000139, Appendix A.

IV. THE COMPANY'S FINANCING STRATEGY

Q. PLEASE DISCUSS THE IMPORTANCE OF FINANCIAL PLANNING AND THE PRIMARY OBJECTIVES OF THE COMPANY'S FINANCING STRATEGY.

A. Financial planning prepares the Company to satisfy its short-term and long-term cash requirements on a timely basis so that it can meet its obligations to customers, creditors, employees and stockholders.

A sound financing strategy allows a company to fund its capital requirements at a reasonable cost and to remain flexible in accessing financial markets, even during periods of economic uncertainty or unexpected liquidity requirements.

Q. WHAT FACTORS ARE CONSIDERED IN DEVELOPING A FINANCING PLAN?

A. The starting point in developing a company's financing plan is its capital requirements, consisting of capital expenditures, debt refunding requirements, and working capital needs. These requirements are typically satisfied by operating cash flows (which includes the impact of actual income taxes paid), net of dividends paid on common and preferred stock, with the balance being financed externally. Other factors affecting a company's financial planning include its credit ratings and the economic conditions potentially affecting its industry.

There are complex interrelationships among all of these factors that must be evaluated. For example, the return on equity, the level of equity in the capital structure, and total interest expense all affect interest coverage ratios, a key indicator of credit quality. A company's capital structure and the level of

1 interest coverage are closely evaluated by agencies that determine utility debt
2 ratings. As noted below, maintaining strong debt ratings is a key component in
3 holding down the relative cost of new borrowings, and for a utility company,
4 ultimately, meeting its public service obligation.

5 **Q. HOW DO CUSTOMERS BENEFIT FROM THE COMPANY'S FINANCING**
6 **STRATEGY?**

7 A. By maintaining a relatively strong balance sheet, Washington Gas is
8 consistently able to access the financial markets across different economic
9 cycles and compete for low-cost capital.

10 Washington Gas's financing strategy includes utilizing applicable tax
11 strategies to maximize the availability of zero-cost capital (as represented on
12 the balance sheet as deferred taxes) instead of debt. Deferred taxes are
13 treated as a direct reduction to rate base rather than as a component of capital
14 structure, but the effect is the same. Later in my testimony I describe how the
15 Company makes use of accelerated depreciation and receives the associated
16 tax benefits. Customers benefit from this strategy in two ways. First, deferred
17 taxes reduce rate base, which directly lowers customer's rates. Second, a
18 stronger balance sheet, as evidenced by a lower percentage of interest-bearing
19 debt, supports a higher credit rating for the Company which allows access to
20 low-cost capital, from which customers also benefit. The strength of
21 Washington Gas's financing strategy is demonstrated by comparison to our
22 peer group: when deferred income tax balances are included as part of
23 capitalization, as shown on Schedule 50b, Statement 3, the Company's equity
24 ratio is on par with the median of its peers, while its credit rating remains
25 relatively strong.

1 Q. PLEASE DEFINE FINANCING FLEXIBILITY AND WHY IT IS IMPORTANT.

2 A. Financing flexibility provides a company with the freedom to choose the
3 securities to be issued and the timing of those issuances. A company with
4 financing flexibility is better able to withstand adverse circumstances in financial
5 markets and unexpected financing needs that may arise, such as a sudden
6 and/or temporary change in commodity prices, unexpected cash requirements
7 associated with a company's operations, or factors affecting the industry in
8 general. One example of this is the financial crisis in 2008-2009, during which
9 many companies had difficulty accessing the capital markets. Washington
10 Gas, directly as a result of its strong credit ratings, did not face such difficulties
11 and was able to issue \$50 million of medium-term notes in December 2008.
12 Similarly, Washington Gas was able to access the commercial paper market
13 throughout 2008 and 2009, without needing to draw directly on its back-up
14 credit facility, which has a higher interest cost.

15 V. CREDIT RATINGS

16 Q. WHY ARE CREDIT RATINGS IMPORTANT TO A COMPANY THAT ISSUES
17 SECURITIES IN THE PUBLIC MARKETS?

18 A. Credit ratings are scoring systems applied by three nationally recognized
19 independent organizations (Moody's, Standard & Poor's, and Fitch Ratings) to
20 assess an entity's ability to meet its financial obligations, including the ability to
21 pay interest and principal when due. Each agency applies measures and ratios
22 to entities within government or industry categories to give investors an
23 indication of financial strength relative to peers and other issuers of debt
24 securities. Buyers of debt securities consider an entity's credit rating when
25 evaluating the risk of the investment. In general, the higher a security is rated,

1 the less risky it is to investors, resulting in greater flexibility and lower costs for
2 issuers across a range of market conditions.

3 **Q. WHAT ARE THE COMPANY'S LONG-TERM DEBT CREDIT RATINGS?**

4 A. Washington Gas issues long-term debt primarily in the form of Medium-
5 Term Notes ("MTNs"). Currently, the MTNs of Washington Gas are rated A+ by
6 Standard & Poor's ("S&P"), A1 by Moody's, and AA- by Fitch Ratings. On a
7 relative basis, the Moody's rating is at the same level as S&P's, with both S&P
8 and Moody's being lower than Fitch.

9 **VI. CAPITAL STRUCTURE**

10 **Q. WHAT IS THE APPROPRIATE STARTING POINT IN DETERMINING THE**
11 **COMPANY'S CAPITALIZATION?**

12 A. The appropriate starting point is the actual capital structure of
13 Washington Gas as of September 30, 2015, the end of the test period in this
14 proceeding, as shown in Section A of Schedule 3, Page 1. We then make
15 certain adjustments to address seasonality and other factors consistent with the
16 Commission's Rate Case Rules.

17 **Q. HOW ARE THE ACTUAL INDIVIDUAL COMPONENT COSTS OF CAPITAL,**
18 **THE ACTUAL CAPITAL STRUCTURE, AND ACTUAL RATE BASE**
19 **DEVELOPED, AND WHAT FACTORS IMPACT THEM?**

20 A. They are developed from the Company's financial statements, primarily
21 the income statement and the balance sheet. At a high level, the income
22 statement reflects the cost components of long-term debt and short-term debt
23 (as interest expense) and the cost of preferred stock (as preferred dividends).
24 Our estimate of the cost of common equity, or return on equity "ROE", is the
25 subject of testimony from Company Witness Hevert.

1 Cost of service items are derived from operating and other expenses on
2 the income statement. Assets and liabilities from the balance sheet provide the
3 data used to calculate rate base, and the capitalization section of the balance
4 sheet provides the weightings of capital structure components.

5 These financial measures are all linked, with both capital structure and
6 rate base being directly affected by cash flows that occur during a test year.

7 **Q. PLEASE EXPLAIN EACH ADJUSTMENT MADE TO THE ACTUAL CAPITAL**
8 **COMPONENT, BEGINNING WITH LONG-TERM DEBT.**

9 A. As shown in Schedule 3, Page 2, the unadjusted face amount of long-
10 term debt including current maturities was \$720.9 million as of September 30,
11 2015. There were no balances recorded for construction-related financing at
12 September 30, 2015, so no related adjustments were necessary. The net
13 result after reducing for unamortized discounts, losses on refunds and hedging
14 is a debt amount of \$707.6 million shown on line 12 of Schedule 3, Page 1.

15 **Q. WHAT IS THE BASIS FOR THE AMOUNT OF SHORT-TERM DEBT IN THE**
16 **CAPITAL STRUCTURE, AS RECOMMENDED IN THIS CASE?**

17 A. The amount of short-term debt outstanding varies significantly by year,
18 by month, and within a month as well. Consistent with past filings, I used
19 average short-term debt to reflect the seasonal fluctuations that occur in this
20 capital component, and calculated the \$56.2 million average daily balance for
21 twelve months ended September 30, 2015, as shown in Schedule 3, Page 1
22 and supported in Schedule 5, Page 1.

23 **Q. PLEASE EXPLAIN YOUR CALCULATION OF AVERAGE COMMON EQUITY**
24 **IN SCHEDULE 3, PAGE 2.**

1 A. Washington Gas's common equity balance fluctuates during the course
2 of the fiscal year, following its seasonal earnings profile. As a result, we
3 typically evaluate common equity on an average balance. Specifically for
4 purposes of Virginia regulatory filings (i.e. Annual Information Form or "AIF") we
5 calculate a five-quarter average. We believe this is the most accurate portrayal
6 of Washington Gas' actual common equity component for a given 12 month
7 cycle.

8 However, consistent with the Commission's Final Orders in the last two
9 rate proceedings, Case No. PUE-2006-00059 and Case No. PUE-2010-00139
10 (approving a stipulation), for this proceeding, I take the end of test period
11 balance. This balance is very close to the five-quarter average equity amount
12 and no adjustments were warranted. The recommended equity balance is
13 \$1,081.3 million, as shown in Schedule 3, Page 1.

14 **Q. WHAT CAPITAL STRUCTURE DO YOU RECOMMEND IN THIS**
15 **PROCEEDING?**

16 A. As shown in Schedule 3, Page 1, and because deferred taxes are
17 subtracted from rate base, I propose a capital structure consisting of 40.65%
18 debt (consisting of 37.66% long-term debt and 2.99% short-term debt), 1.50%
19 preferred stock, job development tax credits of 0.30%, and 57.55% common
20 equity. The proposed capital structure is consistent with the methodology
21 adopted in prior case orders. Schedule 50b, Statement 1, Page 1 compares
22 the proposed capital structure to the one approved for the Company in Case
23 No. PUE-2010-00139.

VII. DISCUSSION OF FINANCING ACTIVITY**SINCE CASE NO. PUE-2010-00139**

Q. PLEASE DISCUSS THE COMPANY'S LONG TERM DEBT ACTIVITY SINCE SEPTEMBER, 30, 2010, THE DATE OF THE CAPITAL STRUCTURE APPROVED IN CASE NO. PUE-2010-00139.

A. As shown in Schedule 50b, Statement 2, Page 1, Washington Gas has issued \$300.0 million and retired \$194.0 million in long term debt since September 30, 2010. This is a net increase in long term debt of \$106.0 million.

Q. HAS WASHINGTON GAS ISSUED ANY NEW COMMON EQUITY, OR RECEIVED EQUITY CAPITAL INFUSIONS FROM ITS PARENT OR ANY OTHER ENTITY SINCE THE LAST RATE PROCEEDING?

A. No, Washington Gas has not issued equity, nor has it received any cash infusions from its parent, WGL Holdings, Inc. As part of its normal financing objectives, Washington Gas has continued to pay regular dividends to WGL Holdings, Inc.

Q. PLEASE DESCRIBE WASHINGTON GAS'S PRIMARY SOURCES OF CASH SINCE THE LAST RATE PROCEEDING.

A. The primary sources of cash inflows include revenues collected from customers (including more timely recovery of capital infrastructure replacement costs through approved riders), reduced tax payments (primarily the result of an increase in deferred tax liabilities from bonus depreciation and tax accounting for repairs), lower working capital requirements (driven by lower overall gas costs), and lower interest rates. The latter three items (lower tax payments, lower gas costs, and low interest rates) generate significantly lower gas bills for customers. In addition to lower revenue requirements, these benefits reduce

1 the need for debt financing, which further reduces interest costs, all of which
2 drive lower costs to customers.

3 **Q. PLEASE PROVIDE ADDITIONAL DETAILS ABOUT BONUS**
4 **DEPRECIATION, DEFERRED TAXES, AND THEIR IMPACT ON THE**
5 **COMPANY'S CAPITAL STRUCTURE.**

6 **A.** Bonus depreciation, like any form of accelerated depreciation prescribed
7 under tax law, allows a company to recognize higher taxable expense, and thus
8 pay lower income tax, in the early years following a qualified investment.
9 These early tax payments are deferred until later in the asset's life. Similarly,
10 the tax treatment for repair work on utility infrastructure is immediately
11 expensed for tax purposes, lowering taxable income, but is capitalized and
12 depreciated for book purposes. These deferred tax liabilities are effectively a
13 zero-cost loan from taxing authorities, effectively providing financing at a rate
14 less costly than any short-term or long-term securities that a company would
15 otherwise issue².

16 Washington Gas has utilized cost-free deferred tax liabilities as a
17 primary source of long-term funding. This strategy has allowed the Company to
18 delay issuing long-term debt or other long-term securities, thus reducing our
19 effective cost of capital. When deferred tax liabilities no longer supply sufficient
20 cost-free capital to finance long-term requirements, the Company issues new
21 long-term debt securities at the most advantageous rates available.

