STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

BEFORE THE

PUBLIC UTILITIES COMMISSION

SUEZ WATER RHODE ISLAND, INC.) DOCKET NO. 4800

DIRECT TESTIMONY

OF

MATTHEW I. KAHAL

ON BEHALF OF THE

DIVISION OF PUBLIC UTILITIES AND CARRIERS

JUNE 8, 2018

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I. QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Matthew I. Kahal. I am employed as an independent consultant retained in this matter by the Division of Public Utilities and Carriers ("Division"). My business address is 1108 Pheasant Crossing, Charlottesville, Virginia 22901.

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND.

A. I hold B.A. and M.A. degrees in economics from the University of Maryland and have completed course work and examination requirements for the Ph.D. degree in economics. My areas of academic concentration included industrial organization, economic development and econometrics.

Q. WHAT IS YOUR PROFESSIONAL BACKGROUND?

A. I have been employed in the area of energy, utility and telecommunications consulting for the past 35 years working on a wide range of topics. Most of my work has focused on electric utility integrated planning, plant licensing, environmental issues, mergers and financial issues. I was a co-founder of Exeter Associates, and from 1981 to 2001 I was employed at Exeter Associates as a Senior Economist and Principal. During that time, I took the lead role at Exeter in performing cost of capital and financial studies. In recent years, the focus of much of my professional work has shifted to electric utility restructuring and competition.

Prior to entering consulting, I served on the Economics Department faculties at the University of Maryland (College Park) and Montgomery College teaching courses on economic principles, development economics and business.

A complete description of my professional background is provided in Appendix A.

Q. HAVE YOU PREVIOUSLY TESTIFIED AS AN EXPERT WITNESS BEFORE UTILITY REGULATORY COMMISSIONS?

A. Yes. I have testified before approximately two-dozen state and federal utility commissions in more than 430 separate regulatory cases. My testimony has addressed a variety of subjects including fair rate of return, resource planning, financial assessments, load forecasting, competitive restructuring, rate design, purchased power contracts, merger economics and other regulatory policy issues. These cases have involved electric, gas, water and telephone utilities. A list of these cases may be found in Appendix A, with my statement of qualifications.

Q. WHAT PROFESSIONAL ACTIVITIES HAVE YOU ENGAGED IN SINCE LEAVING EXETER AS A PRINCIPAL IN 2001?

A. Since 2001, I have worked on a variety of consulting assignments pertaining to electric restructuring, purchase power contracts, environmental controls, cost of capital and other regulatory issues. Current and recent clients include the U.S. Department of Justice, U.S. Air Force, U.S. Department of Energy, the Federal Energy Regulatory Commission, the Connecticut Attorney General, the Pennsylvania Office of Consumer Advocate, New Jersey Division of Rate Counsel, Rhode Island Division of Public Utilities, the Louisiana Public Service Commission, the Arkansas Public Service Commission, the Maryland Department of Natural Resources and

Energy Administration, the New Hampshire Consumer Advocate, the Ohio Consumer Counsel and certain private clients as consumers of utility services.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE RHODE ISLAND COMMISSION?

A. Yes. I have testified on cost of capital and other matters before this Commission in gas, water and electric cases during the past 35 years. A listing of those cases is provided in my attached Statement of Qualifications, Appendix A. This includes the previous two rate cases (RIPUC Docket Nos. 4255 and 4434) for the applicant in this case, SUEZ Water Rhode Island, Inc. ("SWRI", or "the Company"), which was previously named United Water Rhode Island, Inc. In all such cases, my testimony was on behalf of the Division of Utilities and Carriers ("the Division").

II. OVERVIEW

A. Summary of Recommendation

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I have been asked by the Division to develop a recommendation concerning the fair rate of return on the water utility rate base of SWRI. This includes both a review of the Company's proposal concerning rate of return and the preparation of an independent study of the cost of common equity. I am providing my recommendation to the Division for use in calculating the test year annual revenue requirement in this case.

As the Commission is aware, SWRI is not an independent company, nor is it publically traded. It is directly owned by SUEZ Water Resources, Inc. ("SWR"), which itself is a wholly-owned subsidiary of a much larger foreign company, Suez S.A., which has other water utility operations but also has extensive non-utility operations.

Q. WHAT IS THE COMPANY'S RATE OF RETURN PROPOSAL IN THIS CASE?

A. As presented on Exhibit HW-1, Schedule 1, page 1 of 2, the Company requests an authorized overall rate of return of 7.82 percent. The proposed capital structure is that of parent company, SWR, at December 31, 2017. It includes 54.19 percent common equity, 45.81 percent long-term debt and excludes short-term debt. The filed testimony provides little explanation for this capital structure, and instead merely references Schedule 2.8(C) as the source. The overall return includes a return on common equity ("ROE") of 10.5 percent and is sponsored by the Company's outside witness, Mr. Harold Walker.

The Company is requesting in this case an increase in both the equity ratio and the return on equity as compared with that approved by this Commission in its last rate case, Docket No. 4434. In that case, the Commission approved a settlement, approved in 2014, with an equity ratio of 53.31 percent and a ROE of 9.65 percent.

Q. WHY IS THE COMPANY'S PROPOSED RATEMAKING CAPITAL STRUCTURE BASED ON ITS PARENT RATHER THAN USING ITS OWN?

A. SWRI is a very small company and is capitalized at 100 percent equity. As the Company recognizes, this would be overly expensive and inappropriate capital structure for ratemaking. By comparison, the parent capital structure is far more reasonable, and the parent is the ultimate source SWRI's capital base. I concur with this proposed approach. As shown in response to Division, almost all of parent SWR's business activity is water or waste water utility. The use of the parent SWR consolidated capital structure for the SWRI ratemaking capital structure and cost of debt is the approach that was approved by this Commission in the Company's last two rate cases.

Q. WHAT IS YOUR RECOMMENDATION AT THIS TIME ON RATE OF RETURN?

A. As summarized on Schedule MIK-1, page 1 of 1, I am recommending at this time a return on SWRI's water utility rate base of 6.98 percent. This includes a return on common equity ("ROE") of 9.0 percent and a capital structure of 46.09 percent total debt (inclusive of short-term debt) and 53.91 percent common. It includes the Company's statement of its December 31, 2017 common equity, its claimed long-term debt balance outstanding at that date and the 12-month average balance of short-term debt for the period ending December 2017. I am employing a cost of long-term debt of 4.65 percent, which is the same as proposed by the Company, and a cost rate of short-term debt of 2.65 percent, which is the latest actual cost rate.

Q. HOW DOES MR. WALKER DEVELOP HIS 10.5 PERCENT ROE RECOMMENDATION?

A. Mr. Walker utilizes three cost of equity methods: (1) Discounted Cash Flow (DCF); (2) the Risk Premium; and (3) Capital Asset Pricing Model (CAPM), with each methodology applied to a proxy group of eight publically-traded water companies. The results of these three studies average to 10.45 percent. He also presents projections of water utility company earned ROEs (as projected by the *Value Line Investment Survey)* and obtains a range of 10.5 to 14.0 percent which he suggests is supportive of his recommendation in this case. This merely measures accounting profits, not the market-based equity return required by investors, and is not a cost of equity study.

The 10.45 percent average of the three studies incorporates two adjustments or "adders". First, the three studies include an adder of 0.25 percent reflecting Mr. Walker's assertion that SWRI is riskier than the proxy group (in large part due to its smaller size and lack of geographic diversification). Absent this adder, his studies average to 10.2 percent. Second, one of the three studies reflects a 110 basis point adder for the fact that his proxy water companies are smaller than the average publically traded company. Absent this adjustment (which is unsupportable), his CAPM would produce a cost of equity estimate of less than 9 percent as compared to his reported result of 10 percent. My testimony explains why these two ROE adders are unreasonable and should be rejected.

Q. HOW HAVE YOU DEVELOPED YOUR 9.0 PERCENT ROE RECOMMENDATION?

A. I rely primarily on the use of the DCF model as applied to a water utility proxy group that is very similar to that used by Mr. Walker. This produces a range of 8.6 to 9.1 percent, with a midpoint of 8.85 percent. In addition, the CAPM produces a range of 6.8 to 8.9 percent, although I tend to place greater weight on the upper end of this range. I note that the DCF has traditionally been this Commission's preferred method for setting the ROE.

In my opinion, these cost of equity results, taking into account the recent financial market trends, support the reasonableness of my 9.0 percent recommendation at this time.

Q. DO YOU CONSIDER SWRI TO BE A LOW-RISK UTILITY COMPANY?

A. Yes, very much so. SWRI provides monopoly water utility service in its Rhode Island service territory, subject to the regulatory oversight of this Commission. There is no indication of any material increase in business or financial risk relative to other water utilities in recent years. Moreover, in this case it is my understanding that the Division supports the implementation of a Distribution Service Investment Charge ("DISC") to provide for the prompt cost recovery of qualified ongoing investment spending, which should further enhance the Company's already favorable business risk profile. In Section III of my testimony I discuss the business risk attributes for the Company (i.e., specifically its parent) presented in the most recent credit rating report.

Q. THE MAIN DIFFERENCE BETWEEN YOUR RECOMMENDATION AND THAT OF WITNESS WALKER IS HIS 10.5 PERCENT ROE. IS HIS ROE FIGURE CONSISTENT WITH COST OF CAPITAL TRENDS AND CONDITIONS?

A. No, it is not. First and foremost, his recommendation is greatly overstated due to serious flaws in his cost of equity studies, arbitrary assumptions and inappropriate risk adders. I explain these flaws in some detail in Section V of my testimony. A properly performed water utility DCF study using relatively recent market data would support a cost of equity estimate of approximately 9.0 percent.

The Company's current-authorized ROE is 9.65 percent based on a 2014 settlement. Mr. Walker certainly has not shown any increase in business or financial risk for SWRI since 2014. Indeed, in this case the Company proposes the implementation of a DISC cost recovery mechanism (per witness Prettyman), a regulatory mechanism that clearly is risk reducing by providing between rate case revenue support for the Company's construction plan. With some modifications, this is supported by the Division as noted above. In addition, the Company proposes to increase its common equity ratio from 53 percent approved in the last case to 54 percent in this case, an increase that modestly improves cash flow, credit metrics and financial risk.

Based on risk considerations, the Company should lower its ROE request significantly from the current 9.65 percent, not increase it. In addition, the utility cost of equity has trended downward since 2014 based on market forces.

Q. IS THIS DOWNWARD TREND IN THE MARKET COST OF CAPITAL REFLECTED IN WATER UTILITY ROE REWARDS?

A. Yes, it is based upon Regulatory Research Associates ("RRA") rate case survey results for water utilities. In the table below, I show the trend in utility commission water utility ROE awards and approved common equity ratios since 2011.[1]

[1] *RRA Water Advisory Major Rate Case Decision January – December 2017*, (March 26, 2018); and *Water Utility Equity Returns Trend Downward Driven by California Decisions*, (RRA Regulatory Focus), April 20, 2018.

	ROE	Equity Ratio
2011	10.04%	-
2012	9.90	-
2013	9.73	-
2014	9.59	49.69%
2015	9.76	50.41
2016	9.71	50.52
2017	9.56	47.34
2018 (1st qtr.)	9.23	54.17

I believe that the above table of ROE awards supports the reasonableness of my recommendation in this case. It is also notable that the New York Public Service Commission in 2017 approved a 9.0 percent ROE for SUEZ Water New York, SWRI's utility affiliate.

The above table shows that the average water utility ROE award in 2011 was 10.04 percent, but such awards have gradually declined since then, down to 9.23 percent by early 2018. Moreover, it appears that water utilities have thrived financially under these sub 10 percent ROE awards, more than satisfying investor requirements. As documented in Mr. Walker's testimony (see page 38), market/book ratios for the proxy group water utility companies currently average about 334 percent demonstrating that investors indeed find water utilities to be very attractive investments at commission-authorized ROEs in the mid 9s or lower. Mr. Walker's 10.5 percent ROE recommendation is out of step with this clear regulatory trend as well as market evidence.

B. <u>Capital Cost Trends</u>

Q. HAVE YOU EXAMINED GENERAL TRENDS IN CAPITAL COSTS IN RECENT YEARS?

A. Yes. I show the capital cost trends since 2001, through calendar year 2017, on page 1 of Schedule MIK-2. Pages 2, 3, 4, 5. 6 and 7 of that schedule show monthly data for January 2007 through April 2018. The indicators provided include the annualized inflation rate (as measured by the Consumer Price Index), ten-year Treasury note yields, 3-month Treasury bill yields and Moody's Single A yields on long-term utility bonds. While there is some fluctuation, these data series show a generally declining trend in capital costs. For example, in the early part of this ten-year period utility bond yields averaged about 7 to 8 percent, with 10-year Treasury yields of 4 to 5 percent. By 2016, Single A utility bond yields had fallen to an average of 3.9 percent, with ten-year Treasury yields declining to an average of 1.8 percent. During most of 2017, yields on long-term debt remained reasonably close to those historic lows.

As shown on Schedule MIK-2, for the time period 2009 through 2015, short-term Treasury rates have been close to zero, with three-month Treasury bills averaging about 0.1 percent. These extraordinarily low rates (which are also reflected in non-Treasury debt instruments) were the result of an intentional policy of the Federal Reserve Board of Governors ("the Fed") to make liquidity available to the U.S. economy and to promote economic activity. Note that by law, the Fed must implement a policy referred to as the "dual mandate", simultaneously promoting price stability and maximum employment for the U.S. economy.

The Fed has also sought to exert downward pressure on long-term interest rates through its policy of "quantitative easing," although that program effectively ended in 2015, with the Fed announcing the phasing out of that program in October 2014. This policy involved the purchase by the Fed of long-term financial assets in the form of Treasury bonds and federal agency long-term debt (i.e., mortgage bonds). This policy has resulted in an increase over a period of several years in the Fed's balance sheet from less than $1 trillion to over $4 trillion at the conclusion of that program and today. Quantitative easing was intended to support economic recovery by lowering the cost of capital and encouraging credit expansion.

Q. ARE THERE FORCES THAT HAVE CONTRIBUTED TO LOW INTEREST RATES OTHER THAN FED POLICY?

A. Yes. While the decline in short-term rates to near zero in recent years is largely attributable to Fed policy decisions, the behavior of long-term rates reflects more fundamental economic forces as well as Fed policy. Factors that drive down long-term bond interest rates include the past weakness of the U.S. and global macro economy, the inflation outlook and even international events. A weak or only moderately growing economy exerts downward pressure on interest rates and capital costs generally because the demand for capital is low and inflationary pressures are lacking. While inflation measures can fluctuate from month to month, long-term inflation rate expectations presently remain quite low. The Fed has employed a long-term inflation target of 2.0 percent, and inflation generally has been below or close to that target, as have the market's inflationary expectations.

Q. DO LOW LONG-TERM INTEREST RATES IMPLY A LOW COST OF EQUITY FOR UTILITIES?

A. In a very general sense and over time that is normally the case, although the utility cost of equity and cost of debt need not move together in lock step or necessarily in the short run. The economic forces mentioned above that lead to lower interest rates also tend to exert downward pressure on the utility cost of equity. After all, many investors tend to view utility stocks and bonds as alternative investment vehicles for portfolio allocation purposes, and in that sense utility stocks and long-term bonds are related by market forces.

Q. HAS THE FED PROVIDED MORE RECENT INFORMATION ON ITS

POLICY DIRECTION?

A. Yes, it has. Due to positive progress in strengthening labor markets (the U.S. unemployment rate has been gradually declining to 4.1 percent), improvements in economic growth in the near term, and inflation moving up modestly closer toward the 2 percent target, the Fed has moved away from near zero interest rates to a broad policy of monetary "normalization", beginning in late 2015 and continuing to the present day. This consists of a series of increases in short-term interest rates and the unwinding of quantitative easing (i.e., very gradually reducing the Fed's holdings of long-term Treasury and agency debt). This policy shift has been recently affirmed in the Fed's semi-annual February 2018 *Monetary Policy Report* to Congress and its press release following the March 23, 2018 meeting of the Federal Open Market Committee ("FOMC") at which it raised short-term interest rates to a range of 1.5-1.75 percent. Fed and FOMC statements make clear that despite the change to a policy of normalization, monetary policy remains "accommodative" with changes being gradual. This position and the level of short-term interest rates was reaffirmed at the FOMC's most recent meeting and policy statement of May 2, 2018.

As a result of Fed policy, as well as conditions in U.S. and global capital markets, in 2017 long-term interest rates remained extremely low (though slightly higher than the historic lows of 2016), and the stock market flourished. Utility stocks also performed well in most of 2017 despite the gradual firming of short-term and long-term interest rates in the last half of the year.

Q. HAS THE PATTERN BEEN SIMILAR FOR EQUITY MARKETS IN 2018?

A. While January 2018 was a strong month for the stock market (due to the corporate earnings benefit of the Tax Cut and Jobs Act enacted in December 2017 and a strengthening economy), the past few months as of this writing have seen extreme stock market volatility and further gradual increases in interest rates. Although short-term fluctuations in the stock market are always difficult to interpret, it may be due to a combination of risks of further interest rate increases, rising federal budget deficits (due to both the tax cut bill and Congressional budget decisions) and concerns over international trade policy changes.

Despite this capital market instability, the cost of capital remains quite low by historical standards. In particular, the yield on 30-year Treasury bonds (the benchmark used by both Mr. Walker and myself) in recent weeks has remained at 3.1 to 3.2 percent, which is only about 0.1 to 0.2 percent above the levels prevailing in the six months ending April 2018. (Please see page 2 of Schedule MIK-5 for the six month average.) The cost of long-term debt for single A rated utilities (such as SWR for secured debt) has also risen slightly but remains close to or slightly above 4.0 percent.

Q. HAVE YOU BEEN ABLE TO INCORPORATE THESE RECENT CHANGES IN FINANCIAL MARKETS INTO YOUR COST OF CAPITAL ANALYSIS IN THIS CASE?

A. Yes, to a large extent but not completely. Following my past practice, I have based my DCF analysis on market data from the six months ending April 2018. Thus, strictly speaking my analysis measures the utility cost of capital during that recent time period. Therefore, it does not measure the changes in the cost of capital since April 2018. As discussed above, markets have been extremely volatile since the beginning of 2018, and there is evidence of at least a modest increase in the cost of capital during 2018. However, for the water companies, this effect of overall market volatility and the upward drift in interest rates appears to be moderate. For example, my calculation of water utility dividend yields does not show a significant increase (meaning declining share prices) during the six months ending April 2018. I have taken these early 2018 capital cost trends into account by recommending an ROE award of 9.0 percent, a figure slightly above my DCF water utility midpoint result and close to the upper end of my CAPM results.

I consider the uncertainty and instability in capital markets since the beginning of this year to be an important issue at this time for rate of return determination purposes in this case. Consequently, I intend to revisit this issue at the time of my surrebuttal testimony later this Summer based on available evidence at that time.

