

State of Florida



## Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

**-M-E-M-O-R-A-N-D-U-M-**

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**DATE:** May 10, 2007

**TO:** Office of Commission Clerk (Cole)

**FROM:** Division of Economic Regulation (Springer)  
Office of the General Counsel (Jaeger)

**RE:** Docket No. 070006-WS – Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.

**AGENDA:** 05/22/07 – Regular Agenda – Proposed Agency Action - Interested Persons May Participate

**COMMISSIONERS ASSIGNED:** All Commissioners

**PREHEARING OFFICER:** Argenziano

**CRITICAL DATES:** 12/30/07 – Pursuant to Section 367.081(4)(f), Florida Statutes

**SPECIAL INSTRUCTIONS:** None

**FILE NAME AND LOCATION:** S:\PSC\ECR\WP\070006.rcm.doc

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### **Case Background**

Section 367.081(4)(f), Florida Statutes, authorizes the Commission to establish, not less than once each year, a leverage formula to calculate a reasonable range of returns on equity for water and wastewater (WAW) utilities. In Docket No. 060006-WS, the Commission established the current leverage formula by Order No. PSC-06-0476-PAA-WS, issued June 5, 2006.

This staff recommendation utilizes the current leverage formula methodology established in Order No. PSC-01-2514-FOF-WS, issued December 24, 2001, in Docket No. 010006-WS. Since then, the Commission has used this methodology in establishing the leverage formula.

This methodology uses returns on equity from financial models based upon an index of natural gas utilities. In establishing the methodology, the Commission found that relatively few WAW utilities have actively traded stocks. Furthermore, the available WAW utilities were heavily influenced by regulation in one state – California – and by merger activity. Therefore, the Commission has used natural gas utilities as the proxy companies for the leverage formula. There are many natural gas utilities that have actively traded stocks and forecasted financial data. Staff used natural gas utilities that derive at least 60% of their revenue from regulated rates. These utilities have market power and are influenced significantly by economic regulation. As explained in the body of this recommendation, the model results based on natural gas utilities are adjusted to reflect the risks faced by Florida WAW utilities.

Jurisdiction over this matter is vested in the Commission by Section 367.081(4)(f), Florida Statutes.

### **Discussion of Issues**

**Issue 1:** What is the appropriate range of returns on common equity for water and wastewater (WAW) utilities pursuant to Section 367.081(4)(f), Florida Statutes?

**Recommendation:** Based on updated financial data, staff recommends that the appropriate range of returns on common equity for water and wastewater (WAW) utilities is 9.07% @ 100% equity to 12.01% @ 40% equity. The range is based on the following leverage formula:

$$\text{Return on Common Equity} = 7.10\% + 1.961/\text{Equity Ratio}$$

Where the Equity Ratio equals:

Common Equity / (Common Equity + Preferred Equity + Long-Term and Short-Term Debt)  
(Springer)

**Staff Analysis:** Section 367.081(4)(f), Florida Statutes, authorizes the Commission to establish a leverage formula to calculate a reasonable range of returns on equity for WAW utilities. The Commission must establish this leverage formula not less than once a year.

Staff notes that the leverage formula depends on four basic assumptions:

- 1) Business risk is similar for all WAW utilities;
- 2) The cost of equity is an exponential function of the equity ratio;
- 3) The marginal weighted average cost of investor capital is constant over the equity ratio range of 40% to 100%; and
- 4) The debt cost rate at an assumed Moody's Baa3 bond rating, plus a 50 basis point private placement premium and a 50 basis point small utility risk premium, represents the average marginal cost of debt to a Florida WAW utility over an equity ratio range of 40% to 100%.

For these reasons, the leverage formula is assumed to be appropriate for the average Florida WAW utility.

The leverage formula relies on two return on equity (ROE) models. Staff adjusted the results of these models to reflect differences in risk and debt cost between the index of companies used in the models and the average Florida WAW utility. Both models include a four percent adjustment for flotation costs. The models are as follows:

- A Discounted Cash Flow (DCF) model applied to an index of natural gas utilities (NG) that have publicly traded stock and are followed by the Value Line Investment Survey (Value Line). This DCF model is an annual model and uses prospective growth rates. The index consists of 9 companies that derive at least 60% of their total revenue from gas distribution service. These companies have a median Standard and Poor's bond rating of A-.

- A Capital Asset Pricing Model (CAPM) using a market return for companies followed by Value Line, the average yield on the Treasury's long-term bonds projected by the Blue Chip Financial Forecasts, and the average beta for the index of NG utilities. The market return for the 2007 leverage formula was calculated using a quarterly DCF model.