22 **Q. HOW ARE DEFERRED TAX LIABILITIES REFLECTED IN THE COMPANY'S**
23 **RATE FILINGS?**

24
25 ² Please see Roger A. Morin, *New Regulatory Finance*, Public Utility Reports, Inc., 2006, at 500-503, for further discussion of how deferred taxes impact a utility's capital structure.

1 A. For regulatory purposes in the Commonwealth of Virginia, as stated in
2 the Order to Case No. PUE-2008-00001, accumulated deferred tax liabilities
3 are reflected as a rate base reduction rather than as part of capital structure.
4 Washington Gas's presentation of deferred tax liabilities as a balance sheet
5 component on its financial statements is consistent with this. However, it
6 should be noted that the revenue requirement would be exactly the same if
7 deferred tax liabilities were not removed from rate base, but instead were
8 reflected as a zero-cost long-term debt component of the Company's capital
9 structure, as described by Dr. Morin.³

10 **Q. HOW DO CUSTOMERS BENEFIT FROM THE COST-FREE CAPITAL THAT**
11 **DEFERRED TAXES PROVIDE?**

12 A. Customer's benefit through reduced rates, as deferred taxes are a
13 reduction to rate base, directly reducing the revenue requirement. Deferred
14 taxes do not incur the interest expense or origination fees associated with a
15 debt issuance, also contributing to a lower revenue requirement.

16 As a result, if a company makes proportionally greater use of deferred-
17 tax financing than its peers, that company's equity ratio may appear higher by
18 comparison when looking at the traditional capital structure components (debt
19 and equity), even though the company's effective cost of capital would be
20 similar or lower.

21 **Q. IS IT PROPER TO COMPARE THE WASHINGTON GAS CAPITAL**
22 **STRUCTURE TO THOSE OF THE PEER GROUP WITHOUT CONSIDERING**
23 **THE IMPACT OF DEFERRED TAXES?**

24 A. No, it is not.

25

³ *Ibid.*

1 Q. PLEASE EXPLAIN.

2 A. As noted above, the traditional capital structure components do consider
3 deferred taxes. Therefore, a meaningful comparison would be to add the effect
4 of deferred taxes when comparing to the peer group. One method to this, using
5 publicly available data, would be to add Washington Gas's net deferred tax
6 balance as a capital component. Schedule 50b, Statement 3, Page 1 presents
7 the capital structures for Washington Gas and its peer group companies,
8 adjusted to include deferred taxes. The median equity ratio for the peer group
9 decreases to 39.0% (from approximately 48.6%) when deferred taxes are
10 considered, while Washington Gas' equity ratio decreases to 42.2%; close to
11 the median of the peer group. Schedule 50b, Statement 3, Page 1 also
12 indicates that, on average, Washington Gas has made greater proportional use
13 of cost-free deferred tax liabilities as a funding mechanism than its peers,
14 directly to the benefit of customers.

15 Q. IS IT APPROPRIATE TO REDUCE THE COMPANY'S EQUITY
16 PERCENTAGE TO TAKE INTO ACCOUNT THE IMPACT OF DEFERRED
17 TAXES?

18 A. If deferred taxes are reduced from rate base, no, it is not appropriate to
19 reduce the equity ratio to account for the impact of deferred taxes. As currently
20 presented, the impact of deferred tax liabilities has been taken into account as
21 a reduction in the Company's rate base. Schedule 50b, Statement 4, Page 1
22 uses the Company's proposed rate base and capital structure to demonstrate
23 the impact and interrelationship of deferred taxes. If the Company's equity
24 percentage were reduced to incorporate the impact of the financing benefit of
25 bonus depreciation and resulting deferred tax liabilities, a corresponding

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1 in expenses associated with the revolving credit agreement for the twelve-
2 month period ended September 30, 2015

3 **Q. HOW DID YOU DETERMINE THE PRO FORMA COST OF SHORT-TERM**
4 **DEBT, AS SHOWN IN SCHEDULE 5 PAGE 1 AND IN YOUR**
5 **RECOMMENDED RATE MAKING CAPITAL STRUCTURE SHOWN IN**
6 **SCHEDULE 3, PAGE 1?**

7 A. I have used the average daily balance of the Company's short term debt
8 for the twelve months ended September 30, 2015, as shown in Schedule 5, Page
9 1. I then determined the short-term debt cost by using the average weighted
10 annualized cost from August to September 2015 to reflect the most recent rates
11 for short-term debt outstanding. Based on this calculation, the cost of short-term
12 debt is 0.16%.

13 **Q. WHAT IS THE BASIS FOR THE RETURN ON COMMON EQUITY**
14 **CONTAINED IN SCHEDULE 3, PAGE 1?**

15 A. I have adopted the 10.25% midpoint return on common equity
16 recommended by Company Witness Hevert, who has conducted a detailed
17 analysis to determine the return on common equity required by investors.

18 IX. REQUIRED RATE OF RETURN

19 **Q. BASED ON THE INFORMATION YOU HAVE PRESENTED, WHAT IS THE**
20 **FAIR RATE OF RETURN THAT SHOULD BE ALLOWED THE COMPANY?**

21 A. The Company should be allowed a return of 8.21%, as shown in
22 Schedule 3, Page 1. This rate of return will allow the Company to continue
23 providing service at a cost that is reasonable for the ratepayers, and that will
24 allow the Company to attract capital on reasonable terms.

1 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes, it does

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WITNESS HEVERT

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WITNESS HEVERT

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

Application of

WASHINGTON GAS LIGHT COMPANY

CASE NO. PUE-2016-00001

For authority to increase existing rates and
charges and to revise the terms and
conditions applicable to gas service pursuant
to §56-237 of the Code of Virginia

DIRECT TESTIMONY OF ROBERT B. HEVERT
Page 1 of 2

TABLE OF CONTENTS

<u>Topic</u>	<u>Page</u>
I. Introduction.....	1
II. Summary of Statements.....	2
III. Purpose and Overview of Testimony.....	3
IV. Summary of Conclusions.....	4
V. Regulatory Guidelines and Financial Considerations.....	7
VI. Proxy Group Selection	12
VII. Cost of Equity Estimation	15
Constant Growth DCF Model	17
Multi Stage DCF Model	25
CAPM Analysis.....	30
Bond Yield Plus Risk Premium Approach.....	33
VIII. Other Considerations	37
Capital Market Environment	37
Flotation Costs	50
IX. Capital Structure.....	52
X. Conclusions and Recommendations	57

INDEX TO SCHEDULES

<u>Topic</u>	<u>Schedule 50c</u>
Qualifications.....	Statement 1
Constant Growth Discounted Cash Flow	Statement 2
Derivation of Proxy Group Retention Growth Rate.....	Statement 3
Multi-State DCF Model.....	Statement 4

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DIRECT TESTIMONY OF ROBERT B. HEVERT
Page 2 of 2

Derivation of Market Risk Premium for Use in Capital	
Asset Pricing Model	Statement 5
Value Line and Bloomberg Financial Beta Coefficients.....	Statement 6
Capital Pricing Asset Pricing Model	Statement 7
Bond Yield Plus Risk Premium Analysis	Statement 8
Derivation of Flotation Costs	Statement 9
Review of Capital Structures in Place at Proxy Companies	Statement 10

WASHINGTON GAS LIGHT COMPANY

VIRGINIA

DIRECT TESTIMONY OF ROBERT B. HEVERT

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Robert B. Hevert. I am a Partner at ScottMadden, Inc. ("ScottMadden"). My business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts 01581.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. I am submitting this direct testimony ("Direct Testimony") before the Virginia Corporation Commission ("Commission") on behalf of Washington Gas Light Company (Washington Gas or the "Company"), a subsidiary of WGL Holdings, Inc. ("WGL").

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 concentration in Finance from the University of Massachusetts. I also hold the Chartered Financial Analyst designation.

Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES.

A. I have worked in regulated industries for over twenty-five years, having served as an executive and manager with consulting firms, a financial officer of a publicly traded natural gas utility (at the time, Bay State Gas Company), and an analyst at a telecommunications utility. In my role as a consultant, I have

1 advised numerous energy and utility clients on a wide range of financial and
2 economic issues including corporate and asset-based transactions, asset and
3 enterprise valuation, transaction due diligence, and strategic matters. As an
4 expert witness, I have provided testimony in over 150 proceedings regarding
5 various financial and regulatory matters before numerous state utility regulatory
6 agencies and the Federal Energy Regulatory Commission. A summary of my
7 professional and educational background, including a list of my testimony in
8 prior proceedings, is included in Statement 1 to my Direct Testimony.

9 II. SUMMARY OF STATEMENTS

10 Q. DO YOU SPONSOR ANY STATEMENTS IN SUPPORT OF YOUR
11 TESTIMONY?

12 A. Yes, they are presented in Schedule 50c. Statement 1 is a summary of
13 my qualifications. My conclusions are supported by the data and analyses
14 presented in Statement 2 through Statement 10, which have been prepared by
15 me or under my direction:

- 16 • Statement 2 presents my Constant Growth Discounted Cash Flow
17 ("DCF") model results;
- 18 • Statement 3 presents the derivation of the proxy group retention growth
19 rate applicable to the Constant Growth DCF and the Multi-Stage DCF
20 models;
- 21 • Statement 4 presents my Multi-Stage DCF model results;
- 22 • Statement 5 presents the derivation of the Market Risk Premium for use
23 in the Capital Asset Pricing Model ("CAPM");
- 24 • Statement 6 presents the Value Line and Bloomberg Financial Beta
25 coefficients for the proxy group for use in the CAPM;

- 1 • Statement 7 presents my CAPM results;
- 2 • Statement 8 presents my Bond Yield Plus Risk Premium analysis;
- 3 • Statement 9 presents the derivation of flotation costs applicable to the
- 4 Company's indicated Cost of Equity; and
- 5 • Statement 10 presents a review of the capital structures in place at the
- 6 proxy companies.

7 III. PURPOSE AND OVERVIEW OF TESTIMONY

8 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS**
9 **PROCEEDING?**

10 A. The purpose of my Direct Testimony is to present evidence and provide
11 a recommendation regarding the Company's Return on Equity ("ROE"),¹ and
12 to provide an assessment of the Company's proposed capital structure.

13 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE**
14 **COST OF EQUITY?**

15 A. My analyses indicate that the Company's Cost of Equity currently is in
16 the range of 10.00 percent to 10.50 percent. Based on the quantitative and
17 qualitative analyses discussed throughout my Direct Testimony, I conclude that
18 an ROE of 10.25 percent is reasonable and appropriate. I note that the market
19 conditions that give rise to my recommendation are independent of those that
20 prevailed when the Company's currently authorized return of 9.75 percent was
21 established. As such, the currently authorized ROE should not be viewed as a
22 benchmark for establishing the market-required return in this proceeding.

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

1 Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT LED
2 TO YOUR ROE RECOMMENDATION.

3 A. As discussed in more detail in Section VII, in light of recent market
4 conditions, and given the fact that equity analysts and investors tend to use
5 multiple methodologies in developing their return requirements, it is important
6 to consider the results of several analytical approaches in determining the
7 Company's ROE. To develop my ROE recommendation, I therefore applied
8 the Constant Growth and Multi-Stage forms of the DCF model, the CAPM, and
9 the Bond Yield Plus Risk Premium approach.

10 As discussed throughout my Direct Testimony, it also is important to
11 consider a range of factors, both quantitative and qualitative, in arriving at an
12 ROE determination. My recommendation therefore takes into consideration
13 current and expected market conditions, and the effect of those conditions on
14 the models and assumptions used to estimate the Cost of Equity.

15 IV. SUMMARY OF CONCLUSIONS

16 Q. WHAT ARE THE KEY FACTORS CONSIDERED IN YOUR ANALYSES AND
17 UPON WHICH YOU BASE YOUR RECOMMENDED ROE?

18 A. My analyses and recommendations considered the following:
19 • The *Hope* and *Bluefield* decisions² that established the standards
20 for determining a fair and reasonable allowed Return on Equity
21 including: consistency of the allowed return with other businesses
22 having similar risk; adequacy of the return to provide access to
23

24
25 ² See, *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923); *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

capital and support credit quality; and that the end result must lead to just and reasonable rates.

- The effect of the current capital market conditions on investors' return requirements, and in particular, the Company's continuing need to access the capital markets.
- The Company's business risks relative to the proxy group of comparable companies and the implications of those risks in arriving at the appropriate ROE.