C. <u>Overview of Testimony</u>

Q. HOW HAVE YOU ORGANIZED THE REMAINDER OF YOUR TESTIMONY?

A. Section III of my testimony presents my adjustments to the capital structure and cost of debt recommended in this case by the Company. Section IV presents my cost of equity studies which are based on the DCF method, with the application of the CAPM providing a comparison and corroboration. Finally, Section V is my review of Mr. Walker's cost of equity studies, risk adjustments and why his 10.5 percent ROE recommendation is unreasonable and unrealistic.

III. CAPITAL STRUCTURE AND OVERALL RISK

A. Capital Structure

Q. WHAT CAPITAL STRUCTURE IS THE COMPANY UTILIZING IN THIS CASE?

A. The requested capital structure in this case is based on parent company SUEZ Water Resouces, Inc. ("SWR") capitalization data at December 31, 2017. As noted earlier, this is a reasonable approach since SWRI issues no debt and relies upon its parent for all of its external capital. This was the same approach to capital structure as approved in the Company's last base rate cases in 2011 and 2014. The rationale for this approach is explained in Mr. Walker's testimony, and I find his explanation to be reasonable.

Q. DO YOU AGREE WITH THE PROPOSED CAPITAL STRUCTURE IN THIS CASE?

A. No, not entirely. SWR over time has utilized a significant amount of short-term debt to fund its operations, but SWRI omits that debt from its requested ratemaking capital structure. Division 5-8 asks for an explanation as to why short-term debt was omitted and Commission precedents supporting the omission. The response indicates that short-term debt is used for interim funding of capital projects and for working capital needs, and the response claims that it is eventually replaced by permanent debt or equity financing. No Commission precedents were cited in the data response to support the omission. In fact, Mr. Walker states that he specifically did not consider the Commission's past treatment of this issue.

Q. WHY DO YOU BELIEVE SHORT-TERM DEBT SHOULD BE INCLUDED IN CAPITAL STRUCTURE?

A. It is appropriate because it helps to finance the Company's operations, and it is the least expensive form of investor-supplied capital. Although short-term debt usage does over time fluctuate, it is clearly recurring and is a part of SWR's normal financing practices. I certainly expect that short-term debt will continue to be used on an ongoing basis after the conclusion of this rate case.

I also note that the omission of short-term debt is contrary to Commission precedent and normal practice, both for this Company and utilities in general. In the 2011 and 2014 rate cases, resolved by settlement, the Commission approved settlements that included short-term debt in capital structure based on a 12-month average of parent company actual balances – 4.0 percent and 0.6 percent of total capital in those two cases. No reason has been cited in testimony or data responses for departing from this past and long-standing practice.

Q. HOW HAVE YOU REFLECTED SHORT-TERM DEBT?

A. In recognition of the fact that short-term debt fluctuates over time, I have utilized a 12-month average for the period ending December 2017. (Response to Division 5-2) This averages $10.8 million, or 0.52 percent of capitalization. The cost rate on short-term debt is 2.65 percent, which is the latest cost rate provided by the Company in response to Division 5-2, as of February 2018.

Q. DO YOU HAVE ANY ADJUSTMENTS TO THE COMPANY'S PROPOSED EQUITY AND LONG-TERM DEBT BALANCES?

A. No, not at this time. Those balances are based on actual capitalization data at December 31, 2017, and I have no reason to believe that they are unrepresentative of SWR financing going forward. I note that the Company issued new long-term debt in January 2018 (to replace older, higher cost debt) and that new debt is included for capital structure and cost of debt purposes. In my opinion, this inclusion is appropriate.

Q. WITH YOUR ADJUSTMENT TO ADD 2017 SHORT-TERM DEBT, WHAT IS YOUR RECOMMENDED CAPITAL STRUCTURE?

A. As shown on page 1 of Schedule MIK-1, I am recommending a capital structure of 45.57 percent long-term debt, 0.52 percent short-term debt and 53.91 percent common equity. This capital structure is appropriate for ratemaking and is fair to the Company. As noted, it provides an increase in the equity ratio cushion as compared to the Commission-approved capital structure in the last case.

B. <u>Cost of Debt</u>

Q. HAVE YOU ACCEPTED THE COMPANY'S PROPOSED EMBEDDED COST OF DEBT?

A. Yes. The Company's response to Division 5-5 documents an embedded cost of long-term debt at December 2017 (adjusted to account for the new debt issuances in January 2018) of 4.65 percent. This is far lower than in the 2011 and 2014 rate cases reflecting the declining trend in the cost of capital discussed in the Section II of my testimony. I have reviewed this calculation and find it to be reasonable.

C. <u>SWRI's Business Risk</u>

Q. DOES MR. WALKER DISCUSS THE RISKS ASSOCIATED WITH SWRI'S REGULATED UTILITY OPERATIONS?

A. Yes. His testimony discusses generic water utility industry risk factors, most prominently the capital investments needed to comply with the Safe Drinking Water Act. More importantly, his testimony discusses risk factors specific to the Company as compared to his water utility industry group. His testimony discusses firm size and the Company's large capital spend requirements and depreciation rate as compared to the proxy water utility industry group. Based on this comparison, he concludes that SWRI is riskier than the group, meriting a risk adder of 0.25 percent to the authorized

ROE. In Section V of my testimony, I discuss why the argument concerning size as a risk disadvantage for SWRI is incorrect and should be disregarded.

Q. DOES MR. WALKER ASSERT THAT ANY SIGNIFICANT CHANGES HAVE OCCURRED IN SWRI'S RISK PROFILE SINCE ITS LAST RATE CASE?

A. No, there is no evidence presented that would indicate a material change in the Company's investment risk since its last rate case. In fact, there are two major changes that would argue against any finding of increased risk from the last case (or increased risk relative to the proxy utility industry group). First, both the Company and the Division support (in some form) the introduction of a DISC mechanism to support ongoing capital investment and timely cost recovery. Second, both Mr. Walker and I are supporting an increase in the equity ratio as compared to the last case, about 54 percent. Please note that I have shown in Section II of my testimony that water utility approved equity ratios for ratemaking are generally lower than this 54 percent – on average closer to 50 percent. I believe that these two changes from the last case would argue strongly against the inclusion of the 25 basis point risk adder proposed by Mr. Walker.

Q. IS SWRI AN INDEPENDENT WATER COMPANY?

A. No, it is not. SWRI is a wholly-owned subsidiary of SWR, a holding company that owns numerous water utility companies across the United States. The ultimate parent of both UWRI and UWW is the massive French company, Suez SA, which has extensive non utility operations. Due to these complex holding company arrangements, there is no market data available for SWRI. Instead, the Company receives equity infusions from time to time from its parent.

Q. IS SWRI RATED BY MAJOR CREDIT RATING AGENCIES?

A. No, but its parent, SWR, is rated and in response to Division 5-4 the Company supplied the most recent credit rating report from Standard & Poors ("S&P"). It is my understanding that SWR is also rated by Moody's, but no recent credit rating report from Moody's is available. SWR is rated by S&P as A- ("Stable"), based on the most recent report dated August 8, 2017. Please note that S&P generally considers water utilities to have low business risk, lumping together water utilities with gas distribution and electric distribution utility companies.

Q. WHAT IS THE CREDIT RATING AGENCY ASSESSMENT OF THE COMPANY'S BUSINESS RISK?

A. S&P in its most recent report has a generally favorable view of SWR rating its business risk profile as "Excellent". This Excellent rating is based on SWR's "lower-risk and rate regulated water distribution business"; the effective management of regulatory risk (e.g., the use of DISC type mechanisms); large customer base and geographic diversity. In my opinion SWRI contributes to this Excellent business risk profile.

Q. IS AN UPWARD RISK ADJUSTMENT TO THE ROE JUSTIFIED FOR SWRI, AS PROPOSED BY MR. WALKER?

A. No, it is not. His risk adjustment of 0.25 percent relative to the proxy group baseline cost of equity is not warranted. I explain this issue further in Section V of my testimony

IV. COST OF COMMON EQUITY

A. Using the DCF Model

Q. WHAT STANDARD ARE YOU USING TO DEVELOP YOUR RETURN ON EQUITY RECOMMENDATION?

A. As a general matter, the ratemaking process is designed to provide the utility an opportunity to recover its (prudently-incurred) costs of providing utility service to its customers, including the reasonable costs of financing its (used and useful) investment. Consistent with this "cost-based" approach, the fair and appropriate return on equity award for a utility is its cost of equity. The utility's cost of equity is the return required by investors (i.e., the "market return") to acquire or hold that company's common stock. A return award greater than the market return would be excessive and would overcharge customers for utility service. Similarly, an insufficient return could unduly weaken the utility and impair incentives to invest.

Although the *concept* of the cost of equity may be precisely stated, its quantification poses challenges to regulators. The market cost of equity, unlike most other utility costs, cannot be directly observed (i.e., investors do not directly, unambiguously state their return requirements), and it therefore must be estimated using analytic techniques. The DCF model is one such prominent technique familiar to analysts, this Commission and other utility regulators.

Q. IS THE COST OF EQUITY A FAIR RETURN AWARD FOR THE UTILITY AND ITS CUSTOMERS?

A. Generally speaking, I believe it is. A return award commensurate with the cost of equity generally provides fair and reasonable compensation to utility investors and normally should allow efficient utility management to successfully finance its operations on reasonable terms. Certainly, this has been the case for Rhode Island utilities based on the equity returns granted by the Commission in recent years. Setting the return on equity equal to a reasonable estimate of the cost of equity also is generally fair to ratepayers.

I recognize that there can be exceptions to this general rule. For example, in some instances, utilities have sought rate of return adders as a reward for asserted good management performance. In this case, it does not appear that the Company is making an explicit request for a performance adder, and therefore the issue is one of *measuring* the cost of equity, not whether a properly measured cost of equity is fair return.

Q. WHAT DETERMINES A COMPANY'S COST OF EQUITY?

A. It should be understood that the cost of equity is essentially a market price, and as such, it is ultimately determined by the forces of supply and demand operating in financial markets. In that regard, there are two key factors that determine this price. First, a company's cost of equity is determined by the fundamental conditions in capital markets (e.g., outlook for inflation, monetary policy, changes in investor behavior, investor asset preferences, the general business environment, etc.). The second factor (or set of factors) is the business and financial risks of the Company in question. For example, the fact that a utility company effectively operates as a regulated monopoly, dedicated to providing an essential service (in this case water utility service), typically would imply very low business risk and therefore a relatively low cost of equity. SWRI/SWR's relatively strong balance sheet and the favorable assessment by credit rating agencies (i.e., S&P) also contribute to its relatively low cost of equity.

Q. DOES MR. WALKER INCORPORATE THESE PRINCIPLES IN HIS TESTIMONY?

A. In general, I believe he attempts to incorporate these principles in conducting his DCF and to some extent his CAPM analyses. However, it is not clear that the Risk Premium study (which is based entirely on historical data) does so, and his reference to projected accounting earnings has nothing to do with the market cost of capital. The latter merely reflects one source's view of potential future accounting returns.

Q. WHAT METHODS ARE YOU USING IN THIS CASE?

A. I employ both the DCF and CAPM models, applied to a proxy group of water utility companies. However, for reasons discussed in my testimony, I emphasize the DCF model results in formulating my recommendation. It has been my experience that most utility regulatory commissions (federal and state), including Rhode Island, heavily emphasize the use of the DCF model to determine the cost of equity and setting the fair return. As a check (and partly to respond to Mr. Walker), I also perform a CAPM study which also is based on the proxy group companies used in my testimony.

Q. PLEASE DESCRIBE THE DCF MODEL.

A. As mentioned, this model has been widely relied upon by the regulatory community, including this Commission. Its widespread acceptance among regulators is due to the fact that the model is market-based and is derived from standard economic/financial theory. The model is also transparent and understandable to regulators. I do not believe that an obscure or highly arcane model would receive the same degree of regulatory acceptance.

The theory begins by recognizing that any publicly-traded common stock (utility or otherwise) will sell at a price reflecting the discounted stream of cash flows *expected by investors*. The objective is to estimate that discount rate.

Using certain simplifying assumptions (that I believe are generally reasonable for utilities), the DCF model for dividend paying stocks can be distilled down as follows:

K_e = (Do/Po) (1 + 0.5g) + g, where:

K_e = cost of equity;

Do = the current annualized dividend;

Po = stock price at the current time; and

g = the long-term annualized dividend growth rate.

This is referred to as the constant growth DCF model, because for mathematical simplicity it is assumed that the growth rate is constant for an indefinitely long time period. While this assumption may be unrealistic (or not fully realistic) in many cases, for traditional utilities (which tend to be more stable than most unregulated companies) the assumption generally is reasonable, particularly when applied to a group of companies.

Q. HOW HAVE YOU APPLIED THIS MODEL?

A. Strictly speaking, the model can be applied only to publicly-traded companies, i.e., companies whose market prices (and therefore market valuations) are transparently revealed. Consequently, the model cannot be applied to SWRI, which is a wholly-owned subsidiary of SWR parent (and indirectly by Suez Environnement SA), and therefore a market proxy is needed. In theory, Suez SA could serve as that market proxy, but given its extensive international and non-utility operations, that would not be reasonable. More importantly, I am reluctant to rely upon a single-company DCF study (nor does Mr. Walker), although in theory that approach could be used.

In any case, I believe that an appropriately selected proxy group (preferably one reasonable in size) is likely to be more reliable than a single company study.

This is because there is “noise” or fluctuations in stock price (or other) data that cannot always be readily accounted for in a simple DCF study. The use of an appropriate and robust proxy group helps to allow such “data anomalies” to cancel out in the averaging process.

For the same reason, I prefer to use market data that are relatively current but averaged over a period of several months (i.e., six months) rather than purely relying upon “spot” market data. It is important to recall that this is not an academic exercise but involves the setting of “permanent” utility rates that are likely to be in effect for several years. The practice of averaging market data over a period of several months can add stability to the results.

Q. ARE YOU EMPLOYING THE DCF MODEL USING A WATER UTILITY PROXY GROUP?

A. I am using a proxy group that consists of the eight companies included in the Value Line Water Industry Group. Mr. Walker uses an identical proxy group of water utility companies as listed on page 11 of his testimony. His criteria for selection include (1) coverage by multiple security analysts for five year projections of earnings; (2) inclusion in the water utility classification; (3) not the subject of an acquisition; (4) pay a current quarterly dividend with no dividend reduction within the last four years; and (5) market capitalization greater than $75 million. These criteria for selection are generally reasonable and would omit small water companies that may have publicly-traded stock. Since both Mr. Walker and I are using an identical proxy group of water utility companies, this eliminates sample selection as a potential issue in this case.

B. <u>DCF Study Using the Proxy Group Water Utility Companies</u>

Q. HOW DID YOU SELECT YOUR WATER PROXY GROUP IN THIS

CASE?

A. I am basing my first DCF study on the large group of publicly-traded companies classified by the *Value Line Investment Survey* as water utility companies. These eight proxy companies are listed on Schedule MIK-3, page 1 of 1, along with several risk indicators. Since this proxy group is identical to that selected by Mr. Walker, our DCF study results can be directly compared.

It should be noted that although the proxy water companies are primarily regulated utilities, some also have some non-regulated operations that may be perceived as riskier than utility operations (e.g., contract water services). I make no specific adjustment to the DCF cost of capital results or my final recommendation for those potentially riskier non-regulated operations. Overall, the non-utility operations for these companies are relatively minor.

There is one notable complication associated with this otherwise straightforward proxy group. Two of the proxy companies, Connecticut Water Service and SJW Group, have recently announced a planned merger with the announcement made public in mid-March 2018, subsequent to Mr. Walker's testimony. While this has been described as a "merger of equals", it appears that Connecticut Water is actually the company being acquired. One could argue that this should result in the removal of these two companies from the proxy group, but doing so would shrink the already relatively small group from eight to six companies. I have reviewed the market price data for the two companies, and it appears that this transaction – coming near the end of my six months of market data – has a negligible effect on the DCF results. The SJW dividend yield (i.e., share price) for March and April appears relatively unaffected, and the Connecticut Water dividend yield does go down in those two months. However, the overall effect on the proxy group six month average dividend yield is very minor, less than 0.1 percent. For that reason, I continue to include both companies in my cost of equity analyses. The reasonable alternative would be either to remove both companies from the proxy group or remove the March/April dividend yields. But doing so would not materially change the results.

Q. HAVE EITHER YOU OR MR. WALKER PROPOSED A SPECIFIC RISK ADJUSTMENT TO THE COST OF EQUITY BETWEEN THE PROXY COMPANIES AND SWRI?

A. Yes, Mr. Walker includes a significant 0.25 percent risk adjustment for size and other financial factors, such as capital spending. Mr. Walker does not have a clear explanation regarding how that risk adjustment was calculated although he seems to link it to credit ratings. SWRI, of course, is not rated, but its parent is Single A rated, so this adjustment seems inappropriate. Moreover, Mr. Walker seems to ignore the DISC proposal in this case which would further reduce SWRI's already low risk. I do not include an explicit risk adjustment, but my final recommendation of 9.0 percent does slightly exceed my water utility DCF and CAPM results.

Q. HOW HAVE YOU APPLIED THE DCF MODEL TO THIS GROUP?

A. I have elected to use a six-month time period to measure the dividend yield component (Do/Po) of the DCF formula. Using the share price data and quarterly dividend payments published by YahooFinance!, I calculated the month-ending dividend yields for each of the six months ending April 2018, the most recent data available to me as of this writing. The last half of this six month period reflects a time period of stock market volatility and an upward drift in interest rates, and those conditions are reflected in my DCF study.

I show these dividend yield data on page 2 of Schedule MIK-4 for each month and each proxy company, November 2017 through April 2018. Over this six-month period the proxy group average dividend yields were relatively stable, ranging from a low of 1.83 percent in November 2017 to 2.21 percent in February 2018, averaging 2.02 percent for the full six months. Please note that had I excluded Connecticut Water and SJW due to the merger the proxy group dividend yield would be slightly higher, 2.04 percent, which is a negligible difference. Alternatively, had I eliminated the March and April dividend yield figures for those two companies, my proxy group six month average would be 2.03 percent. This supports retaining the two companies in the proxy group despite the merger. I note that Mr. Walker for DCF purposes is using a very similar dividend yield of 2.1 percent based on 2017 market data.

For DCF purposes and at this time, I am using a proxy group dividend yield of 3.33 percent.

Q. IS 2.02 PERCENT YOUR FINAL DIVIDEND YIELD?

A. Not quite. Strictly speaking, the dividend yield used in the model should be the value the investor expects to receive over the next 12 months. Using the standard "half year" growth rate adjustment technique, the DCF adjusted yield becomes 2.1 percent. This is based on assuming that half of a year growth is 3.5 percent (i.e., a full year growth is 7.0 percent).

Q. DOES MR. WALKER EMPLOY THE SAME GROWTH RATE ADJUSTMENT?

A. I understand that Mr. Walker also employs this standard half year growth adjustment to the measured dividend yield. However, he does not employ six-month average of market data and instead uses the average for November 2017 (a single month) and the 12 months ending November 2017. Given the relative stability of market data for this group, his approach does not appear to produce a significantly different result than using my more recent six-month average.