Staff averaged the indicated returns of the above models and adjusted the result as follows:

- A bond yield differential of 42 basis points is added to reflect the difference in yields between an A/A2 rated bond, which is the median bond rating for the NG utility index, and a BBB-/Baa3 rated bond. Florida WAW utilities are assumed to be comparable to companies with the lowest investment grade bond rating, which is Baa3. This adjustment compensates for the difference between the credit quality of "A" rated debt and the credit quality of the minimum investment grade rating.
- A private placement premium of 50 basis points is added to reflect the difference in yields on publicly traded debt and privately placed debt, which is illiquid. Investors require a premium for the lack of liquidity of privately placed debt.
- A small utility risk premium of 50 basis points is added because the average Florida WAW utility is too small to qualify for privately placed debt.

After the above adjustments, the resulting cost of equity estimate is included in the average capital structure for the NG utilities. The cost of equity is determined at a 40% equity ratio and the leverage formula is derived. The derivation of the recommended leverage formula using the current methodology with updated financial data is presented in Attachment 1.

Staff recommends that the Commission cap returns on common equity at 12.01% for all water and wastewater utilities with equity ratios less than 40%. Staff believes that this will discourage imprudent financial risk. This cap is consistent with the methodology in Order No. PSC-01-2514-FOF-WS.

**Issue 2**: Should the Commission close this docket?

**Recommendation**: No. Upon expiration of the protest period, if a timely protest is not received from a substantially affected person, the decision should become final and effective upon the issuance of a Consummating Order. However, this docket should remain open to allow staff to monitor changes in capital market conditions and to readdress the reasonableness of the leverage formula as conditions warrant. (Jaeger, Springer)

**Staff Analysis**: Upon expiration of the protest period, if a timely protest is not received from a substantially affected person, the decision should become final and effective upon the issuance of a Consummating Order. However, this docket should remain open to allow staff to monitor changes in capital market conditions and to readdress the reasonableness of the leverage formula as conditions warrant.

SUMMARY OF RESULTS

Leverage Formula Update

	<u>Updated Results</u>	<u>Currently in Effect</u>
(A) CAPM ROE for Natural Gas Index	10.98%	10.92%
(B) DCF ROE for Natural Gas Index	<u>8.89%</u>	<u>8.74%</u>
AVERAGE	9.93%	9.83%
Bond Yield Differential	0.42%	0.43%
Private Placement Premium	0.50%	0.50%
Small-Utility Risk Premium	0.50%	0.50%
Adjustment to Reflect Required Equity		
Return at a 40% Equity Ratio	<u>0.66%</u>	<u>0.28%</u>
Cost of Equity for Average Florida WAW		
Utility at a 40% Equity Ratio	<u>12.01%</u>	<u>11.54%</u>

2006 Leverage Formula (Currently in Effect)

Return on Common Equity =	7.26% + 1.714/ER
Range of Returns on Equity =	8.97% - 11.54%

2007 Leverage Formula (Recommended)

Return on Common Equity =	7.10% + 1.961/ER
Range of Returns on Equity =	9.07% - 12.01%

Marginal Cost of Investor Capital  
Average Water and Wastewater Utility

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>	<u>Weighted Marginal Cost Rate</u>
Common Equity	46.20%	11.35%	5.25%
Total Debt	<u>53.80%</u>	7.10% *	<u>3.82%</u>
	100.00%		9.07%

A 40% equity ratio is the floor for calculating the required return on common equity. The return on equity at a 40% equity ratio is  $7.10\% + 1.961/.40 = 12.01\%$

Marginal Cost of Investor Capital  
Average Water & Wastewater Utility at 40% Equity Ratio

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>	<u>Weighted Marginal Cost Rate</u>
Common Equity	40.00%	12.01%	4.80%
Total Debt	<u>60.00%</u>	7.10% *	<u>4.26%</u>
	100.00%		9.07%

Where: ER = Equity Ratio = Common Equity/(Common Equity + Preferred Equity + Long-Term Debt + Short-Term Debt)

\* Assumed Baa3 rate for March 2007 plus a 50 basis point private placement premium and a 50 basis point small utility risk premium.