Q. WHAT ARE THE RESULTS OF YOUR ANALYSES?

A. The results of my analyses are summarized in Tables 1a and 1b, below.

Table 1a: Summary of Discounted Cash Flow Model Results³

	LOW	MEDIUM	HIGH
30-Day Average	6.89%	8.65%	10.54%
90-Day Average	6.96%	8.72%	10.61%
180-Day Average	7.15%	8.91%	10.80%
	LOW	MEDIUM	HIGH
30-Day Average	8.45%	8.81%	9.24%
90-Day Average	8.51%	8.89%	9.32%
180-Day Average	8.71%	9.10%	9.56%

³ See, also Statement 2 and Statement 4. Results include estimated flotation costs.

Table 1b: Summary of Risk Premium Results⁴

	BLOOMBERG DERIVED MARKET RISK PREMIUM	VALUE LINE DERIVED MARKET RISK PREMIUM
AVERAGE BLOOMBERG BETA COEFFICIENT		
Current 30-Year Treasury (2.65%)	9.36%	9.75%
Near Term Projected 30-Year Treasury (3.08%)	9.80%	10.19%
AVERAGE VALUE LINE BLOOMBERG BETA COEFFICIENT		
Current 30-Year Treasury (3.08%)	10.43%	10.88%
Near Term Projected 30-Year Treasury (3.08%)	10.87%	11.32%
BOND YUIELD PLUS RISK PREMIUM APPROACH		
Current 30-Year Treasury (2.65%)	9.98%	
Current 30-Year Treasury (3.08%)	9.75%	
	9.99%	
Long Term Projected 30-Year Treasury (4.45%)	9.75%	
	10.31%	

Based on the analytical results presented in Tables 1a and 1b, and in light of the considerations discussed throughout the balance of my Direct Testimony, it is my view that a reasonable range of estimates is from 10.00 percent to 10.50 percent, and within that range, an ROE of 10.25 percent is reasonable and appropriate.

Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

A. The balance of my Direct Testimony is organized as follows:

Section V – Discusses the regulatory guidelines and financial considerations pertinent to the development of the cost of capital;

⁴ See, also Statement 7 and Statement 8.

Section VI – Explains my selection of the proxy group of natural gas distribution utilities used to develop my analytical results;

Section VII – Explains my analyses and the analytical bases for my ROE recommendation;

Section VIII – Provides a discussion of considerations that have a direct bearing on the Company's Cost of Equity, including the effect of common equity flotation costs and the capital market environment;

Section IX – Addresses the reasonableness of the Company's proposed capital structure; and

Section X – Summarizes my conclusions and recommendations.

V. REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS

Q. BEFORE ADDRESSING THE SPECIFIC ASPECTS OF THIS PROCEEDING, PLEASE PROVIDE AN OVERVIEW OF THE ISSUES SURROUNDING THE COST OF EQUITY IN REGULATORY PROCEEDINGS, GENERALLY.

A. In very general terms, the Cost of Equity is the return that investors require to make an equity investment in a firm. That is, investors will only provide funds to a firm if the return that they *expect* is equal to, or greater than, the return that they *require*. From the firm's perspective, that required return, whether it is provided to debt or equity investors, has a cost. Individually, we speak of the "Cost of Debt" and the "Cost of Equity"; together, they are referred to as the "Cost of Capital".

The Cost of Capital (including the costs of both debt and equity) is based on the economic principle of "opportunity costs". Investing in any asset, whether debt or equity securities, implies a forgone opportunity to invest in

1 alternative assets. For any investment to be sensible, its expected return must
2 be at least equal to the return expected on alternative, comparable investment
3 opportunities. Because investments with like risks should offer similar returns,
4 the opportunity cost of an investment should equal the return available on an
5 investment of comparable risk.

6 Although both debt and equity have required costs, they differ in certain
7 fundamental ways. Most noticeably, the Cost of Debt is contractually defined
8 and can be directly observed as the interest rate, or yield, on debt securities.⁵
9 The Cost of Equity, on the other hand, is neither directly observable nor a
10 contractual obligation. Rather, equity investors have a claim on the firm's cash
11 flows only after debt holders are paid; the uncertainty (or risk) associated with
12 those residual cash flows determines the Cost of Equity. Because equity
13 investors bear that "residual risk", they take greater risks and require higher
14 returns than debt holders. In that basic sense, equity and debt investors differ:
15 They invest in different securities, face different risks, and require different
16 returns.

17 Whereas the Cost of Debt can be directly observed, the Cost of Equity
18 must be estimated, or inferred, based on market data and various financial
19 models. As discussed throughout my Direct Testimony, all of those models are
20 subject to certain assumptions, which may be more or less applicable under
21 differing market conditions. In addition, because the Cost of Equity is premised
22 on opportunity costs, those models typically are applied to a group of
23 "comparable" or "proxy" companies. The choice of models (including their
24

25 ⁵ The observed interest rate may be adjusted to reflect issuance or other directly observable costs.

1 inputs), the selection of proxy companies, and the interpretation of the model
2 results all require the application of judgment. That judgment also should
3 consider data and information that is not necessarily included in the models
4 themselves. In the end, however, the estimated Cost of Equity should reflect
5 the return that investors require in light of the subject company's risks, and the
6 returns available on comparable investments.

7 **Q. PLEASE NOW PROVIDE A BRIEF SUMMARY OF THE REGULATORY**
8 **GUIDELINES ESTABLISHED FOR THE PURPOSE OF DETERMINING THE**
9 **ROE.**

10 **A.** The Court established the guiding principles for establishing a fair return
11 for capital in two cases: (1) *Bluefield Water Works and Improvement Co. v.*
12 *Public Service Comm'n. ("Bluefield")*;⁶ and (2) *Federal Power Comm'n v. Hope*
13 *Natural Gas Co. ("Hope")*.⁷ In *Bluefield*, the Court stated:

14 A public utility is entitled to such rates as will permit it to earn a
15 return on the value of the property which it employs for the
16 convenience of the public equal to that generally being made at the
17 same time and in the same general part of the country on
18 investments in other business undertakings which are attended by
19 corresponding, risks and uncertainties; but it has no constitutional
20 right to profits such as are realized or anticipated in highly profitable
21 enterprises or speculative ventures. The return should be
22 reasonably sufficient to assure confidence in the financial
23 soundness of the utility and should be adequate, under efficient and
24 economical management, to maintain and support its credit and
25 enable it to raise the money necessary for the proper discharge of
its public duties.⁸

⁶ *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923).

⁷ *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

⁸ *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923).

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

8 **Q. WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE**
9 **OPPORTUNITY TO EARN A RETURN ADEQUATE TO ATTRACT EQUITY**
10 **CAPITAL AT REASONABLE TERMS?**

11 **A.** A return that is adequate to attract capital at reasonable terms enables
12 the utility to provide service while maintaining its financial integrity. In keeping
13 with the *Hope* and *Bluefield* standards, that return should be commensurate
14 with the returns expected elsewhere in the market for investments of equivalent
15 risk. Based on those standards, the Commission's decision in this case should
16 provide the Company with the opportunity to earn an ROE that is: (1) adequate
17 to attract capital at reasonable terms, thereby enabling it to continue to provide
18 safe and reliable natural gas service; (2) sufficient to ensure its financial
19 integrity; and (3) commensurate with returns on investments in enterprises
20 having corresponding risks. The allowed ROE should enable the Company to
21 finance capital expenditures at reasonable cost rates and maintain its financial
22 flexibility over the period during which rates are expected to remain in effect.
23 Whereas the "capital attraction" and "financial integrity" standards are important
24 principles in normal economic conditions, the practical implications of those
25

1 standards are even more pronounced during periods of capital market
2 instability.

3 **Q. HOW IS THE COST OF EQUITY ESTIMATED IN REGULATORY**
4 **PROCEEDINGS?**

5 A. As noted earlier (and as discussed in more detail throughout my Direct
6 Testimony), the Cost of Equity is estimated by the use of various financial
7 models. By their very nature, those models produce a range of results from
8 which the ROE must be estimated. That estimate must be based on a
9 comprehensive review of relevant data and information, and does not
10 necessarily lend itself to a strict mathematical solution. The key consideration
11 in determining the ROE is to ensure that the overall analysis reasonably
12 reflects investors' view of the financial markets in general and the subject
13 company (in the context of the proxy companies) in particular. Both
14 practitioners and academics, however, recognize that financial models simply
15 are tools to be used in the ROE estimation process, and that strict adherence
16 to any single approach, or to the specific results of any single approach, can
17 lead to flawed or misleading conclusions. That position is consistent with the
18 Hope and Bluefield principle that it is the analytical result, as opposed to the
19 methodology, that is controlling in arriving at ROE determinations. Thus, a
20 reasonable ROE estimate appropriately considers alternative methodologies
21 and the reasonableness of their individual and collective results in the context
22 of observable, relevant market information.

VI. PROXY GROUP SELECTION

Q. AS A PRELIMINARY MATTER, WHY IS IT NECESSARY TO SELECT A GROUP OF PROXY COMPANIES TO DETERMINE THE COST OF EQUITY FOR WASHINGTON GAS?

A. First, it is important to bear in mind that the Cost of Equity for a given enterprise depends on the risks attendant to the business in which the company is engaged. According to financial theory, the value of a given company is equal to the aggregate market value of its constituent business units. The value of the individual business units reflects the risks and opportunities inherent in the business sectors in which those units operate. In this proceeding, we are focused on estimating the Cost of Equity for the Company's Virginia operations. Because the ROE is a market-based concept, and given the fact that the Company's jurisdictional operations within the state do not make up the entirety of the publicly traded parent company, it is necessary to establish a group of companies that are both publicly traded and comparable to Washington Gas to serve as its "proxy" for purposes of the ROE estimation process.

Even if the Company's Virginia jurisdictional assets did constitute the entirety of the parent company's operations, it is possible that transitory events could bias its market value in one way or another over a given period of time. A significant benefit of using a proxy group, therefore, is to moderate the effects of anomalous, temporary events that may be associated with any one company.

1 Q. DOES THE SELECTION OF A PROXY GROUP SUGGEST THAT
2 ANALYTICAL RESULTS WILL BE TIGHTLY CLUSTERED AROUND
3 AVERAGE (I.E., MEAN) RESULTS?

4 A. Not necessarily. The DCF approach is based on the theory that a
5 stock's current price represents the present value of its future expected cash
6 flows. The DCF model is defined as the sum of the expected dividend yield
7 and projected long-term growth. Notwithstanding the care taken to ensure risk
8 comparability, market expectations with respect to future risks and growth
9 opportunities will vary from company to company. Therefore, even within a
10 group of similarly situated companies, it is common for analytical results to
11 reflect a seemingly wide range. At issue, then, is how to select an ROE
12 estimate from within that range. That determination necessarily must be based
13 on the informed judgment and experience of the analyst.

14 Q. PLEASE NOW PROVIDE A SUMMARY PROFILE OF WASHINGTON GAS.

15 A. Washington Gas, which provides natural gas distribution service to
16 approximately 512,110 customers in Virginia,⁹ currently has senior unsecured
17 ratings of A1, A+, and AA- from Moody's Investors Service, Standard & Poor's,
18 and Fitch Ratings, respectively.¹⁰

19 Q. HOW DID YOU SELECT THE COMPANIES INCLUDED IN YOUR PROXY
20 GROUP?

21 A. I began with the universe of companies that Value Line classifies as
22 Electric or Natural Gas Utilities, which includes a group of 57 domestic U.S.
23 utilities, and applied the following screening criteria:

24
25 ⁹ See, WGL Holdings, Inc., SEC Form 10-K for the fiscal year ended September, 2015, at 7.

¹⁰ Source: SNL Financial

- 1 • I excluded companies that do not consistently pay quarterly cash
- 2 dividends;
- 3 • I excluded companies not covered by at least two utility industry
- 4 equity analysts;
- 5 • I excluded companies that do not have investment grade senior
- 6 bond and/or corporate credit ratings from Standard and Poor's;
- 7 • To incorporate companies that are primarily regulated gas
- 8 distribution utilities, I excluded companies with less than 60.00
- 9 percent of net operating income from regulated natural gas utility
- 10 operations; and,
- 11 • I excluded companies that are currently known to be party to a
- 12 merger, or other significant transaction.

13 **Q. DID YOU INCLUDE WGL HOLDINGS, INC. IN YOUR ANALYSIS?**

14 A. No, in order to avoid the circular logic that otherwise would occur, it has
 15 been my consistent practice to exclude the subject company (or its parent) from
 16 the proxy group.

