RECEIVED

2003 MAY -2 AM 10: 37

T.R.A. DOCKET ROOM

PAUL G. SUMMERS
ATTORNEY GENERAL AND REPORTER

ANDY D. BENNETT
CHIEF DEPUTY ATTORNEY GENERAL

LUCY HONEY HAYNES
ASSOCIATE CHIEF DEPUTY
ATTORNEY GENERAL

MAILING ADDRESS

P.O. BOX 20207
NASHVILLE, TN 37202

MICHAEL E. MOORE
SOLICITOR GENERAL

CORDELL HULL AND JOHN SEVIER
STATE OFFICE BUILDINGS

TELEPHONE 615-741-3491
FACSIMILE 615-741-2009

Reply to:
Consumer Advocate and Protection Division
Post Office Box 20207
Nashville, TN 37202

May 2, 2003

Honorable Sara Kyle
Chairman
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243

>   **RE: In Re: Petition of Tennessee American Water Company to Change and**
>   **Increase Certain Rates and Charges So As to Permit it to Earn a Fair and**
>   **Adequate Rate of Return on Its Property Used and Useful in Furnishing**
>   **Water Service to Its Customers**
>   **Docket No. 03-00118**

Dear Chairman Kyle:

        Enclosed is an original and thirteen copies of Additional Responses by the Consumer Advocate and Protection Division of the Office of the Attorney General to Tennessee-American Water Company's Initial Request for Discovery in Light of the Order on the Motion to Compel Dated April 25, 2003. Kindly file same in this docket. Copies are being sent to all parties of record. If you have any questions, kindly contact me at (615) 532-3382. Thank you.

                                Sincerely,

                                Shilina B. Chatterjee
                                Assistant Attorney General

Enclosures
cc: T.G. Pappas, Esq.
        Dale Grimes, Esq.

64720

IN THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

IN RE:	)	
	)	
PETITION OF TENNESSEE-	)	DOCKET NO. 03-00118
AMERICAN WATER COMPANY TO	)	
CHANGE AND INCREASE CERTAIN	)	
RATES AND CHARGES SO AS TO	)	
PERMIT IT TO EARN A FAIR AND	)	
ADEQUATE RATE OF RETURN ON	)	
ITS PROPERTY USED AND USEFUL IN	)	
FURNISHING WATER SERVICE TO	)	
ITS CUSTOMERS	)	
	)	

ADDITIONAL RESPONSES BY THE CONSUMER ADVOCATE AND PROTECTION DIVISION OF THE OFFICE OF THE ATTORNEY GENERAL TO TENNESSEE-AMERICAN WATER COMPANY'S INITIAL REQUEST FOR DISCOVERY IN LIGHT OF THE ORDER ON THE MOTION TO COMPEL DATED APRIL 25, 2003

Comes Paul G. Summers, the Attorney General and Reporter, through the Consumer Advocate and Protection Division of the Office of Attorney General (hereinafter "CAPD" or "Consumer Advocate") and hereby responds to the discovery requests propounded upon the Consumer Advocate by Tennessee-American Water Company ("TAWC" or "Tennessee-American Water") in light of the Order Granting Motions to Compel in Part and Denying in Part (April 25, 2003).

As set forth in the procedural schedule, the CAPD filed its objections separately from its responses to TAWC's Initial Request for Discovery. Although the CAPD objected to TAWC's requests in good faith, in the spirit of cooperation, the CAPD provided responses to every request. Upon reviewing its responses, the CAPD believes that its previously filed responses are adequate

in light of Director Jones' Order Granting Motions to Compel in Part and Denying in Part (April 25, 2003).

The CAPD, however, does have certain supplemental responses it wishes to make at this time:

DISCOVERY REQUEST NO. 1:

State in detail the legal and factual basis for any objection or opposition CAPD has with respect to any aspect of the rate increase requested by TAWC in this docket.

SUPPLEMENTAL RESPONSE NO. 1:

TAWC's requested rate of return on equity appears to lack support because the company, an enterprise engaged strictly in the business of water supply, bases its request on the gas companies and several other enterprises that do not supply water; TAWC's requested rate of return on debt appears to lack support because TAWC, clearly a subsidiary, has not supplied the debt cost of the parent company; TAWC's cost-of-service study appears to lack support because TAWC, in response to CAPD Request No. 62, has indicated that it has made no effort to measure any revenue class's demand on the system's capacity:

> "There were no statistical sampling procedures used to develop allocation factors. The class demand factors were based on judgment..."

TAWC's test year and attrition period expenses and revenues still appear to lack support.

