ORIGINAL

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JACK SHREVE
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October 10, 2001

Ms. Blanca S. Bayó, Director
Division of the Commission Clerk
and Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0870

RE: Docket No. 010006-WS

Dear Ms. Bayó:

Enclosed are an original and fifteen copies of Rebuttal Testimony of Mark A. Cicchetti for filing in the above-referenced docket.

Also enclosed is a 3.5 inch diskette containing Rebuttal Testimony of Mark A. Cicchetti in WordPerfect for Windows 6.1. Please indicate receipt of filing by date-stamping the attached copy of this letter and returning it to this office. Thank you for your assistance in this matter.

Sincerely,

Stephen C. Burgess
Deputy Public Counsel

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Enclosures

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Water and Wastewater industry annual reestablishment of authorized range of return on common equity of water and wastewater utilities, pursuant to Section 367.081(4)(f), F.S. _____/	Docket No. 010006-WS Date Filed: October 10, 2001

REBUTTAL TESTIMONY

OF

MARK A. CICCHETTI

ON BEHALF OF

THE OFFICE OF PUBLIC COUNSEL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Water and Wastewater industry annual reestablishment of authorized range of return on common equity of water and wastewater utilities, pursuant to Section 367.081(4)(f), F.S.	**Docket No. 010006-WS** **Date Filed: October 10, 2001**

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DOCKET NO. 010006-WS

Q. Please state your name and address.

A. My name is Mark Anthony Cicchetti and my business address is 2931 Kerry Forest Parkway, Suite 202, Tallahassee, Florida 32309.

Q. Are you the same Mark Anthony Cicchetti who previously filed direct testimony in this proceeding?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to provide an evaluation of the analyses of Dr. Roger A. Morin and Mr. Pete Lester regarding the fair and reasonable rate of return on common equity which the Commission should base its leverage formula methodology for water and wastewater ("WAW") utilities in the State of Florida.

Q. Please summarize your rebuttal testimony.

A. Regarding Dr. Morin's testimony, the cost of common equity estimate he determined of 10.00% to 13.40% overstates the cost of common equity for use in the leverage formula for ratemaking purposes for a typical Florida WAW utility. Regarding Mr. Lester's testimony, it is my opinion that the adjustments incorporated in Commission Order No. PSC-01-1226-PAA-WS adequately address the risks associated with the size of the typical Florida WAW utility and a third adjustment related to size is unnecessary.

I. REBUTTAL OF DR. ROGER A. MORIN

Q. Dr. Morin claims he is presenting an "independent analysis" of the fair and reasonable rate of return on equity (Morin, Page 3, line 15). Do you agree?

A. No. Webster's Dictionary defines independent as: not subject to the control, influence, or determination of another; not depending on another for financial support; not subject to bias, persuasion, or influence (See Webster's New Twentieth Century Dictionary, Second-Edition). When a person is testifying on behalf of a party to an adversarial proceeding, that person, by definition, is not unbiased - particularly if that person is being paid by one of the adversaries in the adversarial proceeding.

Q. Dr. Morin relied on the actual yield on long-term Treasury bonds of 5.8% for use in his Capital Asset Pricing Model ("CAPM") risk premium approach and Risk Premium analyses (Morin, Page 20, line 13). What is the current yield on long-term Treasury bonds?

A. The current yield on long-term Treasury bonds is 5.3%. Consequently, using Dr.

Morin's own methodology, the results of his CAPM risk premium approach and Risk Premium analyses are overstated by 50 basis points.

Q. In his CAPM, Dr. Morin relied on a market risk premium of 7.8% which was based on the historical earned returns of a broad market sample of common stocks over the returns of long-term Treasury bonds (Morin, Page 24, line 17). Is it appropriate to rely on a risk premium analysis that uses earned returns rather than expected returns in determining risk premiums?