Q. HOW HAVE YOU DEVELOPED YOUR GROWTH RATE COMPONENT?

A. Unlike the dividend yield, the investor growth rate cannot be directly observed but instead must be inferred through a review of available evidence. The growth rate in question is the *long-run* dividend per share growth rate, but analysts frequently use earnings growth as a proxy for (long-term) dividend growth. This is because in the long-run earnings are the ultimate source of dividend payments to shareholders, and this is likely to be particularly true for a large group of utility companies.

One possible approach is to examine historical growth as a guide to investor expected future growth, for example the recent five-year or ten-year growth in earnings, dividends and book value per share. However, my experience with utilities in recent years is that these historic measures have been very volatile and are not reliable as prospective measures. This is due in part to extensive corporate or financial restructuring, particularly in the electric industry. I note that Mr. Walker cites to historical data but prefers instead to use projections published by analysts as an indicator of long-term growth for water companies for DCF purposes. The DCF growth rate should be prospective, and one useful source of information on prospective growth is the projections of earnings per share (typically five years) prepared by securities analysts. It appears that Mr. Walker places exclusive weight on this information for his water group, and I agree that it warrants substantial emphasis.

Q. PLEASE DESCRIBE THE ANALYST EARNINGS GROWTH RATE EVIDENCE.

A. Schedule MIK-4, page 3 presents five available and well-known public sources of projected earnings growth rates. Four of these five sources – YahooFinance!, Zacks, Reuters and CNNfn -- provide averages from securities analyst surveys conducted by or for these organizations (typically they report the mean or median value). The fifth, Value Line, is that organization's own estimates and is available publicly on a subscription basis. Value Line publishes its own projections using annual average earnings per share for a base period of 2015-2017 compared to the annual average for the forecast period of 2021-2023.

As this schedule shows, the growth rates for individual companies vary somewhat among the five sources. These proxy group averages are 6.5 percent for CNNfn, 6.8 percent for YahooFinance!, 6.12 percent for Zacks, 7.2 percent for Reuters and 7.5 percent for Value Line. Thus, the range of growth rates among the five sources is 6.5 to 7.5 percent. The average of these five sources is 6.9 percent, and I have used these results (along with other evidence) in obtaining a reasonable range of 6.5 to 7.0 percent.

Q. IS THERE ANY OTHER EVIDENCE THAT SHOULD BE CONSIDERED?

A. Yes. There are a number of reasons why investor expectations of long-run growth could differ from the limited, five-year earnings projections prepared by securities analysts. Consequently, while securities analyst estimates should be considered and given significant weight, these growth rates should be subject to a reasonableness test and corroboration, to the extent feasible.

On Schedule MIK-4, page 4 of 4, I have compiled three other measures of growth published by Value Line, i.e., growth rates of dividends and book value per share and long-run retained earnings growth. (Retained earnings growth reflects the growth over time one would expect from the reinvestment of retained earnings, i.e., earnings not paid out as dividends.) As shown on this schedule, these growth measures for the five large companies tend to be similar to or less than analyst growth projections. Dividend growth averages 7.5 percent, book value growth averages 4.3 percent, and earnings retention growth averages 5.6 percent.

This Commission in the past has favored the use of earnings retention growth (often referred to as “sustainable growth”), which Value Line indicates to be 5.6 percent. However, at least in theory, the sustainable growth rate also should include “an adder” to reflect potential future earnings growth from issuing new common stock at prices above book value (referred to as “external growth” or the “s x v” factor). In practice, this is difficult to estimate since future stock issuances of companies over the long-term are an unknown. Nonetheless, I have estimated this “external growth” factor using Value Line projections for these eight companies of the growth rate (through 2021-2023) in shares outstanding, along with the current stock price premium over book value. This is a common method for calculating the external growth factor. For these eight companies, external growth calculated in this manner averages about 1.2 percent. The sum of “internal” or earnings retention growth (i.e., 5.6 percent) and “external” growth (i.e., 1.2 percent) is 6.8 percent.

Give this estimate of 6.8 percent for the sustainable growth rate and 6.9 percent for analyst earnings projections, a reasonable growth rate range is 6.5 to 7.0 percent to appropriately reflect uncertainty.

Q. WHAT IS YOUR DCF CONCLUSION?

A. I summarize my DCF analysis on page 1 of Schedule MIK-4. The adjusted dividend yield for the six months ending April 2017 is 2.1 percent for this group. Available evidence would support a long-run growth rate in the range of approximately 6.5 to 7.0 percent, as explained above. Summing the adjusted yield and growth rate range produces a total return of 8.6 to 9.1 percent, and a midpoint result of 8.85 percent. In this instance, both reliance on security analyst growth rates and the Value Line based earnings retention growth rate analysis seem to produce relatively consistent growth rate estimates going forward for the water utility proxy group.

Q. DO YOU INCLUDE AN ADJUSTMENT FOR FLOTATION EXPENSE?

A. A company can incur flotation expenses when engaging in a public issuance of common stock to support its growth in investment. It might choose to do so and incur this cost if retained earnings growth (and other capital sources such as dividend reinvestment programs) are insufficient to provide the needed equity capitalization. A public issuance typically involves significant underwriting fees and other administrative expenses, which the utility may seek to recover as a cost of equity adder.

In this case, Mr. Walker has provided no data on flotation expense (or public stock issuances) and does not propose such an adjustment. Moreover, although SWRI receives equity injections on occasion, it is not clear that Suez S.A., the ultimate parent, incurs or has incurred such costs on behalf of SWRI. In this case, flotation expense does not appear to be an issue.

Q. HOW DOES YOUR 8.6 TO 9.1 PERCENT DCF RANGE COMPARE TO MR. WALKER'S DCF ESTIMATE FOR WATER UTILITIES?

A. If one excludes an extraneous "leverage adder" that Mr. Walker includes in his DCF, our results are fairly similar. (I discuss why this adder is inappropriate in Section V of my testimony.) Absent this adder and his 0.25 percent risk adder, his DCF estimate is 9.4 percent. However, as I explain later, even his 9.4 percent result is overstated. As noted earlier, he relies entirely on securities analyst projections and disregards evidence on earnings retention growth.

C. The CAPM Analysis

Q. PLEASE DESCRIBE THE CAPM MODEL.

A. The CAPM is a form of the "risk premium" approach and is based on modern portfolio theory. Based on my experience, the CAPM is the cost of equity method most often used in rate cases after the DCF method, and it is one of Mr. Walker's three basic cost of equity methods. (His utility accounting earnings calculations do not provide a market-based cost of equity estimate.)

According to this model, the cost of equity (K_e) is equal to the yield on a risk-free asset plus an equity risk premium multiplied by a firm's "beta" statistic. "Beta" is a firm-specific risk measure which is computed as the movements in a company's stock price (or market return) relative to contemporaneous movements in the broadly defined stock market (e.g., the S&P 500 or the New York Stock Exchange Composite). This measures the investment risk that cannot be reduced or eliminated through asset diversification (i.e., holding a broad portfolio of assets). The overall market, by definition, has a beta of 1.0, and a company with lower than average investment risk (e.g., a utility company) would have a beta below 1.0. The "risk premium" is defined as the expected return on the overall stock market minus the yield or return on a risk-free asset.

The CAPM formula is:

K_e = $R_f + \beta (R_m - R_f)$, where:

K_e = the firm's cost of equity

R_m = the expected return on the overall market

R_f = the yield on the risk free asset

β = the firm (or group of firms) risk measure.

Two of the three principal variables in the model are directly observable – the yield on a risk-free asset (e.g., a Treasury security yield) and the beta. For example, Value Line publishes estimated betas for each of the companies that it covers, and Mr. Walker uses those betas to the exclusion of all other sources. The greatest difficulty, however, is in the measurement of the expected stock market return (and therefore the equity risk premium), since that variable cannot be directly observed.

While the beta itself also is "observable," different investor services provide differing calculations of betas depending on the specific procedures and methods that they use. These differences can have large impacts on the CAPM results. In this case, both Mr. Walker and I use Value Line published betas, but I note that other sources have somewhat different betas, which would yield lower results.

Q. HOW HAVE YOU APPLIED THIS MODEL?

A. For purposes of my CAPM analysis, I have used a long-term (i.e., 30-year) Treasury yield as the risk-free-return along with the average beta for the water utility proxy group. (See Schedule MIK-3, page 1 of 1, for the company-by-company betas.) In the last six months, long-term (30-year) Treasury yields have averaged approximately 3.0 percent but with an upward trend, and the recent Value Line betas for my water proxy group averages 0.73. Given the interest rate trend, I have elected to use a Treasury long-term rate of 3.1 percent. I note that Mr. Walker has elected to use betas for his water utility group that average a slightly higher value of 0.74 and a Treasury rate of 3.1 percent. Finally, and as explained below, I am using an equity risk premium range of 5 to 8 percent, although I see less support for the upper end of that range.

Using these data inputs, the CAPM calculation results are shown on page 1 of Schedule MIK-6. My low-end cost of equity estimate uses a risk-free rate of 3.1 percent,[2] a proxy group beta of 0.73 and an equity risk premium of 5 percent.

$K_e = 3.1\% + 0.73\ (5.0\%) = 6.8\%$

The upper end estimate uses a risk-free rate of 3.1 percent, a proxy group beta of 0.73 and an equity risk premium of 8.0 percent.

$K_e = 3.1\% + 0.73\ (8.0\%) = 8.9\%$

Thus, with these inputs the CAPM provides a cost of equity range of 6.8 to 8.9 percent, with a midpoint of 7.9 percent. The CAPM analysis produces a midpoint result somewhat lower than the range of results from my water group DCF analysis, but I have not placed reliance on the CAPM returns in formulating my return on equity recommendation in this case. This is due to the inherent difficulties associated with identifying a reliable estimate of the stock market risk premium as well as controversies regarding the model itself. In my opinion, the DCF is far more reliable for estimating the utility cost of equity. Moreover, this Commission has not placed much reliance on the CAPM in past cases.

Q. WHAT RESULT WOULD YOU OBTAIN USING MR. WALKER'S MARKET RISK PREMIUM?

A. For his CAPM studies, Mr. Walker has selected a market risk premium range of 6.2 to 6.9 percent. Using the higher 6.9 percent in conjunction with his utility beta of 0.74 (based on Value Line data for the water utility group as of the time of his testimony) and a 3.1 percent Treasury bond yield, the CAPM produces:

$K_e = 3.1\% + 0.74\ (6.9\%) = 8.2\%$

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[2] As of this writing, long-term Treasury yields are approximately 3.2 percent, and Mr. Walker uses 3.1 percent, based on interest rate forecasts as of the time of his testimony.

Q. IT APPEARS THAT A KEY ELEMENT IN YOUR CAPM STUDY IS YOUR EQUITY MARKET RETURN RISK PREMIUM OF 5 TO 8 PERCENT. HOW DID YOU DERIVE THAT RANGE?

A. There is a great deal of disagreement among analysts regarding the reasonably expected market return on the stock market as a whole and therefore the risk premium. In my opinion, a reasonable risk premium to use would be about 6.5 percent, which today would imply a stock market return of 9.6 percent (i.e., 6.5 + 3.1 = 9.6 percent). Due to uncertainty concerning the true market return value, I am employing a broad range of 5 to 8 percent as the overall market rate of return, which would imply a market equity return of roughly 8 to 11 percent for the expected rate of return on the overall stock market.

Q. DO YOU HAVE A SOURCE FOR THAT RANGE?

A. Yes. The well-known finance textbook by Brealey, Myers and Allen (*Principles of Corporate Finance*) reviews a broad range of evidence on the equity risk premium. The authors of the risk premium literature conclude:

> Brealey, Myers and Allen have no official position on the issue, but we believe that a range of 5 to 8 percent is reasonable for the risk premium in the United States. (page 154)

I would note that Mr. Walker's 6.2 to 6.9 percent falls comfortably within that range. My "midpoint" risk premium of roughly 6.5 percent is also within both the Brealy et. al. range and Mr. Walker's range.

There is one important caveat to consider here regarding the 5 to 8 percent range that the authors believe is supported by the literature. It appears that the 5 to 8 percent range is specified relative to short-term Treasury yields, not relative to long-term (i.e., 30-year) Treasury yields. At this time, the application of the CAPM using short-term Treasury yields would not be meaningful because those yields in 2018 remain quite low and are largely controlled by the evolving Federal Reserve policy of "normalization". It therefore could be argued that the 5 to 8 percent range of Brealy *et al*. is overstated if a long-term Treasury yield is used as the risk-free rate, i.e., the practice followed by both Mr. Walker and me.

V. MR. WALKER'S COST OF EQUITY METHODS

A. Overview of Methods and Recommendation

Q. HOW DOES MR. WALKER DEVELOP HIS COST OF EQUITY RANGE?

A. Mr. Walker employs four methods, with three being methods that produce market-based cost of equity estimates (i.e., DCF, CAPM, and Risk Premium) and one that is not market-based (i.e., review of Value Line accounting ROE projections). The latter is sometimes referred to as Comparable Earnings, and it is not a recognized cost of equity method but rather a method that simply documents accounting return measures. For that reason, it does not fit with cost-based ratemaking and is irrelevant to the capital attraction standard.

Mr. Walker presents on Table 9, page 54 of his testimony a concise summary of the results that he obtains from his various studies applied to his water company proxy group or other sources. I reproduce this summary in the table below for ease of reference.

Summary of Mr. Walker's ROE Results

		Water Companies
(1)	DCF Studies	10.1%
(2)	Risk Premium	10.7%
(3)	CAPM Studies	9.8%
(4)	**Average**	**10.2%**
(5)	Risk Adjustment	+0.25%
(6)	VL Projected ROEs	10.5 – 14%
(7)	**Recommendation**	**10.5%**

Source: Table 9, page 54.

Q. DO THE RESULTS IN THIS TABLE SUPPORT MR. WALKER'S RECOMMENDATION OF 10.5 PERCENT?

A. I do not believe that they do. First, it is clear that this Commission has a preference for the DCF methodology as the basis for ROE awards. His DCF finding (before his risk and leverage adjustments) is 9.4 percent, which is well below his 10.5 percent recommendation and is actually reasonably close to my 9.0 percent ROE recommendation. Similarly, his CAPM study (absent his extraneous adjustments or adders) fails to support his recommendation. Had he applied that model in the conventional manner, it would produce a cost of equity estimate of about 8 percent. But in the end, he includes three adders in his cost of equity results: (a) the generic 0.25 percent for asserted risk differences between the SWRI and the proxy group; (b) a leverage adjustment of 0.7 percent; and (c) 1.1 percent for a "size" risk adjustment between the overall stock market and his proxy water utilities. In short, Mr. Walker depends heavily on adders, which have little or no regulatory or analytical support, to obtain results in excess of 9.0 percent.

The remainder of my testimony discusses why these adders are should be rejected.

Q. ARE YOU CONTESTING HIS DCF RESULTS EXCLUDING THE ADDERS?

A. Yes, to a limited degree. Absent the extraneous adders, his DCF study produces a cost of equity estimate of 9.4 percent, which is only modestly above my estimated DCF range. Nonetheless, I do not believe that his asserted DCF growth factor (which is 7.2 percent) is appropriately supported. According to his testimony, his DCF growth factor is based on five year earnings per share projections prepared by security analysts and published by such sources as Zacks, First Call, Value Line and Reuters – essentially the same sources as I used. According to data provided on his Schedule 13, these four sources average to about 6.5 percent. But he averages in with this a figure of 8.6 percent which he claims is the analyst projections for some unspecified water industry group. But the companies comprising this asserted industry group are never identified and must be different in some unknown way from his own water utility proxy group. It clearly is inappropriate to factor in the 8.6 percent growth rate when he does not even know the companies that comprise the group resulting in this projection. The 8.6 percent figure clearly is overstated and has nothing to do with his own DCF analysis. Instead, he should have relied upon the 6.5 percent growth rate from the four authoritative sources and that specifically applicable to his own selected proxy group. Otherwise, what is the purpose of even having such a proxy group? With this obvious correction his 9.4 percent DCF estimate falls to 8.6 percent, or the lower end of my range.

The larger concern is that Mr. Walker factors in a "leverage" adjustment of 0.7 percent, an adjustment that violates standard financial theory and has received almost no regulatory acceptance. (Note that in response to Division 5- 18 Mr. Walker asserts that this adjustment has been accepted in a few cases before the Pennsylvania Public Utilities Commission approximately 15 to 20 years ago. He cites to no other regulatory acceptance, and based on my experience, I know of none.)

The proposed leverage adjustment has nothing to do with the actual cost of equity of either SWRI or even the water utility proxy group itself, and has no place as part of the DCF model. Rather, it is a convoluted way of providing utility investors additional income that is not required for capital attraction and unrelated to the cost of capital. To be clear, a properly performed DCF study using realistic, reasonable data inputs (market data and projected growth rate) will provide an accurate estimate of the proxy group cost of common equity. Textbook financial theory is very clear on this point. Mr. Walker apparently introduces this upward adjustment to the standard

DCF results in order to recognize that utility stocks are selling at a large premium to book value. In other words, the market equity ratio is much higher than the book value ratio. Of course, book values are what are used for cost-based ratemaking, and investors are completely aware of this. No artificial adder is needed to provide investors with additional return compensation for the fact that utility share market prices exceed book value.

I urge the Commission to reject this improper adder to the DCF results as it only serves to overstate the market-derived cost of equity. It has received almost no regulatory recognition.

B. <u>Mr. Walker's CAPM Study</u>

Q. HOW DID MR. WALKER OBTAIN HIS CAPM RESULTS?

A. His analysis first applies the standard CAPM formula, using the following data input parameters:

(1) Risk free rate (long-term Treasury yield): 3.1%

(2) Risk premium: 6.2 – 6.9%

(3) Beta: 0.74

These parameters would produce the following results:

K_e (water) = 3.1% + 0.74 (6.2 to 6.9%) = 7.7 to 8.2%

If Mr. Walker had gone no further, then his CAPM results would be generally consistent with mine and fully supportive of my 9.0 percent ROE recommendation. However, he decides to introduce two "adder" adjustments. The first such adder is his 0.7 percent leverage adjustment discussed above. As this has no place in the DCF study, it similarly has no place in the CAPM study as well.

Mr. Walker goes further and introduces a second adder into his CAPM. This adder is an adjustment of 1.1 percent to reflect the "size" difference between his proxy water utility companies and the average common stock (e.g., the average company in the S&P 500 or some other broad stock market group). He asserts that the need for this very large adjustment is based on the notion that the water utility beta (the risk measure in the CAPM) does not capture the risk associated with firm size. However, his testimony simply provides no support for that assertion. Moreover, his 1.1 percent "size" adjustment leads to the conclusion that the overall investment risk for water utilities is quite similar to the overall stock market (which itself is mostly unregulated companies operating in competitive markets). This is both implausible and unreasonable. Water utilities have a much lower cost of equity than the average S&P 500 unregulated firm for the obvious reason that as regulated monopolies they are insulated from competitive forces and have very low risk.

Mr. Walker's "size" adjustment is not needed, is incorrect, and only serves to distort his application of the CAPM. Also, to my knowledge, this adjustment has received little or no regulatory support.