DISCOVERY REQUEST NO. 2:

Identify each person whom you expect to call as an expert witness at any hearing in this docket, and for each such expert witness:

(a)   identify the field in which the witness is to be offered as an expert;

(b)   provide complete background information, including the expert's current employer as well as his or her educational, professional and employment history, and qualifications within the field in which the witness is expected to testify, and identify all publications written or presentations presented in whole or in part by the witness;

(c)   provide the grounds (including without limitation any factual bases) for the opinions to which the witness is expected to testify, and provide a summary of the grounds for each such opinion;

(d)   identify any matter in which the expert has testified (through deposition or otherwise) by specifying the name, docket number and forum of each case, the dates of the prior testimony and the subject of the prior testimony, and identify the transcripts of any such testimony;

(e)   identify for each such expert any person whom the expert consulted or otherwise communicated with in connection with his expected testimony;

(f)   identify the terms of the retention or engagement of each expert including but not limited to the terms of any retention or engagement letters or agreements relating to his/her engagement, testimony and opinions;

(g)   identify all documents or things shown to, delivered to, received from, relied upon, or prepared by any expert witness, which are related to the witness(es)' expected testimony, including without limitation all documents or things provided to that expert for review in connection with testimony and opinions; and

(h)   identify any exhibits to be used as a summary of or support for the testimony or opinions provided by the expert.

SUPPLEMENTAL RESPONSE NO. 2:

(b)   updated resume of Michael D. Chrysler

(g)   Dr. Stephen Brown may refer to an article entitled "On the Assessment of Risk," <u>The Journal of Finance</u>, March 1971, No. 1. (attached).
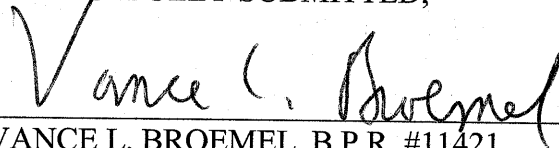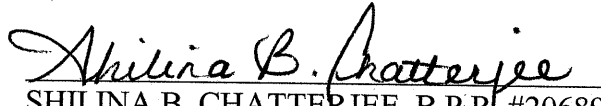
DISCOVERY REQUEST NO. 8:

Please produce a copy of all articles, journals, books or speeches written by or co-written by any of CAPD's expert witnesses, whether published or not.

SUPPLEMENTAL RESPONSE NO. 8:

Further documents authored by Dr. Stephen Brown are available for review at the offices of the CAPD.

RESPECTFULLY SUBMITTED,

Vance L. Broemel

VANCE L. BROEMEL, B.P.R. #11421
Assistant Attorney General
Office of the Attorney General
Consumer Advocate and Protection Division
(615) 741-8733

Shilina B. Chatterjee

SHILINA B. CHATTERJEE, B.P.R. #20689
Assistant Attorney General
Office of the Attorney General
Consumer Advocate and Protection Division
P.O. Box 20207
Nashville, Tennessee 37202
(615) 532-3382

Dated: April 16, 2003
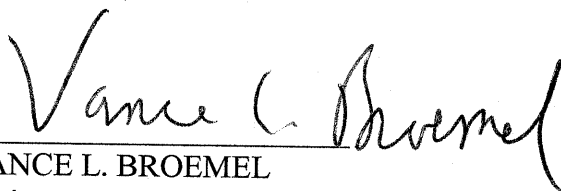
CERTIFICATE OF SERVICE

I hereby certify that a true and exact copy of the foregoing has been forwarded by first-class mail, postage prepaid, to the following:

R. Dale Grimes, Esq.
Bass, Berry & Sims, PLC
Amsouth Center
315 Deaderick Street, Suite 2700
Nashville, TN 37238-3001

Michael A. McMahan, Esq.
Phillip A. Noblett, Esq.
Lawrence W. Kelly, Esq.
Nelson, McMahan & Noblett
801 Broad Street, Suite 400
Chattanooga, TN 37402

Henry M. Walker, Esq.
Boult, Cummings, Conners & Berry, PLC
414 Union Street, Suite 1600
Nashville, TN 37219

David C. Higney, Esq.
Grant, Konvalinka & Harrison, P.C.
633 Chestnut Street, 9th Floor
Chattanooga, TN 37450

_____
VANCE L. BROEMEL
Assistant Attorney General

64684

Michael D. Chrysler
P.O. Box 20207
Nashville, Tennessee 37202
Telephone: (615)741-8726
Facsimile: (615) 532-2910
E-Mail: Michael.Chrysler@state.tn.us

Education:
Bachelor of Business Administration (Accounting)
Ft. Lauderdale University, 1970

TN AG (Consumer Advocate & Protection Division)   1998-Present

Provided analysis in Energy and Water issues, rate cases as assigned
Active in analysis related to Consumer Protection telephone issues
Testified in Docket No. 02-00383 Petition of Chattanooga Gas Company For Approval
of Change in Purchased Gas Adjustment