A. No. Required return is a function of expectations and not a function of ex post performance. Actual performance may deviate substantially from what was expected but it is expectations relative to requirements that determine if an investment should be made. Relying on earned returns in the ratemaking process as the basis for required returns can produce incorrect results. For example, just because a company had an earned return on equity of either 5% or 25% does not mean that the company's cost of equity was either 5% or 25%. Furhtermore, relying on earned returns as a proxy for required returns can produce nonsensical results. For example, Morin Exhibits RAM-2 and RAM-3 show annual equity risk premiums that range from negative 37.34% to positive 61.21%. The return to equity owners is a residual return (i.e., equity owners do not earn a return until the debt holders have been paid). Therefore, common equity is riskier than debt. It is illogical to think that in any year the cost of equity was 37.34% less than the cost of debt. If you use bad ingredients to bake a cake, you should not expect the result to be a good cake. Consistent with theory, I have never seen an appropriately derived risk premium analysis produce a cost of equity less than the relevant cost of debt.

Finally, in "The Risk Premium Approach to Measuring a Utility's Cost of Equity" (a Public Utility Research Center working paper written in August 1984), Brigham, Shome and Vinson state, "... we concluded that, for cost of capital estimation purposes, risk premiums must be based on expectations, not on past, realized holding period returns."

Q. In Dr. Morin's prospective approach to deriving the market risk premium for his CAPM analysis, he relied on a DCF analysis for the aggregate market that incorporated expected and historical growth in earnings as a proxy for the expected growth rate for dividends (Morin, Page 26, line 10). Is this appropriate?

A. No. It is inappropriate to rely on expected earnings growth as a proxy for expected dividend growth. The discounted cash flow (DCF) model is a dividend discounting model. According to DCF theory, the cost of equity is the discount rate (required rate) that equates the present value of the expected cash flows associated with a share of stock to the price of the stock. The cash flows expected to be received from a share of stock consist of expected dividends plus the price investors expect to receive when they sell the stock. The market price in any period (t) will equal the present value of the dividends and sales price expected after period (t). Applying this concept to all future sales prices, the current stock price can be shown to equal the present value of all dividends expected to be paid in the future, including any liquidating dividend. Therefore, expected dividend growth should be used when determining the cost of common equity using a DCF model.

The expected growth in earnings is not a valid proxy for the expected growth in dividends because all earnings are not paid out as dividends when they are earned. A

fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. This is because, if they had a dollar today, they could invest it in an interest earning account and increase their wealth. This principle is called the time value of money. Generally, utility companies increase dividends in a lock-step fashion and only when it is anticipated that a higher level of earnings can support a higher level of dividends. Not properly accounting for the timing and amount of expected cash flows when preparing a discounted cash flow analysis produces an incorrect result. Interestingly, Dr. Morin's direct testimony (Page 36, line 1 - Page 37, line 7) explains the relevance of dividends and expected dividend growth to DCF theory. However, when performing his analyses, Dr. Morin only refers to "growth" and incorporates earnings growth as the growth variable.

According to *Value Line*, the companies used by Dr. Morin in his DCF analyses expect higher growth in earnings relative to growth in dividends over the next five years. Therefore, because Dr. Morin relied on historical and expected earnings growth as a proxy for expected dividend growth, the dividend growth variable in Dr. Morin's DCF analysis is overstated. Consequently, his DCF determined cost of equity is overstated.

Q. Dr. Morin performed Risk Premium analyses for two groups of regulated utilities (Morin, Page 28, line 4). Did these analyses include the use of historical earned returns as a proxy for required returns based on expectations?

A. Yes, and for the reasons cited above regarding the inappropriateness of using ex post returns as a proxy for expectations, Dr. Morin's Risk premium analyses overstate the cost of equity for a typical Florida WAW utility.

Q. Dr. Morin stated that he adjusted his risk premium results to account for the fact that water and wastewater utilities are riskier than the other regulated industries (Morin, Page 30, line 7). Are water and wastewater utilities riskier than the other regulated utilities?