I urge the Commission when considering the CAPM evidence to disregard both the leverage and size adders included by Mr. Walker which add a total of 1.8 percentage points to the standard CAPM results. When doing so it becomes clear that a proper, standard application of the CAPM supports a ROE of 9.0 percent or even less.

C. <u>Problems with Mr. Walker's Risk Premium Method</u>

Q. HOW DID MR. WALKER DERIVE HIS RISK PREMIUM-DERIVED ROE?

A. This study is also quite complex as it considers a number of risk premium measures developed by Mr. Walker, all of which are based on historical market returns data. He begins by observing that a reasonable estimate of the going forward return on

Single A rated utility debt is 4.3 percent. After considering an array of historical risk premium measures, he ultimately selects 5.7 percent as the assumed equity risk premium for figure for purposes of his study at this time. The sum of a 4.3 percent utility bond yield (or return) and the 5.7 percent risk premium is 10.0 percent. The 10.0 percent figure is not his final result, however.

He then proceeds to increase that for his two risk adders – the 0.7 percent leverage adder (for the difference between market and book capital structure) and 0.25 percent for SWRI's allegedly higher risk relative to the proxy water utility companies. This produces a final Risk Premium cost of equity of 10.95 percent (10.0% + 0.7% + 0.25%). As I have mentioned before, the leverage adjustment makes no sense because book value capital structure is always used for cost-based ratemaking in Rhode Island and before all regulatory commissions, and that additional shareholder compensation is simply not needed. The 0.25 percent SWRI specific risk factor is also inappropriate because SWRI is simply not riskier than the proxy companies. Moreover, Mr. Walker seems to forget that the proxy water utility companies are not even used in his risk premium study. Rather, the risk premium study is based on historical returns data from the S&P Utilities group.

Q. IS MR. WALKER'S 4.3 PERCENT COST RATE FOR SINGLE A UTILITY BONDS REASONABLE?

A. It is not an unreasonable estimate, although I note that in January 2018 SWR was able to issue new long-term debt at interest rates much lower than that, about 3.3 to 3.8 percent.

The larger problem is that his 5.7 percent risk premium figure is both arbitrary and too high. This is simply a figure of Mr. Walker's choosing, and there is no persuasive reason for the Commission to accept that figure. In fact, at page 50 of his testimony, Mr. Walker observes that the long-term (1928-2016) historical risk premium for utilities (adjusted to single A rated utilities) ranges from 4.3 to 5.0 percent, averaging about 4.6 percent. He rejects this representative historical average and instead selects the much higher figure of 5.7 percent. However, had he used the more objective 4.6 percent, his risk premium-derived cost of equity (absent his inappropriate risk adders) would be 8.9 percent (i.e., 4.3% + 4.6%) – consistent with my recommendation for SWRI.

While I believe the Risk Premium evidence is not particularly useful for the Commission in determining a realistic cost of equity, I believe that if anything it is supportive of my recommendation of 9.0 percent and not Mr. Walker's excessive 10.5 percent recommendation.

D. <u>The Value Line Accounting ROEs</u>

Q. IS A REVIEW OF THE WATER UTILITY ROES PROJECTED BY VALUE LINE A USEFUL METHOD FOR ESTIMATING A COMPANY'S MARKET COST OF EQUITY?

A. Mr. Walker is accurate in observing that Value Line projects that the earned return on common equity for the eight proxy water utility companies will increase to 10.5 to 14.0 percent over the next five years. However, this simply has nothing to do with the market cost of equity that the Commission uses to set the authorized ROE. This method compiles accounting data on the returns on equity projected by one publication to be earned. These accounting ROEs (even if they do reflect investor expectations) tell us nothing about the market returns that investors today actually require. In part, this is because market prices for water utility stocks are greatly in excess of book value per share. This implies that an investor purchasing those shares today (at the premium to book value) would expect to earn far less than the accounting ROE range of 10.5 to 14 percent.

I further note that Mr. Walker never claims that these projected accounting ROEs are the basis of his recommendation or tells us anything about the cost of equity. He merely references them as a check. The Commission should disregard these projections as being in any way useful to either cost of equity estimation or determining the fair ROE for SWRI.

E. <u>The Risk Adjustment</u>

Q. WHAT IS MR. WALKER'S RISK ADJUSTMENT FOR SWRI?

A. He adds 0.25 percent to the water utility proxy group baseline cost of equity results to compensate for SWRI's relatively small size, capital spend plan and other factors. This obviously has a material effect on his ROE recommendation, with size clearly being a major factor. The basis of his adjustment is that SWRI is (allegedly) smaller than the proxy water companies (on average) and that small size adds to investment risk and therefore the cost of equity.

Q. IS THERE PERSUASIVE EVIDENCE OF SIZE AS A RISK FACTOR?

A. It is possible that size (and geographic diversification which is related to size) could be a material business risk factor, but only one of many. It is not clear why size should be the *only* business risk factor considered in this case for setting UWRI's cost of equity. Unfortunately, the evidence that Mr. Walker presents concerning the size/risk relationship is not very persuasive because it is based primarily on historic market returns for unregulated companies. There are reasons why size may matter for unregulated companies but have little or no importance for regulated utilities. For example, for non-regulated companies size may simply be a proxy for "maturity" or lack growth. That is, rapidly growing or start-up companies tend to be relatively risky *and* relatively small. Larger companies, by comparison, in general are also stable companies merely due to their age. While this is interesting (and possibly spurious), it may have little to do with utilities.

Q. ARE THERE ANY OTHER CONSIDERATIONS?

A. Yes. For risk evaluation purposes, SWRI should not be viewed as a "small company" because it is a segment of SWR., a vastly larger water utility company operating in numerous states. For example, SWR instead could organize itself as being a single company in which case it would be larger, not smaller than the average of the proxy companies. For example, as I show on my Schedule MIK-1, SWR has a book capitalization of over $2 billion which means that it is hardly a small company. Mr. Walker shows on his Schedule 4, page 1 of 2, that the average size of his water utility proxy group is a book capitalization of about $2.5 billion – comparable to that of SWR. The salient point is that SWRI is an integral part of SWR and contributes both to its size and to its geographic (and regulatory) diversification. For that reason, a ROE risk adjustment for SWRI's asserted small size would be incorrect as it ignores the Company's status as a component of the much larger SWR. This corporate organization arrangement eliminates this asserted risk.

I note that Mr. Walker also mentions other factors in his 0.25 percent risk adjustment such as the burden (relative to the proxy water utility companies) of the Company's large construction plan. However, ongoing cost recovery for such investments can be addressed going forward through the DISC mechanism proposed in this case by the Division. Hence, in this case the risk adder proposed by Mr. Walker cannot be justified or supported.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

BEFORE THE

PUBLIC UTILITIES COMMISSION

OF RHODE ISLAND

UNITED WATER RHODE ISLAND, INC.) DOCKET NO. 4800

SCHEDULES ACCOMPANYING THE

DIRECT TESTIMONY

OF

MATTHEW I. KAHAL

ON BEHALF OF THE

DIVISION OF PUBLIC UTILITIES AND CARRIERS

JUNE 8, 2018

SUEZ WATER RHODE ISLAND, INC.

Pro Forma Rate of Return Summary at
December 31, 2017

Capital Type	Balance[1] (Thousands $)	% of Total	Cost Rate	Weighted Cost
Long-Term Debt	$943,646	45.57%	4.65%[3]	2.12%
Short-Term Debt[2]	10,847	0.52	2.65	0.01
Common Equity	1,116,396	53.91	9.00	4.85
Total	$2,070,889	100.00%	--	6.98%

[1] Source: Response to Division 5-5 and Schedule 2.8(c).

[2] Based on the 12-month average for 2017 calculated from the response to Division 5-2. Cost rate is as of February 2018.

[3] Source: Response to Division 5-5.

SUEZ WATER RHODE ISLAND, INC.

Trends in Capital Costs

	Annualized Inflation (CPI)	10-Year Treasury Yield	3-Month Treasury Yield	Single A Utility Yield
2001	2.9%	5.0%	3.5%	7.8%
2002	1.6	4.6	1.6	7.4
2003	1.9	4.1	1.0	6.6
2004	2.7	4.3	1.4	6.2
2005	3.4	4.3	3.0	5.6
2006	2.5	4.8	4.8	6.1
2007	2.8	4.6	4.5	6.3
2008	3.8	3.4	1.6	6.5
2009	(0.4)	3.2	0.2	6.0
2010	1.6	3.2	0.1	5.5
2011	3.1	2.8	0.0	5.1
2012	2.1	1.8	0.1	4.1
2013	1.5	2.3	0.1	4.5
2014	1.7	2.5	0.0	4.3
2015	0.1	2.2	0.0	4.1
2016	1.3	1.8	0.0	3.9
2017	2.1	2.3	1.0	4.0

SUEZ WATER RHODE ISLAND, INC.

U.S. Historic Trends in Capital Costs
(Continued)

	Annualized Inflation (CPI)	10-Year Treasury	3-Month Treasury	Single A Utility Yield
2007				
January	2.1%	4.8%	5.1%	6.0%
February	2.4	4.7	5.2	5.9
March	2.8	4.6	5.1	5.9
April	2.6	4.7	5.0	6.0
May	2.7	4.8	5.0	6.0
June	2.7	5.1	5.0	6.3
July	2.4	5.0	5.0	6.3
August	2.0	4.7	4.3	6.2
September	2.8	4.5	4.0	6.2
October	3.5	4.5	4.0	6.1
November	4.3	4.2	3.4	6.0
December	4.1	4.1	3.1	6.2
2008				
January	4.3%	3.7%	2.8%	6.0%
February	4.0	3.7	2.2	6.2
March	4.0	3.5	1.3	6.2
April	3.9	3.7	1.3	6.3
May	4.2	3.9	1.8	6.3
June	5.0	4.1	1.9	6.4
July	5.6	4.0	1.7	6.4
August	5.4	3.9	1.8	6.4
September	4.9	3.7	1.2	6.5
October	3.7	3.8	0.7	7.6
November	1.1	3.5	0.2	7.6
December	0.1	2.4	0.0	6.5

SUEZ WATER RHODE ISLAND, INC.

U.S. Historic Trends in Capital Costs
(Continued)

	Annualized Inflation (CPI)	10-Year *Treasury*	3-Month *Treasury*	Single A *Utility Yield*
2009				
January	0.0%	2.5%	0.1%	6.4%
February	0.2	2.9	0.3	6.3
March	(0.4)	2.8	0.2	6.4
April	(0.7)	2.9	0.2	6.5
May	(1.3)	2.9	0.2	6.5
June	(1.4)	3.7	0.2	6.2
July	(2.1)	3.6	0.2	6.0
August	(1.5)	3.6	0.2	5.7
September	(1.3)	3.4	0.1	5.5
October	(0.2)	3.4	0.1	5.6
November	1.8	3.4	0.1	5.6
December	2.5	3.6	0.1	5.8
2010				
January	2.6%	3.7%	0.1%	5.8%
February	2.1	3.7	0.1	5.9
March	2.3	3.7	0.2	5.8
April	2.2	3.9	0.2	5.8
May	2.0	3.4	0.2	5.5
June	1.1	3.2	0.1	5.5
July	1.2	3.0	0.2	5.3
August	1.1	2.7	0.2	5.0
September	1.1	2.7	0.2	5.0
October	1.2	2.5	0.1	5.1
November	1.1	2.8	0.1	5.4
December	1.2	3.3	0.1	5.6

SUEZ WATER RHODE ISLAND, INC.

U.S. Historic Trends in Capital Costs
(Continued)

	Annualized Inflation (CPI)	10-Year Treasury Yield	3-Month Treasury Yield	Single A Utility Yield
2011				
January	1.6%	3.4%	0.1%	5.6%
February	2.1	3.6	0.1	5.7
March	2.7	3.4	0.1	5.6
April	2.2	3.5	0.1	5.6
May	3.6	3.2	0.0	5.3
June	3.6	3.0	0.0	5.3
July	3.6	3.0	0.0	5.3
August	3.8	2.3	0.0	4.7
September	3.9	2.0	0.0	4.5
October	3.5	2.2	0.0	4.5
November	3.0	2.0	0.0	4.3
December	3.0	2.0	0.0	4.3
2012				
January	2.9%	2.0%	0.0%	4.3%
February	2.9	2.0	0.0	4.4
March	2.7	2.2	0.1	4.5
April	2.3	2.1	0.1	4.4
May	1.7	1.8	0.1	4.2
June	1.7	1.6	0.1	4.1
July	1.4	1.5	0.1	3.9
August	1.7	1.7	0.1	4.0
September	2.0	1.7	0.1	4.0
October	2.2	1.8	0.1	3.9
November	1.8	1.7	0.1	3.8
December	1.7	1.7	0.1	4.0

SUEZ WATER RHODE ISLAND, INC.

U.S. Historic Trends in Capital Costs
(Continued)

	Annualized Inflation (CPI)	10-Year Treasury Yield	3-Month Treasury Yield	Single A Utility Yield
2013				
January	1.6%	1.9%	0.1%	4.2%
February	2.0	2.0	0.1	4.2
March	1.5	2.0	0.1	4.2
April	1.1	1.8	0.1	4.0
May	1.4	1.9	0.0	4.2
June	1.8	2.3	0.1	4.5
July	2.0	2.6	0.0	4.7
August	1.5	2.7	0.0	4.7
September	1.2	2.8	0.0	4.8
October	1.0	2.6	0.1	4.7
November	1.2	2.7	0.1	4.8
December	1.5	2.9	0.1	4.8
2014				
January	1.6%	2.9%	0.0%	4.6%
February	1.1	2.7	0.1	4.5
March	1.5	2.7	0.1	4.5
April	2.0	2.7	0.0	4.4
May	2.1	2.6	0.0	4.3
June	2.1	2.6	0.1	4.3
July	2.0	2.5	0.0	4.2
August	1.7	2.4	0.0	4.1
September	1.7	2.5	0.0	4.2
October	1.7	2.3	0.0	4.1
November	1.3	2.3	0.0	4.1
December	0.8	2.2	0.0	4.0

SUEZ WATER RHODE ISLAND, INC.

U.S. Historic Trends in Capital Costs
(Continued)

	Annualized Inflation (CPI)	10-Year Treasury	3-Month Treasury	Single A Utility Yield
2015				
January	(0.1)%	1.9%	0.0%	3.6%
February	0.0	2.0	0.0	3.7
March	(0.1)	2.0	0.0	3.7
April	(0.2)	1.9	0.0	3.8
May	0.0	2.2	0.0	4.2
June	0.1	2.4	0.0	4.4
July	0.2	2.3	0.0	4.4
August	0.2	2.2	0.1	4.3
September	0.0	2.3	0.0	4.4
October	0.2	2.1	0.0	4.3
November	0.5	2.3	0.1	4.4
December	0.7	2.2	0.2	4.4
2016				
January	1.4%	2.1%	0.3%	4.3%
February	1.0	1.8	0.3	4.1
March	0.9	1.9	0.3	4.2
April	1.1	1.8	0.2	4.2
May	1.0	1.8	0.3	4.2
June	1.0	1.6	0.3	4.1
July	0.8	1.5	0.3	3.6
August	1.1	1.6	0.3	3.6
September	1.5	1.6	0.3	3.7
October	1.6	1.8	0.3	3.8
November	1.7	2.1	0.5	4.1
December	2.1	2.5	0.5	4.3

SUEZ WATER RHODE ISLAND, INC.

U.S. Historic Trends in Capital Costs
(Continued)

	Annualized Inflation (CPI)	10-Year Treasury Yield	3-Month Treasury	Single A Utility Yield
2017				
January	2.5%	2.4%	0.5%	4.1%
February	2.7	2.4	0.5	4.2
March	2.4	2.5	0.8	4.2
April	2.2	2.3	0.8	4.1
May	1.9	2.3	0.9	4.1
June	1.6	2.2	1.0	3.9
July	1.7	2.3	1.1	4.0
August	1.9	2.2	1.0	3.9
September	2.2	2.2	1.1	3.9
October	2.0	2.4	1.1	3.9
November	2.2	2.4	1.3	3.8
December	2.1	2.4	1.3	3.8
2018				
January	2.1	2.6	1.4	3.9
February	2.2	2.9	1.6	4.1
March	2.4	2.8	1.7	4.2
April	2.5	2.9	1.8	4.2

Source: *Economic Report of the President, Mergent's Bond Record, Federal Reserve Statistical Release* (H.15), *Consumer Price Index Summary* (BLS).

SUEZ WATER RHODE ISLAND, INC.

List of the Water Utility Proxy Companies

	Company	Safety Rating	Financial Strength	Beta	2017 Common Equity Ratio[1]
1.	American States Water	2	A	0.75	62.3%
2.	Aqua American	2	A	0.70	49.4
3.	American Water Works	3	B+	0.65	45.3
4.	California Water	3	B++	0.75	57.3
5.	Connecticut Water	3	B+	0.65	53.7
6.	Middlesex Water	2	B++	0.80	61.8
7.	SJW Group	3	B+	0.70	51.8
8.	York Water	3	B+	0.80	57.0
	Average	**2.6**	**--**	**0.73**	**54.8%**

[1] The common equity ratio excludes short-term debt (and current maturities of long-term debt). Actual 2017 equity ratio including short-term debt and current maturities averages 52.4 percent.

Source: *Value Line Investment Survey,* April 13, 2018.

SUEZ WATER RHODE ISLAND, INC.

DCF Summary for
Water Utility Proxy Group

1.	Dividend Yield (November 2017 – April 2018)	2.02%[1]
2.	Adjusted Yield ((1) x 1.035)	2.1%
3.	Long-Term Growth Rate	6.5 – 7.0%[2]
4.	Total Return ((2) + (3))	8.6 – 9.1%
5.	Flotation Adjustment	0.0%
6.	Total Cost Rate (with flotation ((4) + (5))	8.6 – 9.1%
7.	Cost of Equity Midpoint	8.9%
8.	**Recommendation**	**9.0%**

[1] Schedule MIK-4, page 2 of 5.

[2] Schedule MIK-4, pages 3 and 5 of 5.

SUEZ WATER RHODE ISLAND, INC.

Dividend Yields for the Water Utility Group
(November 2017 – April 2018)

	Company	November	December	January	February	March	April	Average
1.	American States	1.8%	1.8%	1.8%	1.9%	1.9%	1.8%	1.84%
2.	Aqua American	2.2	2.1	2.3	2.4	2.4	2.3	2.27
3.	American Water	1.8	1.8	2.0	2.1	2.0	1.9	1.94
4.	California Water	1.6	1.7	1.8	2.0	2.0	1.9	1.84
5.	Connecticut Water	1.9	2.1	2.2	2.3	2.0	1.8	2.04
6.	Middlesex Water	1.9	2.2	2.4	2.5	2.4	2.2	2.28
7.	SJW Group	1.6	1.8	1.9	2.1	2.1	1.9	1.89
8.	York Water	1.8	2.0	2.1	2.4	2.1	2.1	2.08
	Average	**1.86%**	**1.92%**	**2.07%**	**2.21%**	**2.13%**	**1.98%**	**2.02%**

Source: YahooFinance website, April 30, 2018.

SUEZ WATER RHODE ISLAND, INC.