17 **Q. WHAT COMPANIES MET THOSE SCREENING CRITERIA?**

18 A. The criteria discussed above resulted in a proxy group of the following
 19 six companies:

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Table 2: Proxy Group Screening Results

Company	Ticker
Atmos Energy	ATO
New Jersey Resources	NJR
Northwest Natural Gas	NWN
South Jersey Industries	SJI
Southwest Gas	SWX
Spire Inc.	SR

Q. DO YOU BELIEVE THAT A PROXY GROUP OF SIX COMPANIES IS SUFFICIENTLY LARGE?

A. Yes, I do. The analyses performed in estimating the ROE are more likely to be representative of the subject utility's Cost of Equity to the extent that the chosen proxy companies are fundamentally comparable to the subject utility. Because all analysts use some form of screening process to arrive at a proxy group, the group, by definition, is not randomly drawn from a larger population. Consequently, there is no reason to place more reliance on the quantitative results of a larger proxy group simply by virtue of the resulting larger number of observations.

VII. COST OF EQUITY ESTIMATION

Q. PLEASE BRIEFLY DISCUSS THE ROE IN THE CONTEXT OF THE REGULATED RATE OF RETURN.

1 A. Regulated utilities primarily use common stock and long-term debt to
2 finance their permanent property, plant, and equipment. The overall rate of
3 return ("ROR") for a regulated utility is based on its weighted average cost of
4 capital, in which the cost rates of the individual sources of capital are weighted
5 by their respective book values. Whereas the costs of debt and preferred stock
6 can be directly observed, the Cost of Equity is market-based and, therefore,
7 must be estimated based on observable market information.

8 **Q. HOW IS THE REQUIRED ROE DETERMINED?**

9 A. The required ROE is estimated by using one or more analytical
10 techniques that rely on market-based data to quantify investor expectations
11 regarding required equity returns, adjusted for certain incremental costs and
12 risks. By their very nature, quantitative models produce a range of results from
13 which the market required ROE must be selected. As discussed throughout my
14 Direct Testimony, that selection must be based on a comprehensive review of
15 relevant data and information, and does not necessarily lend itself to a strict
16 mathematical solution. Consequently, the key consideration in determining the
17 Cost of Equity is to ensure that the methodologies employed reasonably reflect
18 investors' view of the financial markets in general, and the subject company (in
19 the context of the proxy group) in particular.

20 Although we cannot directly observe the Cost of Equity, we can observe
21 the methods frequently used by analysts to arrive at their return requirements
22 and expectations. While investors and analysts tend to use multiple
23 approaches in developing their estimate of return requirements, each
24 methodology requires certain judgment with respect to the reasonableness of
25 assumptions and the validity of proxies in its application. In essence, analysts

1 and academics understand that ROE models are tools to be used in the ROE
2 estimation process and that strict adherence to any single approach, or the
3 specific results of any single approach, can lead to flawed and irrelevant
4 conclusions. That position is consistent with the *Hope* and *Bluefield* finding that
5 it is the analytical result, as opposed to the methodology, that is controlling in
6 arriving at ROE determinations. A reasonable ROE estimate therefore
7 considers alternative methodologies, observable market data, and the
8 reasonableness of their individual and collective results.

9 In my view, therefore, it is both prudent and appropriate to use multiple
10 methodologies in order to mitigate the effects of assumptions and inputs
11 associated with relying exclusively on any single approach. Such use,
12 however, must be tempered with due caution as to the results generated by
13 each individual approach. As such, I have considered the results of the
14 Constant Growth and Multi-Stage forms of the DCF model, the Capital Asset
15 Pricing Model, and the Risk Premium approach.

16 ***Constant Growth DCF Model***

17 **Q. ARE DCF MODELS WIDELY USED IN REGULATORY PROCEEDINGS?**

18 A. Yes, in my experience the DCF model is widely recognized in regulatory
19 proceedings. Nonetheless, neither the DCF nor any other model should be
20 applied without considerable judgment in the selection of data and the
21 interpretation of results.

22 **Q. PLEASE DESCRIBE THE DCF APPROACH.**

23 A. The DCF approach is based on the theory that a stock's current price
24 represents the present value of all expected future cash flows. In its simplest
25

1 form, the DCF model expresses the Cost of Equity as the sum of the expected
2 dividend yield and long-term growth rate, and is expressed as follows:

$$3 \quad P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

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

$$8 \quad k = \frac{D_0 (1+g)}{P} + g \quad [2]$$

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

12 As explained more fully below, both consensus forecasts and market
13 data indicate meaningful increases in long-term interest rates over the next
14 several years (i.e., the period in which rates will be in effect). Consequently,
15 the fundamental assumption that the return required today is the same return
16 that will be required three or more years from now likely does not hold. As also
17 discussed below, the proxy companies' average P/E multiple recently has
18 traded well in excess of its historical average and at times, in excess of the
19 market-wide P/E multiple. As such, market conditions are inconsistent with the
20 Constant Growth DCF model's fundamental assumptions. As a consequence,
21 the Constant Growth DCF model's results likely understate the required Cost of
22 Equity, and should be interpreted with considerable caution and reasoned
23 judgment.

24 **Q. WHAT ASSUMPTIONS ARE REQUIRED FOR THE CONSTANT GROWTH**
25 **DCF MODEL?**

1 A. The Constant Growth DCF model requires the following assumptions:
2 (1) a constant average growth rate for earnings and dividends; (2) a stable
3 dividend payout ratio; (3) a constant price-to-earnings multiple; and (4) a
4 discount rate greater than the expected growth rate. In addition, the Constant
5 Growth DCF model assumes that the same return will be required every year,
6 in perpetuity (see Equation [1], above).

7 **Q. WHAT MARKET DATA DID YOU USE TO CALCULATE THE DIVIDEND**
8 **YIELD COMPONENT OF YOUR DCF MODEL?**

9 A. The dividend yield is based on the proxy companies' current annualized
10 dividend, and average closing stock prices over the 30-, 90-, and 180-trading
11 days as of May 31, 2016.

12 **Q. WHY DID YOU USE THREE AVERAGING PERIODS TO CALCULATE THE**
13 **AVERAGE STOCK PRICE?**

14 A. I did so to ensure that the model's results are not skewed by anomalous
15 events that may affect stock prices on any given trading day. At the same time,
16 the averaging period should be reasonably representative of expected capital
17 market conditions over the long term. In my view, the use of the 30-, 90- and
18 180-day averaging periods reasonably balances those concerns.

19 **Q. DID YOU MAKE ANY ADJUSTMENTS TO THE DIVIDEND YIELD TO**
20 **ACCOUNT FOR PERIODIC GROWTH IN DIVIDENDS?**

21 A. Yes, I did. Because utility companies tend to increase their quarterly
22 dividends at different times throughout the year, it is reasonable to assume that
23 dividend increases will be evenly distributed over calendar quarters. Given that
24 assumption, it is appropriate to calculate the expected dividend yield by
25 applying one-half of the long-term growth rate to the current dividend yield.

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1 earnings-price ratio has assumed increased emphasis in
2 rate cases.¹²

3 Phillips' conclusion continues to hold true. Subsequent academic
4 research has clearly and consistently indicated that measures of earnings and
5 cash flow are strongly related to returns, and that analysts' forecasts of growth
6 are superior to other measures of growth in predicting stock prices.¹³ For
7 example, Vander Weide and Carleton state that, "[our] results...are consistent
8 with the hypothesis that investors use analysts' forecasts, rather than
9 historically oriented growth calculations, in making stock buy-and-sell
10 decisions."¹⁴

11 Other research specifically notes the importance of analysts' growth
12 estimates in determining the Cost of Equity, and in the valuation of equity
13 securities. Dr. Robert Harris noted that "a growing body of knowledge shows
14 that analysts' earnings forecast are indeed reflected in stock prices." Citing
15 Cragg and Malkiel, Dr. Harris notes that those authors "found that the
16 evaluations of companies that analysts make are the sorts of ones on which
17 market valuation is based."¹⁵ Similarly, Brigham, Shome and Vinson noted that
18 "evidence in the current literature indicates that (i) analysts' forecasts are
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21 ¹² Charles F. Phillips, Jr., The Economics of Regulation, Revised Edition, 1969, Richard D. Irwin, Inc.,
22 at 285.

23 ¹³ See, for example, Christofi, Christofi, Lori and Moliver, *Evaluating Common Stocks Using Value
24 Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing (Spring 1999); Harris and
25 Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts*, Financial
Management, 21 (Summer 1992); and Vander Weide and Carleton, *Investor Growth Expectations:
Analysts vs. History*, The Journal of Portfolio Management, Spring 1988.

¹⁴ Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of
Portfolio Management, Spring 1988.

¹⁵ Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*,
Financial Management, Spring 1986.

1 superior to forecasts based solely on time series data, and (ii) investors do rely
2 on analysts' forecasts."¹⁶

3 To that point, the research of Vander Weide and Carleton demonstrates
4 that earnings growth projections have a statistically significant relationship to
5 stock valuation levels, while dividend growth projections do not. Those findings
6 suggest that investors form their investment decisions based on expectations of
7 growth in earnings, not dividends. Consequently, earnings growth, not dividend
8 growth, is the appropriate estimate for the purpose of the Constant Growth
9 DCF model.

10 **Q. PLEASE SUMMARIZE YOUR INPUTS TO THE CONSTANT GROWTH DCF**
11 **MODEL.**

12 **A.** I applied the DCF model to the proxy group of natural gas utility
13 companies using the following inputs for the price and dividend terms:

- 14 1. The average daily closing prices for the 30-trading
15 days, 90-trading days, and 180-trading days ended
16 May 31, 2016 for the term P_0 ; and
- 17 2. The annualized dividend per share as of May 31,
18 2016 for the term D_0 .

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

- 21 1. The Zacks consensus long-term earnings growth estimates;
- 22 2. The First Call consensus long-term earnings growth estimates;
- 23 3. The Value Line long-term earnings growth estimates;

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25 ¹⁶ 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.

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In this form, the "sv" term reflects an element of growth as the product of (a) the growth in shares outstanding, and (b) that portion of the market-to-book ratio that exceeds unity. As shown in Statement 3, all of the components of the Retention Growth Model can be derived from data provided by Value Line.

Q. HOW DID YOU CALCULATE THE HIGH AND LOW DCF RESULTS?

A. I calculated the proxy-group mean high DCF result by combining each company's dividend yield with the maximum of (1) its EPS growth rate as reported by Value Line, Zacks, or First Call or (2) its retention growth estimate based on Value Line data as described above. The average mean high result then reflects the average maximum DCF result for the proxy group as a whole. I used a similar approach to calculate the mean low results, combining dividend yield with the minimum growth rate data for each proxy group company.

Q. WHAT ARE THE RESULTS OF YOUR DCF ANALYSIS?

A. My Constant Growth DCF results are summarized in Table 3, below (see also Statement 2).

Table 3: Constant Growth DCF Results¹⁷

	<i>Mean Low</i>	<i>Mean</i>	<i>Mean High</i>
30-Day	6.89%	8.65%	10.54%
90-Day	6.96%	8.72%	10.61%
180-Day	7.15%	8.91%	10.80%

Multi-Stage DCF Model

Q. WHAT OTHER FORMS OF THE DCF MODEL HAVE YOU USED?

¹⁷ Results include estimated flotation costs, which are discussed in Section VIII.

1 A. In order to address certain limiting assumptions underlying the Constant
2 Growth form of the DCF model, I also considered the results of the Multi-Stage
3 (three-stage) Discounted Cash Flow Model. The Multi-Stage model, which is
4 an extension of the Constant Growth form, enables the analyst to specify
5 growth rates over three distinct stages. As with the Constant Growth form of
6 the DCF model, the Multi-Stage form defines the Cost of Equity as the discount
7 rate that sets the current price equal to the discounted value of future cash
8 flows. Unlike the Constant Growth form, however, the Multi-Stage model must
9 be solved in an iterative fashion.

10 Q. PLEASE NOW SUMMARIZE WHY YOU HAVE INCLUDED THE MULTI-
11 STAGE DCF METHOD IN YOUR COST OF EQUITY ESTIMATION.

12 A. First, as noted earlier it is both prudent and appropriate to use multiple
13 methodologies in order to mitigate the effects of assumptions and inputs
14 associated with any single approach. Second, the Constant Growth DCF
15 model assumes that earnings, dividends, and book value will grow at the same
16 constant rate in perpetuity; that the payout ratio will remain constant in
17 perpetuity; and that the Price/Earnings ratio will remain constant. In addition,
18 the model assumes that the return required today will be the same return
19 required every year in the future. However, those assumptions are not likely to
20 hold. In particular, given near-term capital expenditures associated with
21 infrastructure replacement and growth needs, it is likely that payout ratios will
22 increase from their current levels.¹⁸ In my view, the Multi-Stage DCF model
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25 ¹⁸ See, for example, SNL Energy, *Financial Focus Special Report: Capital Expenditure Update*
November 5, 2015.

enables analysts to consider such issues, and to address the limiting, and likely unrealistic assumptions underlying the Constant Growth form of the model.