Sources: Moody's Credit Perspectives and Value Line Selection and Opinion

ANNUAL DISCOUNTED CASH FLOW MODEL

INDEX	NATURAL GAS INDEX									MARCH		
	DIV0	DIV1	DIV2	DIV3	DIV4	EPS4	ROE4	GR1-4	GR4+	HI-PR	LO-PR	AVER-PR
COMPANY												
AGL RESOURCES	1.64	1.64	1.69	1.75	1.80	3.10	14.00	1.0315	1.0587	42.99	39.62	41.305
CASCADE NAT. GAS	0.96	0.96	0.97	0.97	0.98	1.40	8.50	1.0069	1.0255	26.42	25.94	26.180
EQUITABLE RESOURCES, INC.	0.91	0.95	0.98	1.00	1.03	2.90	18.00	1.0273	1.1161	50.50	41.19	45.845
KEYSPAN CORP.	1.91	1.95	2.02	2.09	2.16	2.80	8.50	1.0347	1.0194	41.38	40.40	40.890
NICOR INC.	1.90	1.90	1.93	1.97	2.00	2.90	12.00	1.0172	1.0372	49.76	44.76	47.260
NORTHWEST NAT. GAS	1.44	1.50	1.59	1.69	1.80	2.95	12.00	1.0627	1.0468	46.34	42.47	44.405
PIEDMONT NAT. GAS	0.99	1.03	1.07	1.11	1.15	1.55	11.50	1.0374	1.0297	27.31	24.33	25.820
SOUTH JERSEY INDUSTRIES, INC.	0.98	1.05	1.10	1.15	1.20	3.30	17.50	1.0455	1.1114	38.56	33.02	35.790
SOUTHWEST GAS CORP.	0.86	0.86	0.87	0.89	0.90	2.60	10.00	1.0153	1.0654	39.40	35.30	37.350
AVERAGE	1.2878	1.3156	1.3576	1.4012	1.4467	2.6111	12.4444	1.0309	1.0567			38.316

VALUE LINE ISSUE: Ed. 3, March 16, 2007

S&P STOCK GUIDE: APRIL 2007 with MARCH Stock Prices

Stock Price w/four Percent Flotation Costs	<b>\$ 36.78</b>		Annual	<b>8.89%</b>	ROE
Cash Flows	1.1890	1.1184	1.0600	1.0048	0.9585
Present Value of Cash Flows	36.7835				

NOTE: The cash flows for this multi-stage DCF Model are derived using the average forecasted dividends and the near term and long term growth rates. The discount rate, 8.89%, equates the cash flows with the average stock price less flotation cost.

\$36.78 = March 2007 average stock price with a 4% flotation cost.

8.89% = Cost of equity required to match the current stock price with the expected cash flows.

Sources:

1. Stock Prices - S&P Stock Guide, April 2007 Edition.
2. DPS, EPS, ROE - Value Line Edition 3, March 16, 2007.



Capital Asset Pricing Model Cost of Equity for  
Water and Wastewater Industry

CAPM analysis formula

$$K = RF + \text{Beta}(\text{MR} - \text{RF})$$

K = Investor's required rate of return

RF = Risk-free rate (Blue Chip forecast for Long-term Treasury bond, April 1, 2007)

Beta = Measure of industry-specific risk (Average for water utilities followed by Value Line)

MR = Market return (Value Line Investment Survey For Windows, April 2007)

$$\underline{10.98\%} = 4.96\% + 0.87(11.63\% - 4.96\%) + 0.20\%$$

Note: Staff calculated the market return using a quarterly DCF model for a large number of dividend paying stocks followed by Value Line. For March 2007, the result was 11.63%. Staff also added 20 basis points to the CAPM result to allow for a four-percent flotation cost.

BOND YIELD DIFFERENTIALS									
Public Utility Long Term Bond Yield Averages									
120 Month Average Spread		0.1043		0.1043		0.1043		0.1043	
MONTH/YEAR	A2	SPREAD	A3	SPREAD	Baa1	SPREAD	Baa2	SPREAD	Baa3
Mar-07	5.82	0.06	5.88	0.06	5.94	0.06	6.00	0.06	6.06
Sources: Moody's Credit Perspectives and Value Line Selection and Opinion									

## INDEX STATISTICS AND FACTS

<u>Natural Gas Distribution Proxy Group</u>	<u>S &amp; P Bond Rating</u>	<u>% of Gas Revenue</u>	<u>V/L Market Capital (millions)</u>	<u>Equity Ratio</u>	<u>Value Line Beta</u>
AGL Resources	A-	61%	3,376.52	42.68%	0.95
Cascade Natural Gas	BBB+	100%	301.23	43.36%	0.85
Equitable Resources, Inc.	A-	75%	6,075.29	51.27%	0.80
KeySpan Corp.	A+	71%	7,249.78	50.07%	0.85
NICOR Inc.	AA	86%	2,300.72	50.71%	1.30
Northwest Nat. Gas	AA-	99%	1,246.96	48.11%	0.75
Piedmont Natural Gas	A	82%	1,983.96	46.31%	0.80
South Jersey Industries, Inc.	A	67%	1,103.52	44.39%	0.70
Southwest Gas Corporation	BBB-	85%	1,578.81	38.93%	0.85
Average:				46.20%	0.87
Sources:					

Value Line Investment Survey for Windows, April 2007

S.E.C. Forms 10Q and 10K for Companies

AUS Utility Report, March 2007