Projection of Earnings Per Share
Five-Year Growth Rates for the
Water Company Proxy Group

	Company	Value Line	Yahoo	Zacks	Reuters	CNN	Average
1.	American States	6.5%	4.00%	7.47%	4.00%	5.00%	4.11%
2.	American Water	8.5	8.20	5.00	7.60	8.08	7.53
3.	Aqua American	7.0	5.00	6.00	7.00	6.00	6.19
4.	California Water	9.5	9.80	6.00	N/A	6.00	7.63
5.	Connecticut Water	5.5	6.00	N/A	N/A	6.00	4.90
6.	Middlesex Water	8.0	2.70	N/A	N/A	5.00	3.73
7.	SJW Group	6.0	14.00	N/A	N/A	10.00	8.50
8.	York Water	9.0	4.90	N/A	N/A	6.00	5.63
	Average	**7.50%**	**6.83%**	**6.12%**	**7.17%**	**6.51%**	**6.90%**

Source: *Value Line Investment Survey*, April 13, 2018. YahooFinance.com, Zacks.com, Reuters.com, CNNfn.com, public websites, April, 2018.

SUEZ WATER RHODE ISLAND, INC.

Other *Value Line* Growth Measures
For the Water Utility Proxy Group

	Company	Dividend per Share	Book Value per Share	Earnings Retention
1.	American States	7.5%	4.0%	6.0%
2.	American Water	10.0	5.0	4.5
3.	Aqua American	9.0	6.5	4.5
4.	California Water	6.5	3.0	5.5
5.	Connecticut	5.5	4.5	5.0
6.	Middlesex Water	5.0	4.0	6.0
7.	SJW Group	8.5	3.0	8.0
8.	York Water	8.0	4.5	5.0
	Average	**7.50**%	**4.31%**	**5.56**%

Source: *Value Line Investment Survey*, April 13, 2018. The earnings retention figures are for the time period 2021 – 2023.

SUEZ WATER RHODE ISLAND, INC.

Fundamental Growth Rate Analysis for the
Water Utility Proxy Group

		Shares 2017-2022[2]	%Premium[2]	sv[3]	br[4]	sv + br
1.	American States	0.4%	242.2%	1.1%	6.0%	7.1%
2.	American Water	1.0	155.6	1.5	4.5	6.0
3.	Aqua American	0.3	205.7	0.5	4.5	5.0
4.	California Water	0.8	147.5	1.2	5.5	6.7
5.	Connecticut Water	0.7	147.8	1.0	5.0	6.0
6.	Middlesex Water	0.8	146.1	1.1	6.0	7.1
7.	SJW Group	2.3	124.5	2.9	8.0	10.9
8.	York Water	NEG	N/A	0.0	5.0	5.0
	Average			**1.2%**	**5.6%**	**6.8%**

[1] Projected growth rate in shares outstanding, 2017-2022.

[2] % Premium of share price ("Recent Price") over 2018 book value per share.

[3] *sv* is growth rate in shares x % premium. Note: negative numbers treated as zero.

[4] *br* is Value Line projection as of 2021-2023.

Source: *Value Line Investment Survey*, April 13, 2018.

SUEZ WATER RHODE ISLAND, INC.

Capital Asset Pricing Model Study
Illustrative Calculations

A. Model Specification

$K_e = R_F + \beta\ (R_m - R_F)$, where

K_e = cost of equity

R_F = return on risk free asset

Rm = expected stock market return

B. Data Inputs

R_F = 3.1% (Treasury bond yield for the most recent six months, see page 2 of 2 of this Schedule)

Rm = 8.1 – 11.1% (equates to equity risk premium of 5.0 - 8.0%)

Beta = 0.73 (See Schedule MIK-3, page 1 of 1)

C. Model Calculations

Low End:	K_e = 3.1% + 0.73 (5.0) = 6.8%
Midpoint:	K_e = 3.1% + 0.73 (6.5) = 7.8%
Upper End:	K_e = 3.1% + 0.73 (8.0) = 8.9%

SUEZ WATER RHODE ISLAND, INC.

Long-Term Treasury Yields
(November 2017 – April 2018)

Month	30-Year	20-Year	10-Year
November 2017	2.80%	2.60%	2.36%
December	2.77	2.60	2.35
January 2018	2.88	2.73	2.40
February	3.13	3.02	2.58
March	3.09	2.96	2.89
April	3.07	2.97	2.87
Average	**2.96%**	**2.81%**	**2.58%**

Source: Federal Reserve website, selected interest rates Data Download, May 2018.

ATTACHMENT A

QUALIFICATIONS OF

MATTHEW I. KAHAL

MATTHEW I. KAHAL

Since 2001, Mr. Kahal has worked as an independent consulting economist, specializing in energy economics, public utility regulation, and utility financial studies. Over the past three decades, his work has encompassed electric utility integrated resource planning (IRP), power plant licensing, environmental compliance, and utility financial issues. In the financial area, he has conducted numerous cost of capital studies and addressed other financial issues for electric, gas, telephone, and water utilities. Mr. Kahal's work in recent years has expanded to electric power markets, mergers, and various aspects of regulation.

Mr. Kahal has provided expert testimony in more than 400 cases before state and federal regulatory commissions, federal courts, and the U.S. Congress. His testimony has covered need for power, integrated resource planning, cost of capital, purchased power practices and contracts, merger economics, industry restructuring, and various other regulatory and public policy issues.

Education

B.A. (Economics) – University of Maryland, 1971

M.A. (Economics) – University of Maryland, 1974

Ph.D. candidacy – University of Maryland, completed all course work and qualifying examinations.

Previous Employment

1981-2001 Founding Principal, Vice President, and President
Exeter Associates, Inc.
Columbia, MD

1980-1981 Member of the Economic Evaluation Directorate
The Aerospace Corporation
Washington, D.C.

1977-1980 Consulting Economist
Washington, D.C. consulting firm

1972-1977 Research/Teaching Assistant and Instructor (part time)
Department of Economics, University of Maryland (College Park)
Lecturer in Business and Economics
Montgomery College (Rockville and Takoma Park, MD)

Professional Experience

Mr. Kahal has more than thirty-five years' experience managing and conducting consulting assignments relating to public utility economics and regulation. In 1981, he and five colleagues founded the firm of Exeter Associates, Inc., and for the next 20 years he served as a Principal and corporate officer of the firm. During that time, he supervised multi-million dollar support contracts with the State of Maryland and directed the technical work conducted by both Exeter professional staff and numerous subcontractors. Additionally, Mr. Kahal took the lead role at Exeter in consulting to the firm's other governmental and private clients in the areas of financial analysis, utility mergers, electric restructuring, and utility purchase power contracts.

At the Aerospace Corporation, Mr. Kahal served as an economic consultant to the Strategic Petroleum Reserve (SPR). In that capacity, he participated in a detailed financial assessment of the SPR, and developed an econometric forecasting model of U.S. petroleum industry inventories. That study has been used to determine the extent to which private sector petroleum stocks can be expected to protect the U.S. from the impacts of oil import interruptions.

Before entering consulting, Mr. Kahal held faculty positions with the Department of Economics at the University of Maryland and with Montgomery College, teaching courses on economic principles, business, and economic development.

Publications and Consulting Reports

Projected Electric Power Demands of the Baltimore Gas and Electric Company, Maryland Power Plant Siting Program, 1979.

Projected Electric Power Demands of the Allegheny Power System, Maryland Power Plant Siting Program, January 1980.

An Econometric Forecast of Electric Energy and Peak Demand on the Delmarva Peninsula, Maryland Power Plant Siting Program, March 1980 (with Ralph E. Miller).

A Benefit/Cost Methodology of the Marginal Cost Pricing of Tennessee Valley Authority Electricity, prepared for the Board of Directors of the Tennessee Valley Authority, April 1980.

An Evaluation of the Delmarva Power and Light Company Generating Capacity Profile and Expansion Plan, (Interim Report), prepared for the Delaware Office of the Public Advocate, July 1980 (with Sharon L. Mason).

Rhode Island-DOE Electric Utilities Demonstration Project, Third Interim Report on Preliminary Analysis of the Experimental Results, prepared for the Economic Regulatory Administration, U.S. Department of Energy, July 1980.

Petroleum Inventories and the Strategic Petroleum Reserve, The Aerospace Corporation, prepared for the Strategic Petroleum Reserve Office, U.S. Department of Energy, December 1980.

Alternatives to Central Station Coal and Nuclear Power Generation, prepared for Argonne National Laboratory and the Office of Utility Systems, U.S. Department of Energy, August 1981.

"An Econometric Methodology for Forecasting Power Demands," Conducting Need-for-Power Review for Nuclear Power Plants (D.A. Nash, ed.), U.S. Nuclear Regulatory Commission, NUREG-0942, December 1982.

State Regulatory Attitudes Toward Fuel Expense Issues, prepared for the Electric Power Research Institute, July 1983 (with Dale E. Swan).

"Problems in the Use of Econometric Methods in Load Forecasting," Adjusting to Regulatory, Pricing and Marketing Realities (Harry Trebing, ed.), Institute of Public Utilities, Michigan State University, 1983.

Proceedings of the Maryland Conference on Electric Load Forecasting (editor and contributing author), Maryland Power Plant Siting Program, PPES-83-4, October 1983.

"The Impacts of Utility-Sponsored Weatherization Programs: The Case of Maryland Utilities" (with others), in Government and Energy Policy (Richard L. Itteilag, ed.), 1983.

Power Plant Cumulative Environmental Impact Report, contributing author (Paul E. Miller, ed.) Maryland Department of Natural Resources, January 1984.

Projected Electric Power Demands for the Potomac Electric Power Company, three volumes (with Steven L. Estomin), prepared for the Maryland Power Plant Siting Program, March 1984.

"An Assessment of the State-of-the-Art of Gas Utility Load Forecasting" (with Thomas Bacon, Jr. and Steven L. Estomin), published in the Proceedings of the Fourth NARUC Biennial Regulatory Information Conference, 1984.

"Nuclear Power and Investor Perceptions of Risk" (with Ralph E. Miller), published in The Energy Industries in Transition: 1985-2000 (John P. Weyant and Dorothy Sheffield, eds.), 1984.

The Financial Impact of Potential Department of Energy Rate Recommendations on the Commonwealth Edison Company, prepared for the U.S. Department of Energy, October 1984.

"Discussion Comments," published in Impact of Deregulation and Market Forces on Public Utilities: The Future of Regulation (Harry Trebing, ed.), Institute of Public Utilities, Michigan State University, 1985.

An Econometric Forecast of the Electric Power Loads of Baltimore Gas and Electric Company, two volumes (with others), prepared for the Maryland Power Plant Siting Program, 1985.

A Survey and Evaluation of Demand Forecast Methods in the Gas Utility Industry, prepared for the Public Utilities Commission of Ohio, Forecasting Division, November 1985 (with Terence Manuel).

A Review and Evaluation of the Load Forecasts of Houston Lighting & Power Company and Central Power & Light Company – Past and Present, prepared for the Texas Public Utility Commission, December 1985 (with Marvin H. Kahn).

Power Plant Cumulative Environmental Impact Report for Maryland, principal author of three of the eight chapters in the report (Paul E. Miller, ed.), PPSP-CEIR-5, March 1986.

"Potential Emissions Reduction from Conservation, Load Management, and Alternative Power," published in Acid Deposition in Maryland: A Report to the Governor and General Assembly, Maryland Power Plant Research Program, AD-87-1, January 1987.

Determination of Retrofit Costs at the Oyster Creek Nuclear Generating Station, March 1988, prepared for Versar, Inc., New Jersey Department of Environmental Protection.

Excess Deferred Taxes and the Telephone Utility Industry, April 1988, prepared on behalf of the National Association of State Utility Consumer Advocates.

Toward a Proposed Federal Policy for Independent Power Producers, comments prepared on behalf of the Indiana Consumer Counselor, FERC Docket EL87-67-000, November 1987.

Review and Discussion of Regulations Governing Bidding Programs, prepared for the Pennsylvania Office of Consumer Advocate, June 1988.

A Review of the Proposed Revisions to the FERC Administrative Rules on Avoided Costs and Related Issues, prepared for the Pennsylvania Office of Consumer Advocate, April 1988.

Review and Comments on the FERC NOPR Concerning Independent Power Producers, prepared for the Pennsylvania Office of Consumer Advocate, June 1988.

The Costs to Maryland Utilities and Ratepayers of an Acid Rain Control Strategy – An Updated Analysis, prepared for the Maryland Power Plant Research Program, October 1987, AD-88-4.

"Comments," in New Regulatory and Management Strategies in a Changing Market Environment (Harry M. Trebing and Patrick C. Mann, editors), Proceedings of the Institute of Public Utilities Eighteenth Annual Conference, 1987.

Electric Power Resource Planning for the Potomac Electric Power Company, prepared for the Maryland Power Plant Research Program, July 1988.

Power Plant Cumulative Environmental Impact Report for Maryland (Thomas E. Magette, ed.), authored two chapters, November 1988, PPRP-CEIR-6.

Resource Planning and Competitive Bidding for Delmarva Power & Light Company, October 1990, prepared for the Maryland Department of Natural Resources (with M. Fullenbaum).

Electric Power Rate Increases and the Cleveland Area Economy, prepared for the Northeast Ohio Areawide Coordinating Agency, October 1988.

An Economic and Need for Power Evaluation of Baltimore Gas & Electric Company's Perryman Plant, May 1991, prepared for the Maryland Department of Natural Resources (with M. Fullenbaum).

The Cost of Equity Capital for the Bell Local Exchange Companies in a New Era of Regulation, October 1991, presented at the Atlantic Economic Society 32nd Conference, Washington, D.C.

A Need for Power Review of Delmarva Power & Light Company's Dorchester Unit 1 Power Plant, March 1993, prepared for the Maryland Department of National Resources (with M. Fullenbaum).

The AES Warrior Run Project: Impact on Western Maryland Economic Activity and Electric Rates, February 1993, prepared for the Maryland Power Plant Research Program (with Peter Hall).

An Economic Perspective on Competition and the Electric Utility Industry, November 1994, prepared for the Electric Consumers' Alliance.

PEPCO's Clean Air Act Compliance Plan: Status Report, prepared for the Maryland Power Plant Research Plan, January 1995 (w/Diane Mountain, Environmental Resources Management, Inc.).

The FERC Open Access Rulemaking: A Review of the Issues, prepared for the Indiana Office of Utility Consumer Counselor and the Pennsylvania Office of Consumer Advocate, June 1995.

A Status Report on Electric Utility Restructuring: Issues for Maryland, prepared for the Maryland Power Plant Research Program, November 1995 (with Daphne Psacharopoulos).

Modeling the Financial Impacts on the Bell Regional Holding Companies from Changes in Access Rates, prepared for MCI Corporation, May 1996.

The CSEF Electric Deregulation Study: Economic Miracle or the Economists' Cold Fusion?, prepared for the Electric Consumers' Alliance, Indianapolis, Indiana, October 1996.

Reducing Rates for Interstate Access Service: Financial Impacts on the Bell Regional Holding Companies, prepared for MCI Corporation, May 1997.

The New Hampshire Retail Competition Pilot Program: A Preliminary Evaluation, July 1997, prepared for the Electric Consumers' Alliance (with Jerome D. Mierzwa).

Electric Restructuring and the Environment: Issue Identification for Maryland, March 1997, prepared for the Maryland Power Plant Research Program (with Environmental Resource Management, Inc.).

An Analysis of Electric Utility Embedded Power Supply Costs, prepared for Power-Gen International Conference, Dallas, Texas, December 1997.

Market Power Outlook for Generation Supply in Louisiana, December 2000, prepared for the Louisiana Public Service Commission (with others).

A Review of Issues Concerning Electric Power Capacity Markets, prepared for the Maryland Power Plant Research Program, December 2001 (with B. Hobbs and J. Inon).
The Economic Feasibility of Air Emissions Controls at the Brandon Shores and Morgantown Coal-fired Power Plants, February 2005 (prepared for the Chesapeake Bay Foundation).

The Economic Feasibility of Power Plant Retirements on the Entergy System, September 2005, with Phil Hayet (prepared for the Louisiana Public Service Commission).

Expert Report on Capital Structure, Equity and Debt Costs, prepared for the Edmonton Regional Water Customers Group, August 30, 2006.

Maryland's Options to Reduce and Stabilize Electric Power Prices Following Restructuring, with Steven L. Estomin, prepared for the Power Plant Research Program, Maryland Department of Natural Resources, September 2006.

Expert Report of Matthew I. Kahal, on behalf of the U. S. Department of Justice, August 2008, Civil Action No. IP-99-1693C-MIS.

Conference and Workshop Presentations

Workshop on State Load Forecasting Programs, sponsored by the Nuclear Regulatory Commission and Oak Ridge National Laboratory, February 1982 (presentation on forecasting methodology).

Fourteenth Annual Conference of the Michigan State University Institute for Public Utilities, December 1982 (presentation on problems in forecasting).

Conference on Conservation and Load Management, sponsored by the Massachusetts Energy Facilities Siting Council, May 1983 (presentation on cost-benefit criteria).

Maryland Conference on Load Forecasting, sponsored by the Maryland Power Plant Siting Program and the Maryland Public Service Commission, June 1983 (presentation on overforecasting power demands).

The 5th Annual Meetings of the International Association of Energy Economists, June 1983 (presentation on evaluating weatherization programs).

The NARUC Advanced Regulatory Studies Program (presented lectures on capacity planning for electric utilities), February 1984.

The 16th Annual Conference of the Institute of Public Utilities, Michigan State University (discussant on phase-in and excess capacity), December 1984.

U.S. Department of Energy Utilities Conference, Las Vegas, Nevada (presentation of current and future regulatory issues), May 1985.

The 18th Annual Conference of the Institute of Public Utilities, Michigan State University, Williamsburg, Virginia, December 1986 (discussant on cogeneration).

The NRECA Conference on Load Forecasting, sponsored by the National Rural Electric Cooperative Association, New Orleans, Louisiana, December 1987 (presentation on load forecast accuracy).

The Second Rutgers/New Jersey Department of Commerce Annual Conference on Energy Policy in the Middle Atlantic States, Rutgers University, April 1988 (presentation on spot pricing of electricity).

The NASUCA 1988 Mid-Year Meeting, Annapolis, Maryland, June 1988, sponsored by the National Association of State Utility Consumer Advocates (presentation on the FERC electricity avoided cost NOPRs).

The Thirty-Second Atlantic Economic Society Conference, Washington, D.C., October 1991 (presentation of a paper on cost of capital issues for the Bell Operating Companies).

The NASUCA 1993 Mid-Year Meeting, St. Louis, Missouri, sponsored by the National Association of State Utility Consumer Advocates, June 1993 (presentation on regulatory issues concerning electric utility mergers).

The NASUCA and NARUC annual meetings in New York City, November 1993 (presentations and panel discussions on the emerging FERC policies on transmission pricing).

The NASUCA annual meetings in Reno, Nevada, November 1994 (presentation concerning the FERC NOPR on stranded cost recovery).

U.S. Department of Energy Utilities/Energy Management Workshop, March 1995 (presentation concerning electric utility competition).