Q. PLEASE GENERALLY DESCRIBE THE STRUCTURE OF YOUR MULTI-STAGE MODEL.

A. As noted above, the model sets the subject company's stock price equal to the present value of future cash flows received over three "stages". In the first two stages, "cash flows" are defined as projected dividends. In the third stage, "cash flows" equal both dividends and the expected price at which the stock will be sold at the end of the period (i.e., the "terminal price"). I calculated the terminal price based on the Gordon model, which defines the price as the expected dividend divided by the difference between the Cost of Equity (i.e., the discount rate) and the long-term expected growth rate. In essence, the terminal price is defined by the present value of the remaining "cash flows" in perpetuity. In each of the three stages, the dividend is the product of the projected earnings per share and the expected dividend payout ratio. A summary description of the model is provided in Table 4 (below).

Table 4: Multi-Stage DCF Structure

Stage	0	1	2	3
Cash Flow Competent	Initial Stock Price	Expected Dividend	Expected Dividend	Expected Dividend + Terminal Value
Inputs	Stock Price Earnings Per Share ("EPS") Dividends Per Share ("DPS")	Expected EPS Expected DPS	Expected EPS Expected DPS	Expected EPS Expected DPS Terminal Value
Assumptions	30-, 90-, and 180-day average stock price	EPS Growth Rate Payout Ratio	Growth Rate Change Payout Ratio Change	Long-term Growth Rate Long-term Payout Ratio

Q. WHAT ARE THE ANALYTICAL BENEFITS OF YOUR THREE-STAGE MODEL?

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A. I applied the Multi-Stage model to the proxy group described, earlier in my Direct Testimony. My assumptions with respect to the various model inputs are described in Table 5 (below).

Table 5: Multi-Stage DCF Model Assumptions

Stage	Initial	First	Transition	Terminal
Stock Price	30-, 90-, and 180-day average stock price as of May 31, 2016			
Earnings Growth	2014 actual EPS escalated by Period 1 growth rate	EPS growth as average of (1) Value Line; (2) Zacks; (3) First Call; (4) Retention Growth rates	Transition to Long-term GDP growth	Long-term GDP growth
Payout Ratio		Value Line company-specific	Transition to long-term industry payout ratio	Long-term expected payout ratio
Terminal Value				Expected dividend in final year divided by solved Cost of Equity less long-term growth rate

Q. HOW DID YOU CALCULATE THE LONG-TERM GDP GROWTH RATE?

A. The long-term growth rate of 5.28 percent is based on the real Gross Domestic Product ("GDP") growth rate of 3.24 percent from 1929 through 2015,²⁰ and an inflation rate of 1.98 percent.²¹ The GDP growth rate is calculated as the compound growth rate in the chain-weighted GDP for the period from 1929 through 2015. The rate of inflation of 1.98 percent is an average of two components: the compound annual forward rate starting in ten years (i.e., 2026, which is the beginning of the terminal period) based on the 180-day average spread between yields on long-term nominal Treasury

²⁰ See, Bureau of Economic Analysis, May 27, 2016 update.

²¹ See, Board of Governors of the Federal Reserve System, Table H.15 Selected Interest Rates.

1 Securities and long-term Treasury Inflation Protected Securities, known as the
2 "TIPS spread" of 1.76 percent; and the projected Blue Chip Financial Forecast
3 of CPI for 2023 – 2027 of 2.20 percent.²²

4 I averaged these two measures of inflation because nominal Treasury
5 yields are related to inflation, which includes the effect of commodities such as
6 oil, which may cause the current TIPS spread to somewhat understate long-
7 term expected inflation.

8 **Q. WHAT WERE YOUR SPECIFIC ASSUMPTIONS WITH RESPECT TO THE**
9 **PAYOUT RATIO?**

10 A. As noted in Table 5, for the first two periods I relied on the first year and
11 long-term projected payout ratios reported by Value Line²³ for each of the proxy
12 group companies. I then assumed that by the end of the second period (i.e.,
13 the end of year 10), the payout ratio will converge to the industry expected ratio
14 of 67.67 percent.²⁴

15 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR MULTI-STAGE DCF**
16 **ANALYSES.**

17 A. Table 6 (below), (see also Statement 4), presents the results of the
18 Multi-Stage DCF analyses. The Multi-Stage DCF analysis produces a range of
19 results from 8.45 percent to 9.56 percent.

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24 ²² *Blue Chip Financial Forecasts*, June 1, 2016, at 14.

25 ²³ As reported in the Value Line Investment Survey as "All Div'ds to Net Prof."

²⁴ Source: Bloomberg Professional.

Table 6: Multi-Stage Discounted Cash Flow Model Results²⁵

	<i>Low</i>	<i>Mean</i>	<i>High</i>
30-Day Average	8.45%	8.81%	9.24%
90-Day Average	8.51%	8.89%	9.32%
180-Day Average	8.71%	9.10%	9.56%

CAPM Analysis

Q. PLEASE BRIEFLY DESCRIBE THE GENERAL FORM OF THE CAPM ANALYSIS.

A. The CAPM is a risk premium model that estimates the Cost of Equity 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 [4], the CAPM is defined by four components, each of which theoretically is a forward-looking estimate:

$$k = r_f + \beta(r_m - r_f) \quad [4]$$

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 [4], the term $(r_m - r_f)$ represents the Market Risk Premium. According to the theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities to their investment portfolio, investors

²⁵ Results include estimated flotation costs, which are discussed in Section VIII.

1 should be concerned only with systematic or non-diversifiable risk. Non-
2 diversifiable risk is measured by the Beta coefficient, which is defined as:

$$\beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m} [5]$$

3
4 where σ_j is the standard deviation of returns for company "j"; σ_m is the
5 standard deviation of returns for the broad market (as measured, for example,
6 by the S&P 500 Index), and $\rho_{j,m}$ is the correlation of returns in between
7 company j and the broad market. Thus, the Beta coefficient represents both
8 relative volatility (i.e., the standard deviation) of returns, and the correlation in
9 returns between the subject company and the overall market.

10 **Q. WHAT ASSUMPTIONS REGARDING THE RISK-FREE RATE DID YOU**
11 **INCLUDE IN YOUR CAPM ANALYSIS?**

12 A. Because utility assets represent long-term investments, I used two
13 different estimates of the risk-free rate: (1) the current 30-day average yield on
14 30-year Treasury bonds (i.e., 2.65 percent); and (2) the near-term (that is,
15 through the third calendar quarter of 2017) projected 30-year Treasury yield
16 (i.e., 3.08 percent).

17 **Q. WHAT MARKET RISK PREMIUM DID YOU USE IN YOUR CAPM MODEL?**

18 A. I developed a forward-looking (*ex-ante*) estimate of the Market Risk
19 Premium.

20 **Q. PLEASE DESCRIBE YOUR EX-ANTE APPROACH TO ESTIMATING THE**
21 **MARKET RISK PREMIUM.**

22 A. The approach is based on the market required return, less the current
23 30-year Treasury bond yield. To do so, I relied on data from two sources: (1)
24 Bloomberg; and (2) Value Line. For Bloomberg, I calculated the market
25 capitalization weighted expected dividend yield (using the same one-half

1 growth rate assumption described earlier), and combined that amount with the
2 market capitalization weighted projected earnings growth rate to arrive at the
3 market capitalization weighted average DCF result. I then subtracted the
4 current 30-year Treasury yield from that amount to arrive at the market DCF-
5 derived ex-ante Market Risk Premium estimate. For Value Line, I calculated
6 the projected long-term market return based on the implied annual price
7 appreciation and dividend yield for Value Line's composite index. The results
8 of those two calculations are provided in Statement 5.

9 **Q. HOW DID YOU APPLY YOUR EXPECTED MARKET RISK PREMIUM AND**
10 **RISK-FREE RATE ESTIMATES?**

11 A. I relied on the *ex-ante* Market Risk Premia discussed above, together
12 with the current and near-term projected 30-year Treasury bond yields as
13 inputs to my CAPM analyses.

14 **Q. WHAT BETA COEFFICIENT DID YOU USE IN YOUR CAPM MODEL?**

15 A. As shown in Statement 6, I considered Beta coefficients reported by two
16 sources: Bloomberg, and Value Line. For each source, I simply used the
17 average reported Beta coefficient for each proxy company. Although both of
18 those services adjust their calculated (or "raw") Beta coefficients to reflect the
19 tendency of the Beta coefficient to regress to the market mean of 1.00, Value
20 Line calculates the Beta coefficient over a five-year period, while Bloomberg's
21 calculation is based on two years of data.

22 **Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?**

23 The results of my CAPM analysis are summarized in Table 7 (see also,
24 Statement 7).
25

Table 7: Summary of CAPM Results

	<i>Bloomberg Derived Market Risk Premium</i>	<i>Value Line Derived Market Risk Premium</i>
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.65%)	9.36%	9.75%
Near Term Projected 30-Year Treasury (3.08%)	9.80%	10.19%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.65%)	10.43%	10.88%
Near Term Projected 30-Year Treasury (3.08%)	10.87%	11.32%

Bond Yield Plus Risk Premium Approach

Q. PLEASE GENERALLY DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.

A. This approach is based on the financial tenet that equity investors bear the residual risk of ownership and therefore require a premium over the returns available to debt holders. Risk premium approaches, therefore, estimate the Cost of Equity as the sum of an Equity Risk Premium and a bond yield. The Equity Risk Premium is the difference between the historical Cost of Equity and long-term Treasury yields. Because we are calculating the risk premium for natural gas utilities, a reasonable approach is to use actual authorized returns for natural gas utilities as the historical measure of the Cost of Equity.

Q. PLEASE NOW EXPLAIN HOW YOU PERFORMED YOUR BOND YIELD PLUS RISK PREMIUM ANALYSIS.

A. As suggested 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 then gathered data for 1,035 natural gas rate

1 proceedings between January, 1980 and May 31, 2016 as reported by
2 Regulatory Research Associates ("RRA"). In addition to the authorized ROE, I
3 also calculated the average period between the filing of the case and the date
4 of the final order (the "lag period"). To reflect the prevailing level of interest
5 rates during the pendency of the proceedings, I calculated the average 30-year
6 Treasury yield over the average lag period (approximately 187 days).

7 Because the data covers a number of economic cycles,²⁶ the analysis also may
8 be used to assess the stability of the Equity Risk Premium. Prior research, for
9 example, has shown that the Equity Risk Premium is inversely related to the
10 level of interest rates.²⁷ That is, although interest rates and the Cost of Equity
11 generally are directionally related, they do not move in lock-step. That finding
12 is particularly relevant given the relatively low level of current Treasury yields.

13 **Q. HOW DID YOU MODEL THE RELATIONSHIP BETWEEN INTEREST RATES**
14 **AND THE EQUITY RISK PREMIUM?**

15 A. The basic method used was regression analysis, in which the observed
16 Equity Risk Premium is the dependent variable, and the average 30-year
17 Treasury yield is the independent variable. Because the analytical period
18 includes interest rates and authorized ROEs that during one period (i.e., the
19 1980's) are quite high and another (the post-Lehman bankruptcy period) that
20 are quite low relative to the long-term historical average, I used the semi-log
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22 ²⁶ National Bureau of Economic Research, U.S. Business Cycle Expansion and Contractions.