A. No. The water industry is more locally oriented than the other utility industries, there is no substitute for water, and technological breakthroughs are limited. Consequently, there is virtually no competition. As pointed out by Standard and Poor's in their recent paper on water and wastewater utilities, "Given the essentiality of the commodity provided--which allows for no substitutes, lower "fuel" and technological risks, and limited competition--Standard & Poor's considers water utilities to be the lowest-risk utility sector. As a consequence, financial ratios and flexibility can be lower for these entities, relative to like rated utilities in the gas or electric sector" (See Water and Wastewater Utilities, Projects, and Concessions, www.standardandpoors.com/Resource Center/RatingsCriteria). The lower "fuel" risk cited by Standard & Poor's refers to the fact that the most important input resource that must be purchased by the water industry - water - has less price variability, and therefore contributes less risk, than the risk the cost of fuel contributes to the energy industry.

Q. Dr. Morin performed a risk premium analysis to estimate a typical water and wastewater utility's cost of equity using returns allowed by regulatory commissions as the required return on equity (Morin, Page 33, line 7). Is this appropriate?

A. No. The required return on equity is a function of relevant risk. Using allowed returns to determine a utility's cost of equity is circular logic. If every regulatory commission relies on every other regulatory commission's allowed returns, which regulatory

commission has determined the appropriate required return based on relevant risk? Using returns allowed by other regulatory commissions as the required return for a regulated utility is simply a defective shortcut way to set an allowed return based on what "everybody else" is doing rather than logically evaluating expected cash flows and market prices.

Q. Dr. Morin performed DCF analyses for three groups of regulated utilities (Morin, Exhibit RAM-4, RAM-5, RAM-6). Did these analyses rely on historical and projected earnings growth as a proxy for expected dividend growth?

A. Yes, and for the reasons cited above regarding the inappropriateness of using earnings growth, historical or projected, as a proxy for expected dividend growth, Dr. Morin's DCF analyses overstate the cost of equity for a typical Florida WAW utility.

Q. As an alternative to the leverage formula, Dr. Morin proposes that the Commission determine the allowed return for the various Florida WAW utilities using his range of returns on common equity with an adjustment for differences in leverage between a particular WAW utility and the group of utilities used in determining the Commission's leverage formula (Morin, Page 49, line 7). Should the Commission adopt this approach?

A. No. For the reasons stated above, Dr. Morin's range of returns on common equity for use in the leverage formula are overstated. Additionally, with regard to the adjustment for leverage, Dr. Morin claims that empirical studies indicate that when the debt ratio increases from 40% to 50% equity costs increase from a low of 34 basis points to a high of 237 basis points. However, Dr. Morin has not cited any of these studies and no

evidence is provided indicating the types of companies analyzed, the assumptions underlying the analyses, or the analyses relevance to Florida regulated WAW utilities. Therefore, the Commission should not adopt this approach.

Q. Regarding the relative investment risks of the water and electric and gas industries, Dr. Morin claims the investor-owned water utilities are much more dependent on external financing than are gas and electric utilities (Morin, Page 55, line 15). Do you agree?

A. No. I believe Dr. Morin's claim is misleading. The amount of funds generated in the external market by gas and electric utilities in this state dwarfs the amount of funds generated in the external market by the water and wastewater industry regulated by the Commission. As pointed out by Dr. Morin (Morin, Page 53, line 19), Florida WAW have a significantly large portion of contributed property compared to net plant. The purpose of having a policy that recommends a high proportion of contributed property is to reduce the risks and pressures associated with having to tap the external market for financing. Dr. Morin claims that having a high percentage of contributed property makes Florida WAW utilities riskier (Morin, Page 53, line 19). However, Florida WAW utilities would have to raise substantial amounts of funds if contributed funds were not available to them. Not having to raise substantial amounts of funds tends to lower risk. In fact, many electric utilities go to great lengths to avoid having to tap the external market to finance power plants. Furthermore, many small Florida WAW utilities are severely undercapitalized. As shown on Mr. Lester's Exhibits PL-11 and PL-12, 55 of 148 water systems and 41 of 118 wastewater systems have no equity capital. These firms have chosen to be inadequately capitalized. In Florida, and nationwide, many small water and wastewater systems are developer related and, for a variety of reasons, the owners of

these systems have chosen not to avail themselves of the tools the regulatory commissions place at their disposal to produce compensatory rates and increase internally generated funds.