The 1995 NASUCA Mid-Year Meeting, Breckenridge, Colorado, June 1995 (presentation concerning the FERC rulemaking on electric transmission open access).

The 1996 NASUCA Mid-Year Meeting, Chicago, Illinois, June 1996 (presentation concerning electric utility merger issues).

Conference on "Restructuring the Electric Industry," sponsored by the National Consumers League and Electric Consumers Alliance, Washington, D.C., May 1997 (presentation on retail access pilot programs).

The 1997 Mid-Atlantic Conference of Regulatory Utilities Commissioners (MARUC), Hot Springs, Virginia, July 1997 (presentation concerning electric deregulation issues).

Power-Gen '97 International Conference, Dallas, Texas, December 1997 (presentation concerning utility embedded costs of generation supply).

Consumer Summit on Electric Competition, sponsored by the National Consumers League and Electric Consumers' Alliance, Washington, D.C., March 2001 (presentation concerning generation supply and reliability).

National Association of State Utility Consumer Advocates, Mid-Year Meetings, Austin, Texas, June 16-17, 2002 (presenter and panelist on RTO/Standard Market Design issues).

Louisiana State Bar Association, Public Utility Section, Baton Rouge, Louisiana, October 2, 2002 (presentation on Performance-Based Ratemaking and panelist on RTO issues).

Virginia State Corporation Commission/Virginia State Bar, Twenty-Second National Regulatory Conference, Williamsburg, Virginia, May 10, 2004 (presentation on Electric Transmission System Planning).

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of Matthew I. Kahal

	Docket Number	Utility	Jurisdiction	Client	Subject
1.	27374 & 27375 October 1978	Long Island Lighting Company	New York Counties	Nassau & Suffolk	Economic Impacts of Proposed Rate Increase
2.	6807 January 1978	Generic	Maryland	MD Power Plant Siting Program	Load Forecasting
3.	78-676-EL-AIR February 1978	Ohio Power Company	Ohio	Ohio Consumers' Counsel	Test Year Sales and Revenues
4.	17667 May 1979	Alabama Power Company	Alabama	Attorney General	Test Year Sales, Revenues, Costs, and Load Forecasts
5.	None April 1980	Tennessee Valley Authority	TVA Board	League of Women Voters	Time-of-Use Pricing
6.	R-80021082	West Penn Power Company	Pennsylvania	Office of Consumer Advocate	Load Forecasting, Marginal Cost pricing
7.	7259 (Phase I) October 1980	Potomac Edison Company	Maryland	MD Power Plant Siting Program	Load Forecasting
8.	7222 December 1980	Delmarva Power & Light Company	Maryland	MD Power Plant Siting Program	Need for Plant, Load Forecasting
9.	7441 June 1981	Potomac Electric Power Company	Maryland	Commission Staff	PURPA Standards
10.	7159 May 1980	Baltimore Gas & Electric	Maryland	Commission Staff	Time-of-Use Pricing
11.	81-044-E-42T	Monongahela Power	West Virginia	Commission Staff	Time-of-Use Rates
12.	7259 (Phase II) November 1981	Potomac Edison Company	Maryland	MD Power Plant Siting Program	Load Forecasting, Load Management
13.	1606 September 1981	Blackstone Valley Electric and Narragansett	Rhode Island	Division of Public Utilities	PURPA Standards
14.	RID 1819 April 1982	Pennsylvania Bell	Pennsylvania	Office of Consumer Advocate	Rate of Return
15.	82-0152 July 1982	Illinois Power Company	Illinois	U.S. Department of Defense	Rate of Return, CWIP

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16.	7559 September 1982	Potomac Edison Company	Maryland	Commission Staff	Cogeneration
17.	820150-EU September 1982	Gulf Power Company	Florida	Federal Executive Agencies	Rate of Return, CWIP
18.	82-057-15 January 1983	Mountain Fuel Supply Company	Utah	Federal Executive Agencies	Rate of Return, Capital Structure
19.	5200 August 1983	Texas Electric Service Company	Texas	Federal Executive Agencies	Cost of Equity
20.	28069 August 1983	Oklahoma Natural Gas	Oklahoma	Federal Executive Agencies	Rate of Return, deferred taxes, capital structure, attrition
21.	83-0537 February 1984	Commonwealth Edison Company	Illinois	U.S. Department of Energy	Rate of Return, capital structure, financial capability
22.	84-035-01 June 1984	Utah Power & Light Company	Utah	Federal Executive Agencies	Rate of Return
23.	U-1009-137 July 1984	Utah Power & Light Company	Idaho	U.S. Department of Energy	Rate of Return, financial condition
24.	R-842590 August 1984	Philadelphia Electric Company	Pennsylvania	Office of Consumer Advocate	Rate of Return
25.	840086-EI August 1984	Gulf Power Company	Florida	Federal Executive Agencies	Rate of Return, CWIP
26.	84-122-E August 1984	Carolina Power & Light Company	South Carolina	South Carolina Consumer Advocate	Rate of Return, CWIP, load forecasting
27.	CGC-83-G & CGC-84-G October 1984	Columbia Gas of Ohio	Ohio	Ohio Division of Energy	Load forecasting
28.	R-842621 October 1984	Western Pennsylvania Water Company	Pennsylvania	Office of Consumer Advocate	Test year sales
29.	R-842710 January 1985	ALLTEL Pennsylvania Inc.	Pennsylvania	Office of Consumer Advocate	Rate of Return
30.	ER-504 February 1985	Allegheny Generating Company	FERC	Office of Consumer Advocate	Rate of Return

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	Docket Number	Utility	Jurisdiction	Client	Subject
31.	R-842632 March 1985	West Penn Power Company	Pennsylvania	Office of Consumer Advocate	Rate of Return, conservation, time-of-use rates
32.	83-0537 & 84-0555 April 1985	Commonwealth Edison Company	Illinois	U.S. Department of Energy	Rate of Return, incentive rates, rate base
33.	Rulemaking Docket No. 11, May 1985	Generic	Delaware	Delaware Commission Staff	Interest rates on refunds
34.	29450 July 1985	Oklahoma Gas & Electric Company	Oklahoma	Oklahoma Attorney General	Rate of Return, CWIP in rate base
35.	1811 August 1985	Bristol County Water Company	Rhode Island	Division of Public Utilities	Rate of Return, capital Structure
36.	R-850044 & R-850045 August 1985	Quaker State & Continental Telephone Companies	Pennsylvania	Office of Consumer Advocate	Rate of Return
37.	R-850174 November 1985	Philadelphia Suburban Water Company	Pennsylvania	Office of Consumer Advocate	Rate of Return, financial conditions
38.	U-1006-265 March 1986	Idaho Power Company	Idaho	U.S. Department of Energy	Power supply costs and models
39.	EL-86-37 & EL-86-38 September 1986	Allegheny Generating Company	FERC	PA Office of Consumer Advocate	Rate of Return
40.	R-850287 June 1986	National Fuel Gas Distribution Corp.	Pennsylvania	Office of Consumer Advocate	Rate of Return
41.	1849 August 1986	Blackstone Valley Electric	Rhode Island	Division of Public Utilities	Rate of Return, financial condition
42.	86-297-GA-AIR November 1986	East Ohio Gas Company	Ohio	Ohio Consumers' Counsel	Rate of Return
43.	U-16945 December 1986	Louisiana Power & Light Company	Louisiana	Public Service Commission	Rate of Return, rate phase-in plan
44.	Case No. 7972 February 1987	Potomac Electric Power Company	Maryland	Commission Staff	Generation capacity planning, purchased power contract
45.	EL-86-58 & EL-86-59 March 1987	System Energy Resources and Middle South Services	FERC	Louisiana PSC	Rate of Return

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	Docket Number	Utility	Jurisdiction	Client	Subject
46.	ER-87-72-001 April 1987	Orange & Rockland	FERC	PA Office of Consumer Advocate	Rate of Return
47.	U-16945 April 1987	Louisiana Power & Light Company	Louisiana	Commission Staff	Revenue requirement update phase-in plan
48.	P-870196 May 1987	Pennsylvania Electric Company	Pennsylvania	Office of Consumer Advocate	Cogeneration contract
49.	86-2025-EL-AIR June 1987	Cleveland Electric Illuminating Company	Ohio	Ohio Consumers' Counsel	Rate of Return
50.	86-2026-EL-AIR June 1987	Toledo Edison Company	Ohio	Ohio Consumers' Counsel	Rate of Return
51.	87-4 June 1987	Delmarva Power & Light Company	Delaware	Commission Staff	Cogeneration/small power
52.	1872 July 1987	Newport Electric Company	Rhode Island	Commission Staff	Rate of Return
53.	WO 8606654 July 1987	Atlantic City Sewerage Company	New Jersey	Resorts International	Financial condition
54.	7510 August 1987	West Texas Utilities Company	Texas	Federal Executive Agencies	Rate of Return, phase-in
55.	8063 Phase I October 1987	Potomac Electric Power Company	Maryland	Power Plant Research Program	Economics of power plant site selection
56.	00439 November 1987	Oklahoma Gas & Electric Company	Oklahoma	Smith Cogeneration	Cogeneration economics
57.	RP-87-103 February 1988	Panhandle Eastern Pipe Line Company	FERC	Indiana Utility Consumer Counselor	Rate of Return
58.	EC-88-2-000 February 1988	Utah Power & Light Co. PacifiCorp	FERC	Nucor Steel	Merger economics
59.	87-0427 February 1988	Commonwealth Edison Company	Illinois	Federal Executive Agencies	Financial projections
60.	870840 February 1988	Philadelphia Suburban Water Company	Pennsylvania	Office of Consumer Advocate	Rate of Return

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	Docket Number	Utility	Jurisdiction	Client	Subject
61.	870832 March 1988	Columbia Gas of Pennsylvania	Pennsylvania	Office of Consumer Advocate	Rate of Return
62.	8063 Phase II July 1988	Potomac Electric Power Company	Maryland	Power Plant Research Program	Power supply study
63.	8102 July 1988	Southern Maryland Electric Cooperative	Maryland	Power Plant Research Program	Power supply study
64.	10105 August 1988	South Central Bell Telephone Co.	Kentucky	Attorney General	Rate of Return, incentive regulation
65.	00345 August 1988	Oklahoma Gas & Electric Company	Oklahoma	Smith Cogeneration	Need for power
66.	U-17906 September 1988	Louisiana Power & Light Company	Louisiana	Commission Staff	Rate of Return, nuclear power costs Industrial contracts
67.	88-170-EL-AIR October 1988	Cleveland Electric Illuminating Co.	Ohio	Northeast-Ohio Areawide Coordinating Agency	Economic impact study
68.	1914 December 1988	Providence Gas Company	Rhode Island	Commission Staff	Rate of Return
69.	U-12636 & U-17649 February 1989	Louisiana Power & Light Company	Louisiana	Commission Staff	Disposition of litigation proceeds
70.	00345 February 1989	Oklahoma Gas & Electric Company	Oklahoma	Smith Cogeneration	Load forecasting
71.	RP88-209 March 1989	Natural Gas Pipeline of America	FERC	Indiana Utility Consumer Counselor	Rate of Return
72.	8425 March 1989	Houston Lighting & Power Company	Texas	U.S. Department of Energy	Rate of Return
73.	EL89-30-000 April 1989	Central Illinois Public Service Company	FERC	Soyland Power Coop, Inc.	Rate of Return
74.	R-891208 May 1989	Pennsylvania American Water Company	Pennsylvania	Office of Consumer Advocate	Rate of Return

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	Docket Number	Utility	Jurisdiction	Client	Subject
75.	89-0033 May 1989	Illinois Bell Telephone Company	Illinois	Citizens Utility Board	Rate of Return
76.	881167-EI May 1989	Gulf Power Company	Florida	Federal Executive Agencies	Rate of Return
77.	R-891218 July 1989	National Fuel Gas Distribution Company	Pennsylvania	Office of Consumer Advocate	Sales forecasting
78.	8063, Phase III Sept. 1989	Potomac Electric Power Company	Maryland	Depart. Natural Resources	Emissions Controls
79.	37414-S2 October 1989	Public Service Company of Indiana	Indiana	Utility Consumer Counselor	Rate of Return, DSM, off-system sales, incentive regulation
80.	October 1989	Generic	U.S. House of Reps. Comm. on Ways & Means	N/A	Excess deferred income tax
81.	38728 November 1989	Indiana Michigan Power Company	Indiana	Utility Consumer Counselor	Rate of Return
82.	RP89-49-000 December 1989	National Fuel Gas Supply Corporation	FERC	PA Office of Consumer Advocate	Rate of Return
83.	R-891364 December 1989	Philadelphia Electric Company	Pennsylvania	PA Office of Consumer Advocate	Financial impacts (surrebuttal only)
84.	RP89-160-000 January 1990	Trunkline Gas Company	FERC	Indiana Utility Consumer Counselor	Rate of Return
85.	EL90-16-000 November 1990	System Energy Resources, Inc.	FERC	Louisiana Public Service Commission	Rate of Return
86.	89-624 March 1990	Bell Atlantic	FCC	PA Office of Consumer Advocate	Rate of Return
87.	8245 March 1990	Potomac Edison Company	Maryland	Depart. Natural Resources	Avoided Cost
88.	000586 March 1990	Public Service Company of Oklahoma	Oklahoma	Smith Cogeneration Mgmt.	Need for Power

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	Docket Number	Utility	Jurisdiction	Client	Subject
89.	38868 March 1990	Indianapolis Water Company	Indiana	Utility Consumer Counselor	Rate of Return
90.	1946 March 1990	Blackstone Valley Electric Company	Rhode Island	Division of Public Utilities	Rate of Return
91.	000776 April 1990	Oklahoma Gas & Electric Company	Oklahoma	Smith Cogeneration Mgmt.	Need for Power
92.	890366 May 1990, December 1990	Metropolitan Edison Company	Pennsylvania	Office of Consumer Advocate	Competitive Bidding Program Avoided Costs
93.	EC-90-10-000 May 1990	Northeast Utilities	FERC	Maine PUC, et al.	Merger, Market Power, Transmission Access
94.	ER-891109125 July 1990	Jersey Central Power & Light	New Jersey	Rate Counsel	Rate of Return
95.	R-901670 July 1990	National Fuel Gas Distribution Corp.	Pennsylvania	Office of Consumer Advocate	Rate of Return Test year sales
96.	8201 October 1990	Delmarva Power & Light Company	Maryland	Depart. Natural Resources	Competitive Bidding, Resource Planning
97.	EL90-45-000 April 1991	Entergy Services, Inc.	FERC	Louisiana PSC	Rate of Return
98.	GR90080786J January 1991	New Jersey Natural Gas	New Jersey	Rate Counsel	Rate of Return
99.	90-256 January 1991	South Central Bell Telephone Company	Kentucky	Attorney General	Rate of Return
100.	U-17949A February 1991	South Central Bell Telephone Company	Louisiana	Louisiana PSC	Rate of Return
101.	ER90091090J April 1991	Atlantic City Electric Company	New Jersey	Rate Counsel	Rate of Return
102.	8241, Phase I April 1991	Baltimore Gas & Electric Company	Maryland	Dept. of Natural Resources	Environmental controls

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	Docket Number	Utility	Jurisdiction	Client	Subject
103.	8241, Phase II May 1991	Baltimore Gas & Electric Company	Maryland	Dept. of Natural Resources	Need for Power, Resource Planning
104.	39128 May 1991	Indianapolis Water Company	Indiana	Utility Consumer Counselor	Rate of Return, rate base, financial planning
105.	P-900485 May 1991	Duquesne Light Company	Pennsylvania	Office of Consumer Advocate	Purchased power contract and related ratemaking
106.	G900240 P910502 May 1991	Metropolitan Edison Company Pennsylvania Electric Company	Pennsylvania	Office of Consumer Advocate	Purchased power contract and related ratemaking
107.	GR901213915 May 1991	Elizabethtown Gas Company	New Jersey	Rate Counsel	Rate of Return
108.	91-5032 August 1991	Nevada Power Company	Nevada	U.S. Dept. of Energy	Rate of Return
109.	EL90-48-000 November 1991	Entergy Services	FERC	Louisiana PSC	Capacity transfer
110.	000662 September 1991	Southwestern Bell Telephone	Oklahoma	Attorney General	Rate of Return
111.	U-19236 October 1991	Arkansas Louisiana Gas Company	Louisiana	Louisiana PSC Staff	Rate of Return
112.	U-19237 December 1991	Louisiana Gas Service Company	Louisiana	Louisiana PSC Staff	Rate of Return
113.	ER91030356J October 1991	Rockland Electric Company	New Jersey	Rate Counsel	Rate of Return
114.	GR91071243J February 1992	South Jersey Gas Company	New Jersey	Rate Counsel	Rate of Return
115.	GR91081393J March 1992	New Jersey Natural Gas Company	New Jersey	Rate Counsel	Rate of Return
116.	P-870235, et al. March 1992	Pennsylvania Electric Company	Pennsylvania	Office of Consumer Advocate	Cogeneration contracts

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117.	8413 March 1992	Potomac Electric Power Company	Maryland	Dept. of Natural Resources	IPP purchased power contracts
118.	39236 March 1992	Indianapolis Power & Light Company	Indiana	Utility Consumer Counselor	Least-cost planning Need for power
119.	R-912164 April 1992	Equitable Gas Company	Pennsylvania	Office of Consumer Advocate	Rate of Return
120.	ER-91111698J May 1992	Public Service Electric & Gas Company	New Jersey	Rate Counsel	Rate of Return
121.	U-19631 June 1992	Trans Louisiana Gas Company	Louisiana	PSC Staff	Rate of Return
122.	ER-91121820J July 1992	Jersey Central Power & Light Company	New Jersey	Rate Counsel	Rate of Return
123.	R-00922314 August 1992	Metropolitan Edison Company	Pennsylvania	Office of Consumer Advocate	Rate of Return
124.	92-049-05 September 1992	US West Communications	Utah	Committee of Consumer Services	Rate of Return
125.	92PUE0037 September 1992	Commonwealth Gas Company	Virginia	Attorney General	Rate of Return
126.	EC92-21-000 September 1992	Entergy Services, Inc.	FERC	Louisiana PSC	Merger Impacts (Affidavit)
127.	ER92-341-000 December 1992	System Energy Resources	FERC	Louisiana PSC	Rate of Return
128.	U-19904 November 1992	Louisiana Power & Light Company	Louisiana	Staff	Merger analysis, competition competition issues
129.	8473 November 1992	Baltimore Gas & Electric Company	Maryland	Dept. of Natural Resources	QF contract evaluation
130.	IPC-E-92-25 January 1993	Idaho Power Company	Idaho	Federal Executive Agencies	Power Supply Clause