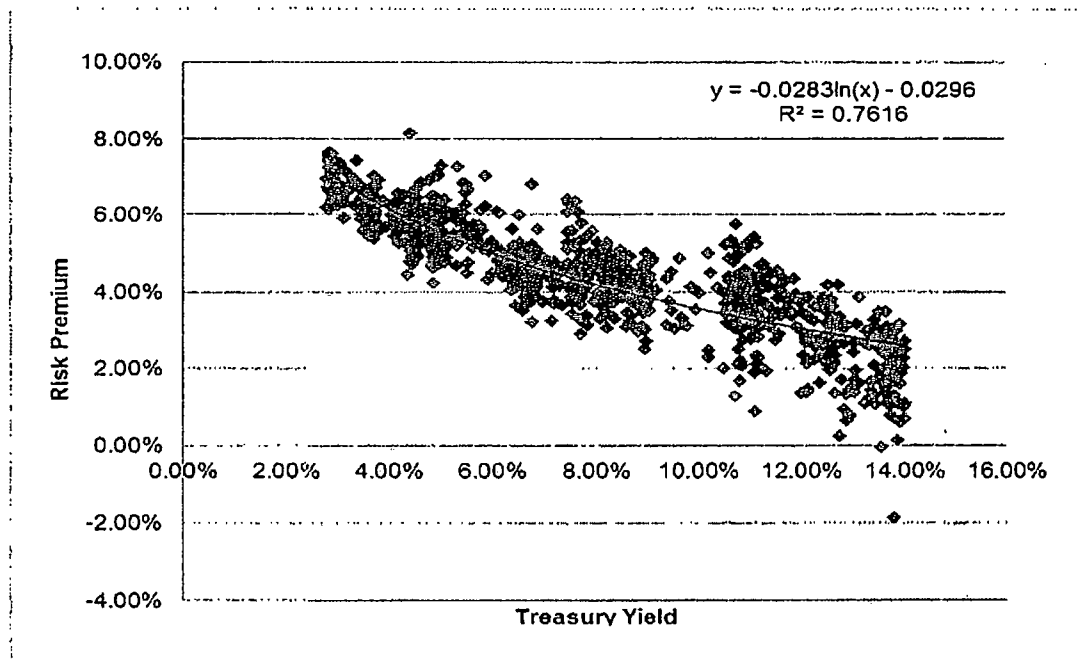
23 ²⁷ See, for example, Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia*
24 *Using Analysts' Growth Forecasts*, *Financial Management*, Summer 1992, at 63-70; Eugene F.
25 Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's*
Cost 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.

1 regression, in which the Equity Risk Premium is expressed as a function of the
2 natural log of the 30-year Treasury yield:

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

3
4 As shown on Chart 1 (below), the semi-log form is useful when
5 measuring an absolute change in the dependent variable (in this case, the Risk
6 Premium) relative to a proportional change in the independent variable (the 30-
7 year Treasury yield).

8 **Chart 1: Equity Risk Premium**



20 As Chart 1 demonstrates, over time there has been a statistically
21 significant negative relationship between the 30-year Treasury yield and the
22 Equity Risk Premium. Consequently, simply applying the long-term average
23 Equity Risk Premium of 4.53 percent (see Statement 8) would significantly
24 under-state the Cost of Equity; assuming the near-term projected 30-year
25 Treasury yield of 3.08 percent, for example, the simple average Equity Risk

1 Premium would suggest an ROE of 7.61%.²⁸ That, of course, is well below any
2 reasonable estimate. Based on the regression coefficients in Chart 1, however,
3 the implied ROE ranges from 9.98 percent to 10.31 percent (see Statement 8).

4 VIII. OTHER CONSIDERATIONS

5 Q. WHAT OTHER FACTORS HAVE YOU CONSIDERED IN DETERMINING
6 YOUR ROE RANGE AND RECOMMENDATION?

7 A. In addition to the capital market environment, I considered the effect of
8 flotation costs. Those factors are discussed in turn, below.

9 *Capital Market Environment*

10 Q. DO ECONOMIC CONDITIONS INFLUENCE THE REQUIRED COST OF
11 CAPITAL AND REQUIRED RETURN ON COMMON EQUITY?

12 A. Yes. As discussed in Section VII, the models used to estimate the Cost of
13 Equity are meant to reflect, and therefore are influenced by, current and
14 expected capital market conditions. Therefore, it is important to assess the
15 reasonableness of any financial model's results in the context of observable
16 market data. To the extent that certain ROE estimates are incompatible with
17 such data or inconsistent with basic financial principles, it is appropriate to
18 consider whether alternative estimation techniques are likely to provide more
19 meaningful and reliable results.

20 Q. DO YOU HAVE ANY GENERAL OBSERVATIONS REGARDING THE
21 RELATIONSHIP BETWEEN CURRENT CAPITAL MARKET CONDITIONS
22 AND THE COMPANY'S COST OF EQUITY?

23
24
25 ²⁸ 7.61% = 4.53% + 3.08%

1 A. Yes, I do. Much has been reported about the Federal Reserve's market
2 intervention since 2007, and its effect on interest rates. Although the Federal
3 Reserve completed its Quantitative Easing initiative in October 2014, it was not
4 until December 2015 that it raised the Federal Funds rate, and began the
5 process of rate normalization.²⁹ A significant issue, then, is how investors will
6 react as that process continues, and eventually is completed. A viable
7 outcome is that investors will perceive greater chances for economic growth,
8 which will increase the growth rates included in the Constant Growth DCF
9 model. At the same time, higher growth and the absence of Federal market
10 intervention could provide the opportunity for interest rates to increase, thereby
11 increasing the dividend yield portion of the DCF model. In that case, both
12 terms of the Constant Growth DCF model would increase, producing increased
13 ROE estimates.

14 At this time, market data is becoming increasingly disjointed, with
15 relatively low Treasury yields, and increasing equity market volatility and more
16 volatile credit spreads. As a consequence, it is difficult to rely on a single
17 model to estimate the Company's Cost of Equity. A more reasoned approach
18 is to understand the relationships among Federal Reserve policies, interest
19 rates, and measures of market risk, and to assess how those factors may affect
20 different models and their results. As discussed throughout my Direct
21 Testimony, the current market is one in which it is very important to consider a
22 broad range of data and models when determining the Cost of Equity.

23
24
25 ²⁹ Federal Reserve Press Release dated December 16, 2015.

1 Q. PLEASE SUMMARIZE THE EFFECT OF RECENT FEDERAL RESERVE
2 POLICIES ON INTEREST RATES AND THE COST OF CAPITAL.

3 A. Beginning in 2008, the Federal Reserve proceeded on a steady path of
4 initiatives intended to lower long-term Treasury yields.³⁰ The Federal Reserve
5 policy actions "were designed to put downward pressure on longer-term
6 interest rates by having the Federal Reserve take onto its balance sheet some
7 of the duration and prepayment risks that would otherwise have been borne by
8 private investors."³¹ Under that policy, "Securities Held Outright" on the Federal
9 Reserve's balance sheet increased from approximately \$489 billion at the
10 beginning of October 2008 to approximately \$18.230 trillion by the end of May
11 2016.³² To put that increase in context, the securities held by the Federal
12 Reserve represented approximately 3.29 percent of GDP at the end of
13 September 2008, and had risen to approximately 23.25 percent of GDP in May
14 2016.³³ As such, the Federal Reserve policy actions have represented a
15 significant source of liquidity, and have had a substantial effect on capital
16 markets.

17 Q. HAS THE FEDERAL RESERVE'S QUANTITATIVE EASING POLICY BEEN
18 ASSOCIATED WITH CHANGES IN THE PROXY COMPANIES' TRADING
19 LEVELS?

20 A. Yes, that appears to be the case. From January 2000 through the end
21

22 ³⁰ See Federal Reserve Press Release (June 19, 2013).

23 ³¹ Federal Reserve Bank of New York, Domestic Open Market Operations During 2012, p. 29 (Apr. 2013).

24 ³² Source: Federal Reserve Board Schedule H.4.1. "Securities held outright" include U.S. Treasury securities, Federal agency debt securities, and mortgage-backed securities.

25 ³³ Source: Federal Reserve Board Schedule H.4.1; Bureau of Economic Analysis. 2015 GDP data as of the third calendar quarter.

1 of August 2012 (that is, immediately prior to the third round of Quantitative
2 Easing), the proxy group's average P/E ratio traded at a nearly 8.00 percent
3 discount to the market. From September 2012 through May 2013, when the
4 Federal Reserve announced it would begin to taper its asset purchases, the
5 proxy group traded at a 14.00 percent premium to the market. In fact, between
6 September 2012 and August 31, 2015, the proxy group P/E ratio traded at a
7 7.00 percent premium to the market.

8 More recently, even after the Federal Reserve noted that it would be
9 "patient" in assessing when it would normalize monetary policy, the proxy
10 group's average P/E ratio increased to approximately 113.00% of the market
11 P/E (i.e., an 13.00% premium) since the beginning of September 2015, closer
12 to the long-term relationship. Given the convergence in the proxy group and
13 market average P/E ratios, it may be that investors saw the gas utility sector as
14 somewhat over-valued relative to the market, and bid prices down in response.
15 The sustainability of recent utility company valuations is a significant analytical
16 issue. Because DCF-based methods depend on recent stock prices as a
17 principal input, and (in the case of the Constant Growth model) assume that
18 P/E ratios and the Cost of Equity will remain constant in perpetuity, the
19 lingering effects of Federal Reserve intervention may be weighing on DCF
20 results.

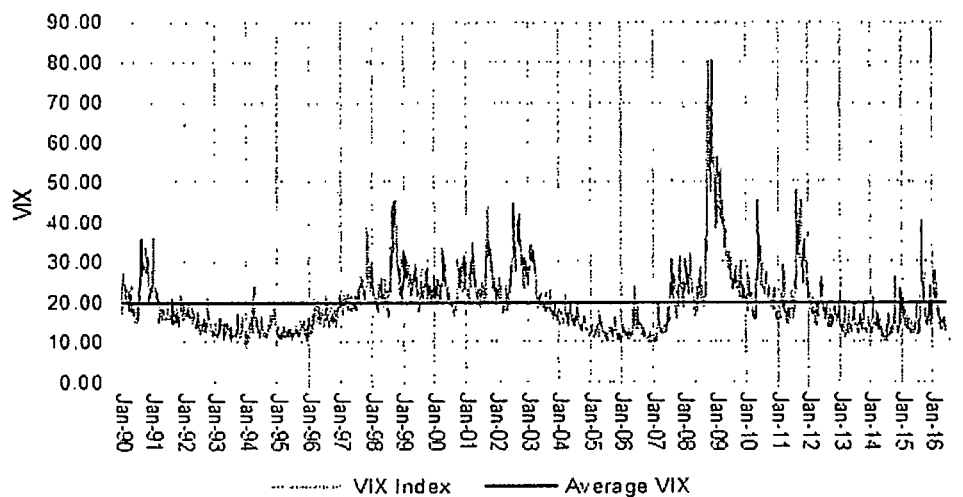
21 **Q. PLEASE DISCUSS CHANGES IN EQUITY MARKET VOLATILITY.**

22 **A.** One measure of the expected volatility, or risk, of the stock market is the
23 Chicago Board Options Exchange Volatility Index (known as the "VIX"). The
24 VIX is a highly visible and often-reported barometer of investor risk sentiments
25 which measures market expectations of near-term volatility of the stock market

1 implied by near- and next-term options on the S&P 500 Index.

2 Although the VIX is not presented as a percentage, it should be
3 understood as such. That is, if the VIX stood at 17.00, it would be interpreted
4 as an expected standard deviation in annual returns on the market index of
5 17.00% over the coming 30 trading days. As shown on Chart 2, the VIX has
6 averaged approximately 19.79 since 1990. That average is quite close to the
7 long-term standard deviation of annual returns on the S&P 500, which has
8 been 20.55%.³⁴

9 **Chart 2: VIX Daily Levels and Long-Term Average**³⁵



As shown in Chart 2, the VIX was at relatively low levels from 2012 – 2015 (which, as discussed, appears to be associated with Federal Reserve monetary policy initiatives). The average VIX in 2012 (the year of the Company's last rate case) was 17.80, nearly 10.00% lower than its long-term average. Beginning in the latter portion of 2015, however, volatility returned and recently

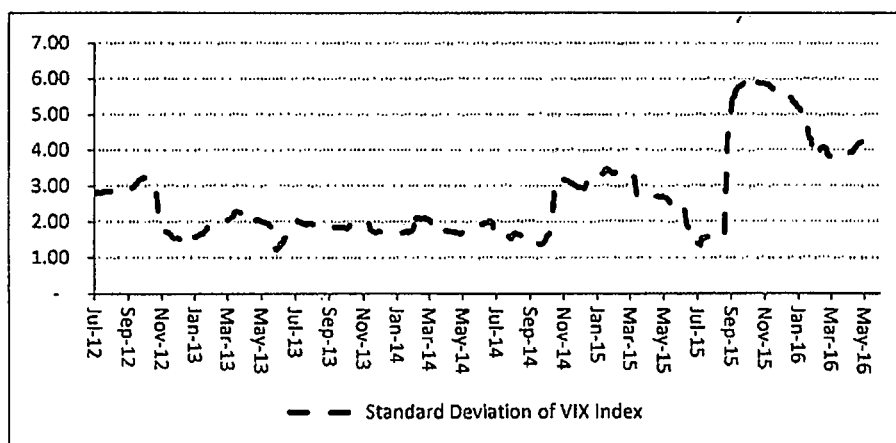
³⁴ Source: Bloomberg Professional.