The Commission's leverage formula is available to companies that want to avoid the expense of providing cost of equity testimony. Companies are not required to rely on the leverage formula and can present testimony if they have circumstances they believe are not accounted for by the leverage formula. In my opinion, the Commission should not gear the leverage formula to reflect conditions of the worst firms or of firms that have chosen, for whatever reason, not to avail themselves of the tools available to recover costs including a return on invested capital. Many practices of the Commission, such as pass-throughs for certain costs such as purchased water, purchased power, purchased water treatment, etc., adjustments to rates to recognize increases in inflation, staff-assisted rate cases, recognizing reuse facilities as 100% used and useful, allowances for funds prudently invested, and the use of the leverage formula lower the business risk of Florida WAW utilities relative to those nationwide and facilitate the ability to earn compensatory rates.

Q. Dr. Morin states there are five formal relationships linking the cost of equity to leverage (Morin, Page 62, line 17) and recommends the Commission average the results of all five frameworks as a way to reconcile discrepancies between the various conceptual approaches. Do you agree with Dr. Morin's recommendation?

A. No. Prior to recommending the leverage formula for use by the Commission, the staff of the Commission thoroughly analyzed the relevant theories related to the effects of

leverage on the cost of equity. The theoretical hypotheses related to leverage and equity cost are generally classified as: 1) classic Modigliani-Miller ("MM"), 2.) extensions of MM, and 3.) adaptations designed to account for regulation. Classic MM (see Modigliani and Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment, " *American Economic Review*, Vol. 48 (September 1958), pp. 655-669) which is based on certain limiting assumptions, postulates that the cost of common equity increases with the use of leverage but the increase in the required return on equity resulting from the use of leverage is completely offset by the advantage of the increased use of lower cost debt. Miller (see Miller, "Debt and Taxes," *Journal of Finance*, Vol. 32 (May 1977), pp. 261-276) relaxed certain assumptions related to corporate and personal taxes included in the original MM work but did not incorporate the impacts associated with regulation. Subsequently, others (for example, see Gordon, "Some Estimates of the Cost of Capital to the Electric Utility Industry, 1954-57: Comment," American Economic Review, Vol. 57 (December 1967), pp. 1267-1277, Gordon and McCallum, "Valuation and the Cost of Capital for Regulated Utilities: Comment," *Journal of Finance*, Vol. 27 (December 1972), pp.1145-1146, and Jaffe and Mandelker, "The Value of the Firm under Regulation," *Journal of Finance*, Vol. 31 (May 1976), pp. 701-713) analyzed the relationship of leverage and the cost of common equity incorporating the impacts of regulation. Variables that were examined included the regulatory treatment of taxes and the relationship between demand and demand variability. The results of the various studies indicate that different economists arrive at different conclusions (what a surprise!) as to the specific impacts leverage has on the cost of common equity when the limiting assumptions included in the classic MM work are relaxed. In my opinion, the works that incorporate the impacts of regulation arrive at, essentially, the conclusions reached in the original MM work which is the basis of the leverage formula as used by the Commission.