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131.	E002/GR-92-1185 February 1993	Northern States Power Company	Minnesota	Attorney General	Rate of Return
132.	92-102, Phase II March 1992	Central Maine Power Company	Maine	Staff	QF contracts prudence and procurements practices
133.	EC92-21-000 March 1993	Entergy Corporation	FERC	Louisiana PSC	Merger Issues
134.	8489 March 1993	Delmarva Power & Light Company	Maryland	Dept. of Natural Resources	Power Plant Certification
135.	11735 April 1993	Texas Electric Utilities Company	Texas	Federal Executives Agencies	Rate of Return
136.	2082 May 1993	Providence Gas Company	Rhode Island	Division of Public Utilities	Rate of Return
137.	P-00930715 December 1993	Bell Telephone Company of Pennsylvania	Pennsylvania	Office of Consumer Advocate	Rate of Return, Financial Projections, Bell/TCI merger
138.	R-00932670 February 1994	Pennsylvania-American Water Company	Pennsylvania	Office of Consumer Advocate	Rate of Return
139.	8583 February 1994	Conowingo Power Company	Maryland	Dept. of Natural Resources	Competitive Bidding for Power Supplies
140.	E-015/GR-94-001 April 1994	Minnesota Power & Light Company	Minnesota	Attorney General	Rate of Return
141.	CC Docket No. 94-1 May 1994	Generic Telephone	FCC	MCI Comm. Corp.	Rate of Return
142.	92-345, Phase II June 1994	Central Maine Power Company	Maine	Advocacy Staff	Price Cap Regulation Fuel Costs
143.	93-11065 April 1994	Nevada Power Company	Nevada	Federal Executive Agencies	Rate of Return
144.	94-0065 May 1994	Commonwealth Edison Company	Illinois	Federal Executive Agencies	Rate of Return
145.	GR94010002J June 1994	South Jersey Gas Company	New Jersey	Rate Counsel	Rate of Return

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146.	WR94030059 July 1994	New Jersey-American Water Company	New Jersey	Rate Counsel	Rate of Return
147.	RP91-203-000 June 1994	Tennessee Gas Pipeline Company	FERC	Customer Group	Environmental Externalities (oral testimony only)
148.	ER94-998-000 July 1994	Ocean State Power	FERC	Boston Edison Company	Rate of Return
149.	R-00942986 July 1994	West Penn Power Company	Pennsylvania	Office of Consumer Advocate	Rate of Return, Emission Allowances
150.	94-121 August 1994	South Central Bell Telephone Company	Kentucky	Attorney General	Rate of Return
151.	35854-S2 November 1994	PSI Energy, Inc.	Indiana	Utility Consumer Counsel	Merger Savings and Allocations
152.	IPC-E-94-5 November 1994	Idaho Power Company	Idaho	Federal Executive Agencies	Rate of Return
153.	November 1994	Edmonton Water	Alberta, Canada	Regional Customer Group	Rate of Return (Rebuttal Only)
154.	90-256 December 1994	South Central Bell Telephone Company	Kentucky	Attorney General	Incentive Plan True-Ups
155.	U-20925 February 1995	Louisiana Power & Light Company	Louisiana	PSC Staff	Rate of Return Industrial Contracts Trust Fund Earnings
156.	R-00943231 February 1995	Pennsylvania-American Water Company	Pennsylvania	Consumer Advocate	Rate of Return
157.	8678 March 1995	Generic	Maryland	Dept. Natural Resources	Electric Competition Incentive Regulation (oral only)
158.	R-000943271 April 1995	Pennsylvania Power & Light Company	Pennsylvania	Consumer Advocate	Rate of Return Nuclear decommissioning Capacity Issues
159.	U-20925 May 1995	Louisiana Power & Light Company	Louisiana	Commission Staff	Class Cost of Service Issues

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160.	2290 June 1995	Narragansett Electric Company	Rhode Island	Division Staff	Rate of Return
161.	U-17949E June 1995	South Central Bell Telephone Company	Louisiana	Commission Staff	Rate of Return
162.	2304 July 1995	Providence Water Supply Board	Rhode Island	Division Staff	Cost recovery of Capital Spending Program
163.	ER95-625-000, et al. August 1995	PSI Energy, Inc.	FERC	Office of Utility Consumer Counselor	Rate of Return
164.	P-00950915, et al. September 1995	Paxton Creek Cogeneration Assoc.	Pennsylvania	Office of Consumer Advocate	Cogeneration Contract Amendment
165.	8702 September 1995	Potomac Edison Company	Maryland	Dept. of Natural Resources	Allocation of DSM Costs (oral only)
166.	ER95-533-001 September 1995	Ocean State Power	FERC	Boston Edison Co.	Cost of Equity
167.	40003 November 1995	PSI Energy, Inc.	Indiana	Utility Consumer Counselor	Rate of Return Retail wheeling
168.	P-55, SUB 1013 January 1996	BellSouth	North Carolina	AT&T	Rate of Return
169.	P-7, SUB 825 January 1996	Carolina Tel.	North Carolina	AT&T	Rate of Return
170.	February 1996	Generic Telephone	FCC	MCI	Cost of capital
171.	95A-531EG April 1996	Public Service Company of Colorado	Colorado	Federal Executive Agencies	Merger issues
172.	ER96-399-000 May 1996	Northern Indiana Public Service Company	FERC	Indiana Office of Utility Consumer Counselor	Cost of capital
173.	8716 June 1996	Delmarva Power & Light Company	Maryland	Dept. of Natural Resources	DSM programs
174.	8725 July 1996	BGE/PEPCO	Maryland	Md. Energy Admin.	Merger Issues

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175.	U-20925 August 1996	Entergy Louisiana, Inc.	Louisiana	PSC Staff	Rate of Return Allocations Fuel Clause
176.	EC96-10-000 September 1996	BGE/PEPCO	FERC	Md. Energy Admin.	Merger issues competition
177.	EL95-53-000 November 1996	Entergy Services, Inc.	FERC	Louisiana PSC	Nuclear Decommissioning
178.	WR96100768 March 1997	Consumers NJ Water Company	New Jersey	Ratepayer Advocate	Cost of Capital
179.	WR96110818 April 1997	Middlesex Water Co.	New Jersey	Ratepayer Advocate	Cost of Capital
180.	U-11366 April 1997	Ameritech Michigan	Michigan	MCI	Access charge reform/financial condition
181.	97-074 May 1997	BellSouth	Kentucky	MCI	Rate Rebalancing financial condition
182.	2540 June 1997	New England Power	Rhode Island	PUC Staff	Divestiture Plan
183.	96-336-TP-CSS June 1997	Ameritech Ohio	Ohio	MCI	Access Charge reform Economic impacts
184.	WR97010052 July 1997	Maxim Sewerage Corp.	New Jersey	Ratepayer Advocate	Rate of Return
185.	97-300 August 1997	LG&E/KU	Kentucky	Attorney General	Merger Plan
186.	Case No. 8738 August 1997	Generic (oral testimony only)	Maryland	Dept. of Natural Resources	Electric Restructuring Policy
187.	Docket No. 2592 September 1997	Eastern Utilities	Rhode Island	PUC Staff	Generation Divestiture
188.	Case No.97-247 September 1997	Cincinnati Bell Telephone	Kentucky	MCI	Financial Condition

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189.	Docket No. U-20925 November 1997	Entergy Louisiana	Louisiana	PSC Staff	Rate of Return
190.	Docket No. D97.7.90 November 1997	Montana Power Co.	Montana	Montana Consumers Counsel	Stranded Cost
191.	Docket No. EO97070459 November 1997	Jersey Central Power & Light Co.	New Jersey	Ratepayer Advocate	Stranded Cost
192.	Docket No. R-00974104 November 1997	Duquesne Light Co.	Pennsylvania	Office of Consumer Advocate	Stranded Cost
193.	Docket No. R-00973981 November 1997	West Penn Power Co.	Pennsylvania	Office of Consumer Advocate	Stranded Cost
194.	Docket No. A-1101150F0015 November 1997	Allegheny Power System DQE, Inc.	Pennsylvania	Office of Consumer Advocate	Merger Issues
195.	Docket No. WR97080615 January 1998	Consumers NJ Water Company	New Jersey	Ratepayer Advocate	Rate of Return
196.	Docket No. R-00974149 January 1998	Pennsylvania Power Company	Pennsylvania	Office of Consumer Advocate	Stranded Cost
197.	Case No. 8774 January 1998	Allegheny Power System DQE, Inc.	Maryland	Dept. of Natural Resources MD Energy Administration	Merger Issues
198.	Docket No. U-20925 (SC) March 1998	Entergy Louisiana, Inc.	Louisiana	Commission Staff	Restructuring, Stranded Costs, Market Prices
199.	Docket No. U-22092 (SC) March 1998	Entergy Gulf States, Inc.	Louisiana	Commission Staff	Restructuring, Stranded Costs, Market Prices
200.	Docket Nos. U-22092 (SC) and U-20925(SC) May 1998	Entergy Gulf States and Entergy Louisiana	Louisiana	Commission Staff	Standby Rates
201.	Docket No. WR98010015 May 1998	NJ American Water Co.	New Jersey	Ratepayer Advocate	Rate of Return
202.	Case No. 8794 December 1998	Baltimore Gas & Electric Co.	Maryland	MD Energy Admin./Dept. Of Natural Resources	Stranded Cost/ Transition Plan

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203.	Case No. 8795 December 1998	Delmarva Power & Light Co.	Maryland	MD Energy Admin./Dept. Of Natural Resources	Stranded Cost/ Transition Plan
204.	Case No. 8797 January 1998	Potomac Edison Co.	Maryland	MD Energy Admin./Dept. Of Natural Resources	Stranded Cost/ Transition Plan
205.	Docket No. WR98090795 March 1999	Middlesex Water Co.	New Jersey	Ratepayer Advocate	Rate of Return
206.	Docket No. 99-02-05 April 1999	Connecticut Light & Power	Connecticut	Attorney General	Stranded Costs
207.	Docket No. 99-03-04 May 1999	United Illuminating Company	Connecticut	Attorney General	Stranded Costs
208.	Docket No. U-20925 (FRP) June 1999	Entergy Louisiana, Inc.	Louisiana	Staff	Capital Structure
209.	Docket No. EC-98-40-000, et al. May 1999	American Electric Power/ Central & Southwest	FERC	Arkansas PSC	Market Power Mitigation
210.	Docket No. 99-03-35 July 1999	United Illuminating Company	Connecticut	Attorney General	Restructuring
211.	Docket No. 99-03-36 July 1999	Connecticut Light & Power Co.	Connecticut	Attorney General	Restructuring
212.	WR99040249 Oct. 1999	Environmental Disposal Corp.	New Jersey	Ratepayer Advocate	Rate of Return
213.	2930 Nov. 1999	NEES/EUA	Rhode Island	Division Staff	Merger/Cost of Capital
214.	DE99-099 Nov. 1999	Public Service New Hampshire	New Hampshire	Consumer Advocate	Cost of Capital Issues
215.	00-01-11 Feb. 2000	Con Ed/NU	Connecticut	Attorney General	Merger Issues
216.	Case No. 8821 May 2000	Reliant/ODEC	Maryland	Dept. of Natural Resources	Need for Power/Plant Operations

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217.	Case No. 8738 July 2000	Generic	Maryland	Dept. of Natural Resources	DSM Funding
218.	Case No. U-23356 June 2000	Entergy Louisiana, Inc.	Louisiana	PSC Staff	Fuel Prudence Issues Purchased Power
219.	Case No. 21453, et al. July 2000	SWEPCO	Louisiana	PSC Staff	Stranded Costs
220.	Case No. 20925 (B) July 2000	Entergy Louisiana	Louisiana	PSC Staff	Purchase Power Contracts
221.	Case No. 24889 August 2000	Entergy Louisiana	Louisiana	PSC Staff	Purchase Power Contracts
222.	Case No. 21453, et al. February 2001	CLECO	Louisiana	PSC Staff	Stranded Costs
223.	P-00001860 and P-0000181 March 2001	GPU Companies	Pennsylvania	Office of Consumer Advocate	Rate of Return
224.	CVOL-0505662-S March 2001	ConEd/NU	Connecticut Superior Court	Attorney General	Merger (Affidavit)
225.	U-20925 (SC) March 2001	Entergy Louisiana	Louisiana	PSC Staff	Stranded Costs
226.	U-22092 (SC) March 2001	Entergy Gulf States	Louisiana	PSC Staff	Stranded Costs
227.	U-25533 May 2001	Entergy Louisiana/ Gulf States	Louisiana Interruptible Service	PSC Staff	Purchase Power
228.	P-00011872 May 2001	Pike County Pike	Pennsylvania	Office of Consumer Advocate	Rate of Return
229.	8893 July 2001	Baltimore Gas & Electric Co.	Maryland	MD Energy Administration	Corporate Restructuring
230.	8890 September 2001	Potomac Electric/Connectivity	Maryland	MD Energy Administration	Merger Issues

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231.	U-25533 August 2001	Entergy Louisiana / Gulf States	Louisiana	Staff	Purchase Power Contracts
232.	U-25965 November 2001	Generic	Louisiana	Staff	RTO Issues
233.	3401 March 2002	New England Gas Co.	Rhode Island	Division of Public Utilities	Rate of Return
234.	99-833-MJR April 2002	Illinois Power Co.	U.S. District Court	U.S. Department of Justice	New Source Review
235.	U-25533 March 2002	Entergy Louisiana/ Gulf States	Louisiana	PSC Staff	Nuclear Uprates Purchase Power
236.	P-00011872 May 2002	Pike County Power & Light	Pennsylvania	Consumer Advocate	POLR Service Costs
237.	U-26361, Phase I May 2002	Entergy Louisiana/ Gulf States	Louisiana	PSC Staff	Purchase Power Cost Allocations
238.	R-00016849C001, et al. June 2002	Generic	Pennsylvania	Pennsylvania OCA	Rate of Return
239.	U-26361, Phase II July 2002	Entergy Louisiana/ Entergy Gulf States	Louisiana	PSC Staff	Purchase Power Contracts
240.	U-20925(B) August 2002	Entergy Louisiana	Louisiana	PSC Staff	Tax Issues
241.	U-26531 October 2002	SWEPCO	Louisiana	PSC Staff	Purchase Power Contract
242.	8936 October 2002	Delmarva Power & Light	Maryland	Energy Administration Dept. Natural Resources	Standard Offer Service
243.	U-25965 November 2002	SWEPCO/AEP	Louisiana	PSC Staff	RTO Cost/Benefit
244.	8908 Phase I November 2002	Generic	Maryland	Energy Administration Dept. Natural Resources	Standard Offer Service
245.	02S-315EG November 2002	Public Service Company of Colorado	Colorado	Fed. Executive Agencies	Rate of Return

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246.	EL02-111-000 December 2002	PJM/MISO	FERC	MD PSC	Transmission Ratemaking
247.	02-0479 February 2003	Commonwealth Edison	Illinois	Dept. of Energy	POLR Service
248.	PL03-1-000 March 2003	Generic	FERC	NASUCA	Transmission Pricing (Affidavit)
249.	U-27136 April 2003	Entergy Louisiana	Louisiana	Staff	Purchase Power Contracts
250.	8908 Phase II July 2003	Generic	Maryland	Energy Administration Dept. of Natural Resources	Standard Offer Service
251.	U-27192 June 2003	Entergy Louisiana and Gulf States	Louisiana	LPSC Staff	Purchase Power Contract Cost Recovery
252.	C2-99-1181 October 2003	Ohio Edison Company	U.S. District Court	U.S. Department of Justice, et al.	Clean Air Act Compliance Economic Impact (Report)
253.	RP03-398-000 December 2003	Northern Natural Gas Co.	FERC	Municipal Distributors Group/Gas Task Force	Rate of Return
254.	8738 December 2003	Generic	Maryland	Energy Admin Department of Natural Resources	Environmental Disclosure (oral only)
255.	U-27136 December 2003	Entergy Louisiana, Inc.	Louisiana	PSC Staff	Purchase Power Contracts
256.	U-27192, Phase II October/December 2003	Entergy Louisiana & Entergy Gulf States	Louisiana	PSC Staff	Purchase Power Contracts
257.	WC Docket 03-173 December 2003	Generic	FCC	MCI	Cost of Capital (TELRIC)
258.	ER 030 20110 January 2004	Atlantic City Electric	New Jersey	Ratepayer Advocate	Rate of Return
259.	E-01345A-03-0437 January 2004	Arizona Public Service Company	Arizona	Federal Executive Agencies	Rate of Return
260.	03-10001 January 2004	Nevada Power Company	Nevada	U.S. Dept. of Energy	Rate of Return

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261.	R-00049255 June 2004	PPL Elec. Utility	Pennsylvania	Office of Consumer Advocate	Rate of Return
262.	U-20925 July 2004	Entergy Louisiana, Inc.	Louisiana	PSC Staff	Rate of Return Capacity Resources
263.	U-27866 September 2004	Southwest Electric Power Co.	Louisiana	PSC Staff	Purchase Power Contract
264.	U-27980 September 2004	Cleco Power	Louisiana	PSC Staff	Purchase Power Contract
265.	U-27865 October 2004	Entergy Louisiana, Inc. Entergy Gulf States	Louisiana	PSC Staff	Purchase Power Contract
266.	RP04-155 December 2004	Northern Natural Gas Company	FERC	Municipal Distributors Group/Gas Task Force	Rate of Return
267.	U-27836 January 2005	Entergy Louisiana/ Gulf States	Louisiana	PSC Staff	Power plant Purchase and Cost Recovery
268.	U-199040 et al. February 2005	Entergy Gulf States/ Louisiana	Louisiana	PSC Staff	Global Settlement, Multiple rate proceedings
269.	EF03070532 March 2005	Public Service Electric & Gas	New Jersey	Ratepayers Advocate	Securitization of Deferred Costs
270.	05-0159 June 2005	Commonwealth Edison	Illinois	Department of Energy	POLR Service
271.	U-28804 June 2005	Entergy Louisiana	Louisiana	LPSC Staff	QF Contract
272.	U-28805 June 2005	Entergy Gulf States	Louisiana	LPSC Staff	QF Contract
273.	05-0045-EI June 2005	Florida Power & Lt.	Florida	Federal Executive Agencies	Rate of Return
274.	9037 July 2005	Generic	Maryland	MD. Energy Administration	POLR Service
275.	U-28155 August 2005	Entergy Louisiana Entergy Gulf States	Louisiana	LPSC Staff	Independent Coordinator of Transmission Plan

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276.	U-27866-A September 2005	Southwestern Electric Power Company	Louisiana	LPSC Staff	Purchase Power Contract
277.	U-28765 October 2005	Cleco Power LLC	Louisiana	LPSC Staff	Purchase Power Contract
278.	U-27469 October 2005	Entergy Louisiana Entergy Gulf States	Louisiana	LPSC Staff	Avoided Cost Methodology
279.	A-313200F007 October 2005	Sprint (United of PA)	Pennsylvania	Office of Consumer Advocate	Corporate Restructuring
280.	EM05020106 November 2005	Public Service Electric & Gas Company	New Jersey	Ratepayer Advocate	Merger Issues
281.	U-28765 December 2005	Cleco Power LLC	Louisiana	LPSC Staff	Plant Certification, Financing, Rate Plan
282.	U-29157 February 2006	Cleco Power LLC	Louisiana	LPSC Staff	Storm Damage Financing
283.	U-29204 March 2006	Entergy Louisiana Entergy Gulf States	Louisiana	LPSC Staff	Purchase power contracts
284.	A-310325F006 March 2006	Alltel	Pennsylvania	Office of Consumer Advocate	Merger, Corporate Restructuring
285.	9056 March 2006	Generic	Maryland	Maryland Energy Administration	Standard Offer Service Structure
286.	C2-99-1182 April 2006	American Electric Power Utilities	U. S. District Court Southern District, Ohio	U. S. Department of Justice	New Source Review Enforcement (expert report)
287.	EM05121058 April 2006	Atlantic City Electric	New Jersey	Ratepayer Advocate	Power plant Sale
288.	ER05121018 June 2006	Jersey Central Power & Light Company	New Jersey	Ratepayer Advocate	NUG Contracts Cost Recovery
289.	U-21496, Subdocket C June 2006	Cleco Power LLC	Louisiana	Commission Staff	Rate Stabilization Plan
290.	GR0510085 June 2006	Public Service Electric & Gas Company	New Jersey	Ratepayer Advocate	Rate of Return (gas services)