³⁵ Source: Bloomberg Professional.

has increased well above both its recent and long-term average. From that broad market perspective, equity risk currently is elevated relative to historical levels in general, and relative to 2014 in particular.

A further measure of market uncertainty is the volatility of the VIX itself. That is, we can look to the volatility of volatility, as measured by the standard deviation of the VIX. Since late 2014, it has noticeably increased. Such volatility indicates that although interest rates are still near historical lows, market risk now exceeds its historical average. Because investors require higher returns to take on higher risk, that data also indicates that the Cost of Equity likely is increasing, as well.

Chart 3: Standard Deviation (100 days) of VIX³⁶



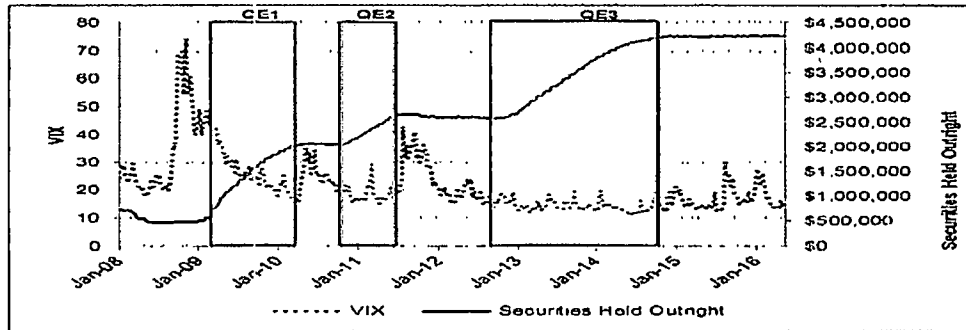
³⁶ Source: Bloomberg Professional.

1 Those findings are consistent with the VVIX, which is a traded index of
2 the expected volatility of the VIX. Over the long-term, the VVIX has averaged
3 approximately 85.00; its 2014 average was somewhat below that level (83.01).
4 In 2015, the VVIX increased to (on average) 94.82, and to date in 2016, has
5 averaged 91.65; the 2015-2016 average has been 93.90. Just as the
6 backward-looking standard deviation of the VIX indicates that observed
7 volatility increased considerably in 2015 and 2016, the VVIX indicates that
8 expected volatility also has been well above the 2014 levels.³⁷

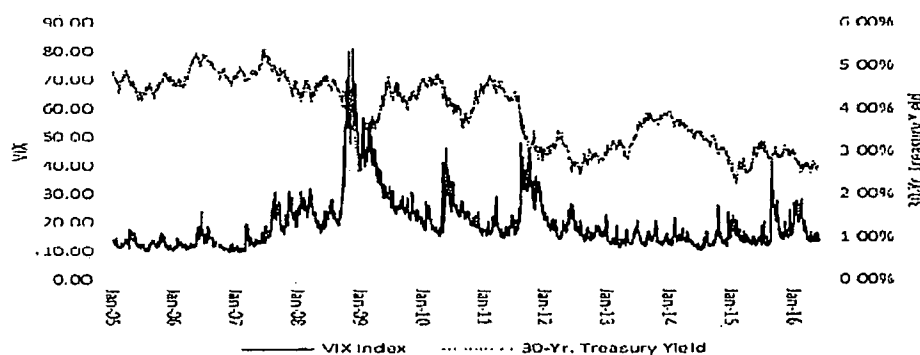
9 **Q. HAS THE FEDERAL RESERVE'S QUANTITATIVE EASING POLICY**
10 **AFFECTED MARKET VOLATILITY?**

11 A. Just as market intervention by the Federal Reserve has reduced interest
12 rates, it also had the effect of reducing market volatility. As shown in Chart 4
13 (below), each time the Federal Reserve began to purchase bonds (as
14 evidenced by the increase in "Securities Held Outright" on its balance sheet),
15 volatility subsequently declined. In fact, in September 2012, when the Federal
16 Reserve began to purchase long-term securities at a pace of \$85 billion per
17 month, volatility (as measured by the VIX) fell, and through October 2014
18 remained in a relatively narrow range. The reason is quite straight-forward:
19 Investors became confident that the Federal Reserve would intervene if
20 markets were to become unstable.

21
22
23
24
25 ³⁷ Source: Bloomberg Professional.

Chart 4: VIX and Federal Reserve Asset Purchases³⁸

Even with the effect of the Federal Reserve intervention, periods of increased equity market volatility have been associated with unusually low Treasury bond yields. That relationship makes sense, given that investors increasingly focus on capital preservation during turbulent markets. As Chart 5 demonstrates, when volatility peaks (as measured by the VIX), Treasury yields fall; that is the case because increased demand for safe-haven securities will bid up their price, and down their yield.

Chart 5: VIX and U.S. Treasury Yields³⁹

³⁸ Source: Federal Reserve Economic Data ("FRED"), Federal Reserve Bank of St. Louis; Federal Reserve Statistical Release H.4.1, Factors Affecting Reserve Balances.

³⁹ Source: Bloomberg Professional.

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1 mover", would have the power to change the prices of goods or services,
2 including bond and common stock securities.⁴⁰ In other words, under the
3 PCCM hypothesis, no single trader would have a significant effect on market
4 prices.

5 Classic valuation theory assumes that investors trade securities
6 rationally, with prices reflecting their perceptions of value.⁴¹ Although central
7 banks have the ability to set benchmark interest rates, they have been
8 maintaining below normal rates to stimulate continued economic and capital
9 market recovery. It therefore is reasonable to conclude that the Federal
10 Reserve and other central banks have been acting as market-movers, thereby
11 having a significant effect on the market prices of both bonds and stocks. The
12 presence of market-movers, such as the Federal Reserve, runs counter to the
13 PCCM hypothesis, which underlies traditional Cost of Equity models.
14 Consequently, the results of those models should be considered in the context
15 of both quantitative and qualitative information.

16 **Q. ARE INTEREST RATES EXPECTED TO INCREASE GOING FORWARD?**

17 A. Yes, they are. For example, the approximately 50 economists surveyed
18 by Blue Chip Financial Forecast see the 30-year Treasury yield as increasing to
19 3.90 percent by 2018.⁴² Those projections are supported by the fact that
20 investors currently are willing to pay about twice the premium for the option to
21 sell long-term Government bonds in January 2018 (with an exercise price equal
22

23 ⁴⁰See Myron J. Gordon, *The Cost of Capital to a Public Utility*, 1974, at 15. See also
24 <http://www.nasdaq.com/investing/glossary/p/perfectly-competitive-financial-markets>.

25 ⁴¹ i.e., the traditional efficient markets formulation. See Stowe et al., *Equity Asset Valuation*, 2007, at 18.

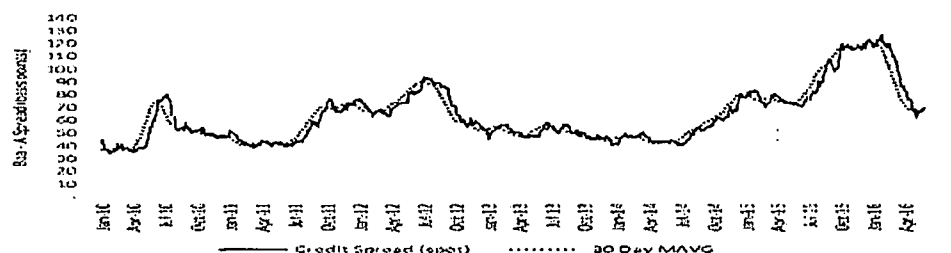
⁴² See Blue Chip Financial Forecast, Vol. 35 No. 6, June 1, 2015, at 14.

to the current price) than they are willing to pay for the option to buy those bonds.⁴³ Because the prices of bonds move inversely to interest rates,⁴⁴ those option prices indicate that investors believe it is considerably more likely that interest rates will increase over the coming year, than it is likely that they will decrease.

Q. WHAT OTHER INDICATORS SUGGEST INVESTOR RISK AVERSION HAS INCREASED?

A. "Credit spreads", which are the incremental return required by debt investors to take on the default risk associated with securities of differing credit quality, have increased significantly over the past year. As Chart 6 demonstrates, the estimated credit spread (on both a spot and 30-day moving average basis) has widened, such that it currently well exceeds the levels seen from 2011 through 2014. By way of example, since the middle of 2014, the 30-day average spread increased by approximately 23 basis points, or a 51.38 percent increase.

Chart 6: Moody's Utility Bond Index Baa-A Credit Spread⁴⁵



⁴³ Source: <http://www.nasdaq.com/symbol/tlt/option-chain?dateindex=7>

⁴⁴ That is, as interest rates move up (down), bond prices move down (up).

⁴⁵ Source: Bloomberg Professional.

1 To the extent that credit spreads have increased, they provide an observable
2 measure of the capital markets' increased risk aversion; increased risk aversion
3 by investors leads to an increased Cost of Equity. Moreover, as the Bond Yield
4 Plus Risk Premium analysis demonstrates, there is a clear and well-established
5 inverse relationship between the level of interest rates and the Equity Risk
6 Premium. Consequently, lower Treasury yields do not necessarily imply a
7 correspondingly lower Cost of Equity, particularly considering the current level
8 of credit spreads is significantly higher than seen in 2014.

9 **Q. WHAT CONCLUSIONS DO YOU DRAW FROM THOSE ANALYSES, AND**
10 **HOW DO THOSE CONCLUSIONS AFFECT YOUR ROE**
11 **RECOMMENDATION?**

12 **A.** These data clearly demonstrate that the current capital market is
13 experiencing levels of volatility and instability that exceed those experienced
14 during the Federal Reserve's policy of Quantitative Easing. Measures such as
15 credit spreads and expected volatility, which are directly observable, indicate
16 that capital market risks are now greater than they had been, even relative to
17 mid-2014.

18 Because not all models used to estimate the Cost of Equity adequately
19 reflect those changing market dynamics, it is important to give appropriate
20 weight to the methods and to their results. Moreover, because those models
21 produce a range of results, it is important to consider the type of data discussed
22 above in determining where the Company's ROE falls within that range. On
23 balance, I continue to believe that Constant Growth DCF-based results should
24 be viewed very carefully, and that somewhat more weight should be afforded
25 the Risk Premium-based methods. I believe that doing so supports my

recommended range of 10.00 percent to 10.50 percent, and my ROE recommendation of 10.25 percent.

Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are associated with the sale of new issues of common stock. Such costs include out-of-pocket expenditures for preparation, filing, underwriting and other issuance costs of common stock.

Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED ROE?

A. In order to attract and retain new investors, a regulated utility must have the opportunity to earn a return that is both competitive and compensatory. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diminishing its ability to attract adequate capital on reasonable terms.

Q. ARE FLOTATION COSTS PART OF THE UTILITY'S INVESTED COSTS OR PART OF THE UTILITY'S EXPENSES?

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and therefore are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are recognized over time and are outstanding into perpetuity. As a result, the great majority of a utility's flotation cost is incurred prior to the test year, but remains part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes.

1 Therefore, recovery of flotation costs is appropriate even if no new issuances
2 are planned in the near future because failure to allow such cost recovery may
3 deny Washington Gas the opportunity to earn its required rate of return in the
4 future.

5 **Q. DO THE DCF AND CAPM MODELS ALREADY INCORPORATE INVESTOR**
6 **EXPECTATIONS OF A RETURN IN ORDER TO COMPENSATE FOR FLOTATION**
7 **COSTS?**

8 **A.** No. The models used to estimate the appropriate ROE assume no
9 "friction" or transaction costs, as these costs are not reflected in the market
10 price (in the case of the DCF model) or risk premium (in the case of the CAPM
11 and the Bond Yield Plus Risk Premium model). Therefore, it is appropriate to
12 consider flotation costs when determining where within the range of reasonable
13 results the Company's return should fall.