In 1986, the Commission requested the University of Florida Public Utility Research Center study the effects of capital structure on utilities' costs of capital and revenue requirements. Regarding the relationship between financial leverage and the cost of equity, Dr. Brigham, et. al., concluded:

In summary, finance theory provides many different hypotheses regarding the relationship between equity costs and leverage. The exact specifications of the relationship depends on the underlying assumptions. However, we have no way of knowing which set of assumptions is most correct, or indeed if any set of assumptions is good enough to form the basis for practical decisions. (See *Effects of Capital Structure on Utilities' Costs of Capital and Revenue Requirements,* 1986, Brigham, Gapenski, and Aberwald, Public Utility Research Center, University of Florida)

In my opinion, it would inappropriate to average the five hypotheses cited by Dr. Morin and use the result in the leverage formula. Because some of the hypotheses do not account for the impacts of regulation, the legitimacy of the result would be compromised.

II. REBUTTAL OF MR. PETE LESTER

Q. In his CAPM analysis, Mr. Lester estimated the market return by applying a DCF equation that incorporated the average of expected earnings growth and expected dividend growth as a proxy for expected dividend growth. Is this appropriate?

A. No. It is not appropriate for the reasons cited in my rebuttal to Dr. Morin's testimony regarding the use of earnings growth as a proxy for dividend growth. It is interesting to

note, Mr. Lester used only expected dividend growth, and did not include expected earnings growth, in his straight DCF analysis.

Q. Mr. Lester recommends the Commission make a third adjustment, in addition to those allowed by the Commission in Order No. PSC-01-1226-PAA-WS, to compensate for risks associated with small-size (Lester, Page 23, line 9). Do you believe this is necessary?

A. No. The Commission, in Order No. PSC-01-1226-PAA-WS, allowed two adjustments - which increased the cost of equity by 91 basis points - to compensate for risks associated with the small size of the typical Florida WAW utility. Mr. Lester recommends adding an additional 50 basis points to "recognize the financial stress, and hence risk, that small water and wastewater systems can experience" (Lester, Page 24, line 10).

Historically, Florida WAW utilities have been characterized as small (Class C), medium (Class B), and large (Class A) based on revenues. Typically, small firms have under $200,000 in revenue, medium sized firms have between $200,000 and $1,000,000 in revenue and large firms have over $1,000,000 in revenue. As shown on Lester Exhibit PL-8, large Florida WAW firms (over $1,000,000 in revenue) collect more than 2 times the revenue that the smaller firms, combined, collect. Assuming the number of customers correlates to the amount of revenues collected, there are more than twice the number of customers in Florida, under the Commission's jurisdiction, being served by large WAW utilities versus small WAW utilities.

In Order No. PSC-01-1226-PAA-WS, the Commission assumed a bond rating of Baa3 as

the cost of debt, the lowest investment grade rating, added a 41 basis point premium to the cost of equity - based on the difference between the comparable firms used to calculate the cost of equity and a Baa3 rating - and added an additional 50 basis points as a private placement premium to compensate for the higher financing costs associated with private placements. These adjustments apply to the cost of equity for all firms that use the leverage formula, small and large alike, and are in addition to the recovery of the actual cost of debt. Although many Florida WAW utilities are small, they are still regulated entities and have lower risk than similar non-regulated entities. Many small firms rely on bank loans versus bond issues or private placements because the investment banking costs (analysis costs, etc.) are not justified for small borrowings. Many small companies are actually better off dealing with the banks. I believe it is reasonable to assume, for the purposes of the leverage formula, that a well-managed, prudently operated Commission regulated WAW utility would meet the financial criteria necessary for an investment grade rating and the ability of a Commission regulated WAW utiltiy to pay its' debts should not be considered "uncertain." Consequently, I believe the Commission, in Order No. PSC-01-1226-PAA-WS adequately addressed the additional risks associated with size and no additional adjustments are necessary.

Q. Does this conclude your rebuttal testimony?

A. Yes.

CERTIFICATE OF SERVICE
DOCKET NO. 010006-WS

I HEREBY CERTIFY that a true and exact copy of the above and foregoing REBUTTAL TESTIMONY OF MARK A CICCHETTI has been furnished by hand-delivery* or U.S. Mail to the following parties of record this 10th day of October, 2001.

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