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291.	R-000061366 July 2006	Metropolitan Ed. Company Penn. Electric Company	Pennsylvania	Office of Consumer Advocate	Rate of Return
292.	9064 September 2006	Generic	Maryland	Energy Administration	Standard Offer Service
293.	U-29599 September 2006	Cleco Power LLC	Louisiana	Commission Staff	Purchase Power Contracts
294.	WR06030257 September 2006	New Jersey American Water Company	New Jersey	Rate Counsel	Rate of Return
295.	U-27866/U-29702 October 2006	Southwestern Electric Power Company	Louisiana	Commission Staff	Purchase Power/Power Plant Certification
296.	9063 October 2006	Generic	Maryland	Energy Administration Department of Natural Resources	Generation Supply Policies
297.	EM06090638 November 2006	Atlantic City Electric	New Jersey	Rate Counsel	Power Plant Sale
298.	C-2000065942 November 2006	Pike County Light & Power	Pennsylvania	Consumer Advocate	Generation Supply Service
299.	ER06060483 November 2006	Rockland Electric Company	New Jersey	Rate Counsel	Rate of Return
300.	A-110150F0035 December 2006	Duquesne Light Company	Pennsylvania	Consumer Advocate	Merger Issues
301.	U-29203, Phase II January 2007	Entergy Gulf States Entergy Louisiana	Louisiana	Commission Staff	Storm Damage Cost Allocation
302.	06-11022 February 2007	Nevada Power Company	Nevada	U.S. Dept. of Energy	Rate of Return
303.	U-29526 March 2007	Cleco Power	Louisiana	Commission Staff	Affiliate Transactions
304.	P-00072245 March 2007	Pike County Light & Power	Pennsylvania	Consumer Advocate	Provider of Last Resort Service
305.	P-00072247 March 2007	Duquesne Light Company	Pennsylvania	Consumer Advocate	Provider of Last Resort Service

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306.	EM07010026 May 2007	Jersey Central Power & Light Company	New Jersey	Rate Counsel	Power Plant Sale
307.	U-30050 June 2007	Entergy Louisiana Entergy Gulf States	Louisiana	Commission Staff	Purchase Power Contract
308.	U-29956 June 2007	Entergy Louisiana	Louisiana	Commission Staff	Black Start Unit
309.	U-29702 June 2007	Southwestern Electric Power Company	Louisiana	Commission Staff	Power Plant Certification
310.	U-29955 July 2007	Entergy Louisiana Entergy Gulf States	Louisiana	Commission Staff	Purchase Power Contracts
311.	2007-67 July 2007	FairPoint Communications	Maine	Office of Public Advocate	Merger Financial Issues
312.	P-00072259 July 2007	Metropolitan Edison Co.	Pennsylvania	Office of Consumer Advocate	Purchase Power Contract Restructuring
313.	EO07040278 September 2007	Public Service Electric & Gas	New Jersey	Rate Counsel	Solar Energy Program Financial Issues
314.	U-30192 September 2007	Entergy Louisiana	Louisiana	Commission Staff	Power Plant Certification Ratemaking, Financing
315.	9117 (Phase II) October 2007	Generic (Electric)	Maryland	Energy Administration	Standard Offer Service Reliability
316.	U-30050 November 2007	Entergy Gulf States	Louisiana	Commission Staff	Power Plant Acquisition
317.	IPC-E-07-8 December 2007	Idaho Power Co.	Idaho	U.S. Department of Energy	Cost of Capital
318.	U-30422 (Phase I) January 2008	Entergy Gulf States	Louisiana	Commission Staff	Purchase Power Contract
319.	U-29702 (Phase II) February, 2008	Southwestern Electric Power Co.	Louisiana	Commission Staff	Power Plant Certification
320.	March 2008	Delmarva Power & Light	Delaware State Senate	Senate Committee	Wind Energy Economics

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321.	U-30192 (Phase II) March 2008	Entergy Louisiana	Louisiana	Commission Staff	Cash CWIP Policy, Credit Ratings
322.	U-30422 (Phase II) April 2008	Entergy Gulf States - LA	Louisiana	Commission Staff	Power Plant Acquisition
323.	U-29955 (Phase II) April 2008	Entergy Gulf States - LA Entergy Louisiana	Louisiana	Commission Staff	Purchase Power Contract
324.	GR-070110889 April 2008	New Jersey Natural Gas Company	New Jersey	Rate Counsel	Cost of Capital
325.	WR-08010020 July 2008	New Jersey American Water Company	New Jersey	Rate Counsel	Cost of Capital
326.	U-28804-A August 2008	Entergy Louisiana	Louisiana	Commission Staff	Cogeneration Contract
327.	IP-99-1693C-M/S August 2008	Duke Energy Indiana	Federal District Court	U.S. Department of Justice/ Environmental Protection Agency	Clean Air Act Compliance (Expert Report)
328.	U-30670 September 2008	Entergy Louisiana	Louisiana	Commission Staff	Nuclear Plant Equipment Replacement
329.	9149 October 2008	Generic	Maryland	Department of Natural Resources	Capacity Adequacy/Reliability
330.	IPC-E-08-10 October 2008	Idaho Power Company	Idaho	U.S. Department of Energy	Cost of Capital
331.	U-30727 October 2008	Cleco Power LLC	Louisiana	Commission Staff	Purchased Power Contract
332.	U-30689-A December 2008	Cleco Power LLC	Louisiana	Commission Staff	Transmission Upgrade Project
333.	IP-99-1693C-M/S February 2009	Duke Energy Indiana	Federal District Court	U.S. Department of Justice/EPA	Clean Air Act Compliance (Oral Testimony)
334.	U-30192, Phase II February 2009	Entergy Louisiana, LLC	Louisiana	Commission Staff	CWIP Rate Request Plant Allocation
335.	U-28805-B February 2009	Entergy Gulf States, LLC	Louisiana	Commission Staff	Cogeneration Contract

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336.	P-2009-2093055, et al. May 2009	Metropolitan Edison Pennsylvania Electric	Pennsylvania	Office of Consumer Advocate	Default Service
337.	U-30958 July 2009	Cleco Power	Louisiana	Commission Staff	Purchase Power Contract
338.	EO08050326 August 2009	Jersey Central Power Light Co.	New Jersey	Rate Counsel	Demand Response Cost Recovery
339.	GR09030195 August 2009	Elizabethtown Gas	New Jersey	New Jersey Rate Counsel	Cost of Capital
340.	U-30422-A August 2009	Entergy Gulf States	Louisiana	Staff	Generating Unit Purchase
341.	CV 1:99-01693 August 2009	Duke Energy Indiana	Federal District Court – Indiana	U. S. DOJ/EPA, et al.	Environmental Compliance Rate Impacts (Expert Report)
342.	4065 September 2009	Narragansett Electric	Rhode Island	Division Staff	Cost of Capital
343.	U-30689 September 2009	Cleco Power	Louisiana	Staff	Cost of Capital, Rate Design, Other Rate Case Issues
344.	U-31147 October 2009	Entergy Gulf States Entergy Louisiana	Louisiana	Staff	Purchase Power Contracts
345.	U-30913 November 2009	Cleco Power	Louisiana	Staff	Certification of Generating Unit
346.	M-2009-2123951 November 2009	West Penn Power	Pennsylvania	Office of Consumer Advocate	Smart Meter Cost of Capital (Surrebuttal Only)
347.	GR09050422 November 2009	Public Service Electric & Gas Company	New Jersey	Rate Counsel	Cost of Capital
348.	D-09-49 November 2009	Narragansett Electric	Rhode Island	Division Staff	Securities Issuances
349.	U-29702, Phase II November 2009	Southwestern Electric Power Company	Louisiana	Commission Staff	Cash CWIP Recovery
350.	U-30981 December 2009	Entergy Louisiana Entergy Gulf States	Louisiana	Commission Staff	Storm Damage Cost Allocation

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351.	U-31196 (ITA Phase) February 2010	Entergy Louisiana	Louisiana	Staff	Purchase Power Contract
352.	ER09080668 March 2010	Rockland Electric	New Jersey	Rate Counsel	Rate of Return
353.	GR10010035 May 2010	South Jersey Gas Co.	New Jersey	Rate Counsel	Rate of Return
354.	P-2010-2157862 May 2010	Pennsylvania Power Co.	Pennsylvania	Consumer Advocate	Default Service Program
355.	10-CV-2275 June 2010	Xcel Energy	U.S. District Court Minnesota	U.S. Dept. Justice/EPA	Clean Air Act Enforcement
356.	WR09120987 June 2010	United Water New Jersey	New Jersey	Rate Counsel	Rate of Return
357.	U-30192, Phase III June 2010	Entergy Louisiana	Louisiana	Staff	Power Plant Cancellation Costs
358.	31299 July 2010	Cleco Power	Louisiana	Staff	Securities Issuances
359.	App. No. 1601162 July 2010	EPCOR Water	Alberta, Canada	Regional Customer Group	Cost of Capital
360.	U-31196 July 2010	Entergy Louisiana	Louisiana	Staff	Purchase Power Contract
361.	2:10-CV-13101 August 2010	Detroit Edison	U.S. District Court Eastern Michigan	U.S. Dept. of Justice/EPA	Clean Air Act Enforcement
362.	U-31196 August 2010	Entergy Louisiana Entergy Gulf States	Louisiana	Staff	Generating Unit Purchase and Cost Recovery
363.	Case No. 9233 October 2010	Potomac Edison Company	Maryland	Energy Administration	Merger Issues
364.	2010-2194652 November 2010	Pike County Light & Power	Pennsylvania	Consumer Advocate	Default Service Plan
365.	2010-2213369 April 2011	Duquesne Light Company	Pennsylvania	Consumer Advocate	Merger Issues

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366.	U-31841 May 2011	Entergy Gulf States	Louisiana	Staff	Purchase Power Agreement
367.	11-06006 September 2011	Nevada Power	Nevada	U. S. Department of Energy	Cost of Capital
368.	9271 September 2011	Exelon/Constellation	Maryland	MD Energy Administration	Merger Savings
369.	4255 September 2011	United Water Rhode Island	Rhode Island	Division of Public Utilities	Rate of Return
370.	P-2011-2252042 October 2011	Pike County Light & Power	Pennsylvania	Consumer Advocate	Default service plan
371.	U-32095 November 2011	Southwestern Electric Power Company	Louisiana	Commission Staff	Wind energy contract
372.	U-32031 November 2011	Entergy Gulf States Louisiana	Louisiana	Commission Staff	Purchased Power Contract
373.	U-32088 January 2012	Entergy Louisiana	Louisiana	Commission Staff	Coal plant evaluation
374.	R-2011-2267958 February 2012	Aqua Pa.	Pennsylvania	Office of Consumer Advocate	Cost of capital
375.	P-2011-2273650 February 2012	FirstEnergy Companies	Pennsylvania	Office of Consumer Advocate	Default service plan
376.	U-32223 March 2012	Cleco Power	Louisiana	Commission Staff	Purchase Power Contract and Rate Recovery
377.	U-32148 March 2012	Entergy Louisiana Energy Gulf States	Louisiana	Commission Staff	RTO Membership
378.	ER11080469 April 2012	Atlantic City Electric	New Jersey	Rate Counsel	Cost of capital
379.	R-2012-2285985 May 2012	Peoples Natural Gas Company	Pennsylvania	Office of Consumer Advocate	Cost of capital
380.	U-32153 July 2012	Cleco Power	Louisiana	Commission Staff	Environmental Compliance Plan

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381.	U-32435 August 2012	Entergy Gulf States Louisiana LLC	Louisiana	Commission Staff	Cost of equity (gas)
382.	ER-2012-0174 August 2012	Kansas City Power & Light Company	Missouri	U. S. Department of Energy	Rate of return
383.	U-31196 August 2012	Entergy Louisiana/ Entergy Gulf States	Louisiana	Commission Staff	Power Plant Joint Ownership
384.	ER-2012-0175 August 2012	KCP&L Greater Missouri Operations	Missouri	U.S. Department of Energy	Rate of Return
385.	4323 August 2012	Narragansett Electric Company	Rhode Island	Division of Public Utilities and Carriers	Rate of Return (electric and gas)
386.	D-12-049 October 2012	Narragansett Electric Company	Rhode Island	Division of Public Utilities and Carriers	Debt issue
387.	GO12070640 October 2012	New Jersey Natural Gas Company	New Jersey	Rate Counsel	Cost of capital
388.	GO12050363 November 2012	South Jersey Gas Company	New Jersey	Rate Counsel	Cost of capital
389.	R-2012-2321748 January 2013	Columbia Gas of Pennsylvania	Pennsylvania	Office of Consumer Advocate	Cost of capital
390.	U-32220 February 2013	Southwestern Electric Power Co.	Louisiana	Commission Staff	Formula Rate Plan
391.	CV No. 12-1286 February 2013	PPL et al.	Federal District Court	MD Public Service Commission	PJM Market Impacts (deposition)
392.	EL13-48-000 February 2013	BGE, PHI subsidiaries	FERC	Joint Customer Group	Transmission Cost of Equity
393.	EO12080721 March 2013	Public Service Electric & Gas	New Jersey	Rate Counsel	Solar Tracker ROE
394.	EO12080726 March 2013	Public Service Electric & Gas	New Jersey	Rate Counsel	Solar Tracker ROE
395.	CV12-1286MJG March 2013	PPL, PSEG	U.S. District Court for the District of Md.	Md. Public Service Commission	Capacity Market Issues (trial testimony)

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396.	U-32628 April 2013	Entergy Louisiana and Gulf States Louisiana	Louisiana	Staff	Avoided cost methodology
397.	U-32675 June 2013	Entergy Louisiana and Entergy Gulf States	Louisiana	Staff	RTO Integration Issues
398.	ER12111052 June 2013	Jersey Central Power & Light Company	New Jersey	Rate Counsel	Cost of capital
399.	PUE-2013-00020 July 2013	Dominion Virginia Power	Virginia	Apartment & Office Building Assoc. of Met. Washington	Cost of capital
400.	U-32766 August 2013	Cleco Power	Louisiana	Staff	Power plant acquisition
401.	U-32764 September 2013	Entergy Louisiana and Entergy Gulf States	Louisiana	Staff	Storm Damage Cost Allocation
402.	P-2013-237-1666 September 2013	Pike County Light and Power Co.	Pennsylvania	Office of Consumer Advocate	Default Generation Service
403.	E013020155 and G013020156 October 2013	Public Service Electric and Gas Company	New Jersey	Rate Counsel	Cost of capital
404.	U-32507 November 2013	Cleco Power	Louisiana	Staff	Environmental Compliance Plan
405.	DE11-250 December 2013	Public Service Co. New Hampshire	New Hampshire	Consumer Advocate	Power plant investment prudence
406.	4434 February 2014	United Water Rhode Island	Rhode Island	Staff	Cost of Capital
407.	U-32987 February 2014	Atmos Energy	Louisiana	Staff	Cost of Capital
408.	EL 14-28-000 February 2014	Entergy Louisiana Entergy Gulf States	FERC	LPSC	Avoided Cost Methodology (affidavit)
409.	ER13111135 May 2014	Rockland Electric	New Jersey	Rate Counsel	Cost of Capital

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410.	13-2385-SSO, et al. May 2014	AEP Ohio	Ohio	Ohio Consumers' Counsel	Default Service Issues
411.	U-32779 May 2014	Cleco Power, LLC	Louisiana	Staff	Formula Rate Plan
412.	CV-00234-SDD-SCR June 2014	Entergy Louisiana Entergy Gulf	U.S. District Court Middle District Louisiana	Louisiana Public Service Commission	Avoided Cost Determination Court Appeal
413.	U-32812 July 2014	Entergy Louisiana	Louisiana	Louisiana Public Service Commission	Nuclear Power Plant Prudence
414.	14-841-EL-SSO September 2014	Duke Energy Ohio	Ohio	Ohio Consumer' Counsel	Default Service Issues
415.	EM14060581 November 2014	Atlantic City Electric Company	New Jersey	Rate Counsel	Merger Financial Issues
416.	EL15-27 December 2014	BGE, PHI Utilities	FERC	Joint Complainants	Cost of Equity
417.	14-1297-EL-SSO December 2014	First Energy Utilities	Ohio	Ohio Consumer's Counsel and NOPEC	Default Service Issues
418.	EL-13-48-001 January 2015	BGE, PHI Utilities	FERC	Joint Complainants	Cost of Equity
419.	EL13-48-001 and EL15-27-000 April 2015	BGE and PHI Utilities	FERC	Joint Complainants	Cost of Equity
420.	U- 33592 November 2015	Entergy Louisiana	Louisiana Public Service Commission	Commission Staff	PURPA PPA Contract
421.	GM15101196 April 2016	AGL Resources	New Jersey	Rate Counsel	Financial Aspects of Merger
422.	U-32814 April 2016	Southwestern Electric Power	Louisiana	Staff	Wind Energy PPAs
423.	A-2015-2517036, et.al. April 2016	Pike County	Pennsylvania	Consumer Advocate	Merger Issues

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424.	EM15060733 August 2016	Jersey Central Power & Light Company	New Jersey	Rate Counsel	Transmission Divestiture
425.	16-395-EL-SSO November 2016	Dayton Power & Light Company	Ohio	Ohio Consumer's Counsel	Electric Security Plan
426.	PUE-2016-00001 January 2017	Washington Gas Light	Virginia	AOBA	Cost of Capital
427.	U-34200 April 2017	Southwestern Electric Power Co.	Louisiana	Commission Staff	Design of Formula Rate Plan
428.	ER-17030308 August 2017	Atlantic City Electric Co.	New Jersey	Rate Counsel	Cost of Capital
429.	U-33856 October 2017	Southwestern Electric Power Co.	Louisiana	Commission Staff	Power Plant Prudence
430.	4:11 CV77RWS December 2017	Ameren Missouri	U.S. District Court	U.S. Department of Justice	Expert Report FGD Retrofit
431.	D-17-36 January 2018	Narragansett Electric Co.	Rhode Island	Division Staff	Debt Issuance Authority
432.	4770 April 2018	Narragansett Electric Co.	Rhode Island	Division Staff	Cost of Capital
433.	4800 June 2018	Suez Water	Rhode Island	Division Staff	Cost of Capital