14 **Q. IS THE NEED TO CONSIDER FLOTATION COSTS RECOGNIZED BY THE**
15 **ACADEMIC AND FINANCIAL COMMUNITIES?**

16 **A.** Yes. The need to reimburse investors for equity issuance costs is
17 justified by the academic and financial communities in the same spirit that
18 investors are reimbursed for the costs of issuing debt. This treatment is
19 consistent with the philosophy of a fair rate of return. As explained by Dr.
20 Shannon Pratt

21 Flotation costs occur when a company issues new stock.
22 The business usually incurs several kinds of flotation or
23 transaction costs, which reduce the actual proceeds
24 received by the business. Some of these are direct out-of-
25 pocket outlays, such as fees paid to underwriters, legal
expenses, and prospectus preparation costs. Because of
this reduction in proceeds, the business's required returns
must be greater to compensate for the additional costs.

1 Flotation costs can be accounted for either by amortizing the
2 cost, thus reducing the net cash flow to discount, or by
3 incorporating the cost into the cost of equity capital. Since
4 flotation costs typically are not applied to operating cash
5 flow, they must be incorporated into the cost of equity
6 capital.⁴⁶

7 **Q. HAVE YOU CALCULATED THE EFFECT OF FLOTATION COSTS ON THE**
8 **RETURN ON EQUITY?**

9 **A.** Yes, I have. I modified the DCF calculation to derive the dividend yield
10 that would reimburse investors for direct issuance costs. Based on the weighted
11 average issuance costs shown in Statement 10, a reasonable estimate of
12 flotation costs is approximately 0.12 percent (12 basis points).

13 **IX. CAPITAL STRUCTURE**

14 **Q. WHAT IS THE COMPANY'S PROPOSED CAPITAL STRUCTURE?**

15 **A.** In this proceeding, the Company proposes a capital structure including
16 57.55 percent common equity, 1.50 percent preferred equity, 37.66 percent
17 long-term debt, 2.99 percent short-term debt, and 0.30 percent job
18 development tax credits. The Test Year capital structure is based on the
19 Company's actual capital structure at September 30, 2015.

20 **Q. IS THERE A GENERALLY ACCEPTED APPROACH TO ASSESSING THE**
21 **CAPITAL STRUCTURE FOR A REGULATED NATURAL GAS UTILITY?**

22 **A.** Yes, there is. In general, it is important to consider the capital structure
23 in light of industry norms and investor requirements. That is, the capital
24 structure should be reasonably consistent with industry practice, and enable
25 the subject company to maintain its financial integrity, thereby enabling access

⁴⁶ Shannon P. Pratt, Roger J. Grabowski, Cost of Capital: Applications and Examples, 4th ed. (John Wiley & Sons, Inc., 2010), at 586.

1 to capital at competitive rates under a variety of economic and financial market
2 conditions.

3 **Q. HOW DOES THE CAPITAL STRUCTURE AFFECT THE COST OF**
4 **CAPITAL?**

5 A. It is well understood that from a financial perspective, there are two
6 general categories of risk: business risk and financial risk. Business risk
7 includes operating, market, regulatory, and competitive uncertainties, while
8 financial risk is the incremental risk to investors associated with additional
9 levels of debt. As such, the capital structure relates to a Company's financial
10 risk, which represents the risk that a company may not have adequate cash
11 flows to meet its financial obligations, and is a function of the percentage of
12 debt (or financial leverage) in its capital structure. In that regard, as the
13 percentage of debt in the capital structure increases, so do the fixed obligations
14 for the repayment of that debt. Consequently, as the degree of financial
15 leverage increases, the risk of financial distress (i.e., financial risk) also
16 increases.⁴⁷ In essence, even if two firms face the same business risks, a
17 company with meaningfully higher levels of debt in its capital structure is likely
18 to have a higher cost of both debt and equity. Since the capital structure can
19 affect the subject company's overall level of risk, it is an important
20 consideration in establishing a just and reasonable rate of return.

21 **Q. IS THERE SUPPORT FOR THE PROPOSITION THAT THE CAPITAL**
22 **STRUCTURE IS A KEY CONSIDERATION IN ESTABLISHING AN**
23 **APPROPRIATE RETURN ON EQUITY?**

24
25 ⁴⁷ See Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 45-46.

1 A. Yes. The United States Supreme Court and various utility commissions
2 have long recognized the role of capital structure in the development of a just
3 and reasonable rate of return for a regulated utility. In particular, a utility's
4 leverage, or debt ratio, has been explicitly recognized as an important element
5 in determining a just and reasonable rate of return:

6 Although the determination of whether bonds or
7 stocks should be issued is for management, the matter of
8 debt ratio is not exclusively within its province. Debt ratio
9 substantially affects the manner and cost of obtaining new
10 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.⁴⁸

11 Perhaps ultimate authority for balancing the issues of cost and financial
12 integrity is found in the Supreme Court's statement in *Hope Natural Gas*:

13 The rate-making process under the Act, i.e., the fixing
14 of "just and reasonable" rates, involves a balancing of the
15 investor and the consumer interests." 320 U.S. at 603, 64 S.
Ct. at 288. The equity investor's stake is made less secure
16 as the company's debt rises, but the consumer rate-payer's
burden is alleviated.⁴⁹

17 Consequently, the principles of fairness and reasonableness with
18 respect to the allowed rate of return and capital structure are considered at
19 both the federal and state levels.

20 Q. PLEASE SUMMARIZE YOUR ANALYSIS OF THE PROXY COMPANIES'
21 CAPITAL STRUCTURES.

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23
24 ⁴⁸ *New England Telephone & Telegraph Co. v. State*, 98 N.H. 211, 220, 97 A.2d 213, 220 (1953), citing
New England Tel. & Tel. Co. v. Department of Pub. Util., (Mass.) 327 Mass. 81, 97 N.E. 2d 509, 514;
Petitions of New England Tel. & Tel. Co. 116 Vt. 480, 80 A2d 671.

25 ⁴⁹ *Communications Satellite Corp. v. FCC*, 198 U.S. App. D.C. 60, 63-64611 F.2d 883.

1 A. First, it is important to keep in mind that the proxy group has been
2 selected to reflect comparable companies in terms of financial and business
3 risk. As such, it is appropriate to review the proxy companies' capital structures
4 as a means of assessing whether the proposed capital structure is consistent
5 with industry practice. To the extent that the Company's proposed capital
6 structure differs from industry practice, the difference in financial risk should be
7 considered when estimating its required Cost of Equity.

8 To make that assessment, I calculated the average capital structure for
9 each of the proxy companies over the last eight quarters (please see Statement
10 10). The mean of the proxy group actual capital structures is 48.87 percent
11 common equity and 51.13 percent total debt; the common equity ratios range
12 from 42.67 percent to 54.05 percent.⁵⁰ I also have considered information
13 presented by Company Witness Gode, which supports the difference between
14 the Company's equity ratio and those of its peers due to the relative use of
15 deferred taxes as a funding source.

16 **Q. WHAT IS THE BASIS FOR USING AVERAGE CAPITAL COMPONENTS**
17 **RATHER THAN A POINT-IN-TIME MEASUREMENT?**

18 A. Measuring the capital components at a particular point in time can skew
19 the capital structure by the specific circumstances of a particular period.
20 Therefore, it is more appropriate to normalize the relative relationship between
21 the capital components over a period of time.

22 **Q. HAVE YOU ALSO CONSIDERED WHETHER THE PROPOSED CAPITAL**
23 **STRUCTURE IS CONSISTENT WITH PRIOR COMMISSION DECISIONS?**

24
25 ⁵⁰ Source: SNL Financial.

1 A. Yes, I have. In its most recent rate case, Washington Gas was
2 authorized its actual test year capital structure by the Commission.⁵¹ In this
3 proceeding, the Company's proposed common equity ratio likewise is based on
4 its actual test year-end capital structure.

5 Q. WHAT WOULD BE THE EFFECT OF ARTIFICIALLY INCREASING THE
6 DEBT COMPONENT AND ARTIFICIALLY REDUCING THE COMMON
7 EQUITY COMPONENT OF THE COMPANY'S CAPITAL STRUCTURE?

8 A. Lowering its equity ratio would increase the Company's cost of capital.
9 Based on criteria established by Standard and Poor's ("S&P"), a company's
10 credit rating is the result of the combination of the company's "Business Risk"
11 rating and its "Financial Risk" rating. A decision by the Commission to increase
12 the Company's debt ratio (i.e., increase its financial leverage) could adversely
13 affect both the Company's Business Risk rating and investors' perception of the
14 regulatory environment in Virginia. There is little question that the rating
15 agencies such as S&P consider the regulatory environment, including the
16 extent to which the presiding regulatory commission is supportive of issues
17 affecting credit quality, to be an important determinant of the subject company's
18 credit profile.

19 Similarly, Moody's considers the regulatory structure to be so important
20 that 50.00 percent of the factors that weigh in a ratings determination are
21 related to the nature of regulation.⁵² Among the factors considered by Moody's

23 ⁵¹Virginia Corporation Commission, Case No. PUE-2010-00139, Application of Washington Gas Light
24 Company for a general increase in rates and charges and to revise its terms and conditions for gas
service, July 2, 2012, at 9.

25 ⁵² Moody's Investors Service, *Rating Methodology; Regulated Gas and Electric Utilities* at 6 (Dec. 23,
2013).

1 in assessing the regulatory framework are the predictability and consistency of
2 regulatory actions:

3 As the revenues set by the regulator are a primary component of a
4 utility's cash flow, the utility's ability to obtain predictable and
5 supportive treatment within its regulatory framework is one of the
6 most significant factors in assessing a utility's credit quality. The
7 regulatory framework generally provides more certainty around a
8 utility's cash flow and typically allows the company to operate with
9 significantly less cushion in its cash flow metrics than comparably
10 rated companies in other industrial sectors.

11 In situations where the regulatory framework is less supportive, or
12 is more contentious, a utility's credit quality can deteriorate
13 rapidly.⁵³

14 **Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S**
15 **PROPOSED CAPITAL STRUCTURE?**

16 **A.** I believe that the proposed common equity ratio of 57.55 percent, which
17 represents the Company's actual capital structure at the end of the test year, is
18 reasonable and appropriate. This is especially true in light of the Company's
19 use of zero-cost deferred tax funding and bonus depreciation. Artificially
20 increasing its debt leverage would most likely reduce investor confidence in the
21 regulatory support for its Virginia operations, and increase Washington Gas'
22 financial risk. Combined with the continuing risk aversion in the current capital
23 market, I believe it is likely the increased financial and regulatory risk would
24 increase investors' required return.

25 **X. CONCLUSIONS AND RECOMMENDATION**

Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S COST OF
EQUITY?

⁵³ Moody's Investors Service, Regulatory Frameworks – Ratings and Credit Quality for Investor-Owned Utilities at 2 (June 18, 2010).

WITNESS HEVERT

1 I believe that a rate of return on common equity in the range of 10.00
2 percent to 10.50 percent represents the range of equity investors' required rate
3 of return for investment in natural gas utilities. Within that range, I recommend
4 an ROE of 10.25 percent. Tables 8a and 8b summarize my analytical results.
5 In addition to the methodologies included in Tables 8a and 8b, my
6 recommendation also takes into consideration the capital environment in which
7 the Company operates.

Table 8a: Summary of Discounted Cash Flow Results⁵⁴

	<i>Low</i>	<i>Mean</i>	<i>High</i>
<i>Constant Growth DCF Results</i>			
30-Day Average	6.89%	8.65%	10.54%
90-Day Average	6.96%	8.72%	10.61%
180-Day Average	7.15%	8.91%	10.80%
<i>Multi-Stage DCF Results</i>			
	<i>Low</i>	<i>Mean</i>	<i>High</i>
30-Day Average	8.45%	8.81%	9.24%
90-Day Average	8.51%	8.89%	9.32%
180-Day Average	8.71%	9.10%	9.56%

Table 8b: Summary of Risk Premium Results⁵⁵

<i>Market Risk Premium Derived By</i>	<i>Bloomberg</i>	<i>Value Line</i>
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.65%)	9.36%	9.75%
Near Term Projected 30-Year Treasury (3.08%)	9.80%	10.19%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury 2.65%)	10.43%	10.88%
Near Term Projected 30-Year Treasury (3.08%)	10.87%	11.32%
<i>Bond Yield Plus Risk Premium Approach</i>		
Current 30-Year Treasury (2.65%)	9.98%	
Near Term Projected 30-Year Treasury (3.08%)	9.99%	
Long Term Projected 30-Year Treasury (4.45%)	10.31%	

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

⁵⁴ See, also Statement 2 and Statement 4. Results include estimated flotation costs.

⁵⁵ See, also Statement 7 and Statement 8.