Northern Indiana Public Service Company (NISOURCE)   1973-1997

Principal of Electric Business Planning: Electric Business Planning Department (1990-1997)
Coordinated $147 million Capital, $101 million Expense, and $789 million Margin budget development
of The Electric Business, with subsequent monthly/quarterly explanation of variances reported to Senior
Management.
- Provided consulting assistance to station/district planners for proper explanation of their Capital
  & Expense variances to Senior Management, then summarized for reporting.
- Assisted with O&M and Capital Budget ABM training (budget development and data entry in
  budgeting system); plus proper development of budgets for presentation and approval.
- Provided Electric Margin variance analysis by class on a monthly/quarterly basis to Senior
  Management.
- Developed a sophisticated computer model for the Director of Electric Production in Microsoft
  Excel, providing "what if" analysis along with historical data to reach a goal of $16 per megawatt
  hour generation cost goal.
- Assisted the Vice President and General Manager, Electric Business in the development of
  written speeches as well as corresponding presentation slides.

Senior Consultant: Corporate Consulting Services (1989-1990)
Responsible for providing expertise and assistance to various departments within the company, including
training of management personnel on various productivity seminars and software programs.
- Researched "under-billing" of NIPSCO gas customers due to the variable of
  "Supercompressibility." Quantified over $200,000 of annual under-billing for the gas metering
  department.
- Interview NIPSCO management personnel to ensure compliance with "Automatic Time

Reporting" program for Human Resources Department.

Senior Strategic Planning Analyst: Corporate Strategic Planning Department (1985-1989)
Responsible for providing top-down, bottom-up communication of the Corporate Strategic Plan to all management levels.
*   Assisted in the development, coordination of data and reporting of meaningful performance measures to Senior Management for each business unit.
*   Assisted management employees with the training classes "Business Strategies" and "Operations Strategies.' This assistance included ensuring appropriate workbase study, drafting of the company strategic plan, involvement and understanding of principles and strategies in making business decisions to be entered in case studies and computer simulations.

Senior Rate Analyst: Rate and Contract Department (1978-1985)
Responsible for supporting rate case development, and associated work papers and supporting materials for Case-In-Chief. Provided tracking updates, reflecting modification to rate filings until subsequent filing.
*   Billed large industrial gas and electric customers during union contract negotiations (approximately 60% of company revenue). Customers included U.S. Steel, Inland and Bethleham Steel.
*   Assisted in the preparation of testimony and exhibits for regulatory hearings.

Junior Accountant: Customer Accounting Department (1973-1978)
Responsible for communicating corporate billing and office procedures to district commercial offices. Provided special data analysis regarding billing to corporate accounting.
*   Provided vacation relief for district office managers. These responsibilities included supervision of meter readers, application credit, billing and cash representatives.
*   Calculated source reports and reported to Accounting Department including gas cost, fuel cost,
*   purchase power adjustment and other revenue amounts on a monthly basis.

64158

ON THE ASSESSMENT OF RISK

MARSHALL E. BLUME*

INTRODUCTION

THE CONCEPT OF RISK has so permeated the financial community that no one needs to be convinced of the necessity of including risk in investment analysis. Still of controversy is what constitutes risk and how it should be measured. This paper examines the statistical properties of one measure of risk which has had wide acceptance in the academic community: namely the coefficient of non-diversifiable risk or more simply the beta coefficient in the market model.

The next section defines this beta coefficient and presents a brief non-rigorous justification of its use as a measure of risk. After discussing the sample and its basic properties in Section III, Section IV examines the stationarity of this beta coefficient over time and proposes a method of obtaining improved assessments of this measure of risk.

II. THE RATIONALE OF BETA AS A MEASURE OF RISK

The interpretation of the beta coefficient as a measure of risk rests upon the empirical validity of the market model. This model asserts that the return from time (t-1) to t on asset i, $\tilde{R}_{it}$,[1] is a linear function of a market factor common to all assets $\tilde{M}_t$, and independent factors unique to asset i, $\tilde{\varepsilon}_{it}$.

Symbolically, this relationship takes the form

$$\tilde{R}_{it} = \alpha_i + \beta_i \tilde{M}_t + \tilde{\varepsilon}_{it}, \tag{1}$$

where the tilde indicates a random variable, α_i is a parameter whose value is such that the expected value of $\tilde{\varepsilon}_{it}$ is zero, and β_i is a parameter appropriate to asset i.[2] That the random variables $\tilde{\varepsilon}_{it}$ are assumed to be independent and

---

* University of Pennsylvania.

1. In this paper, return will be measured as the ratio of the value of the investment at time t with dividends reinvested to the value of the investment at time (t-1). Dividends are assumed reinvested at time t.

2. The parameter β_i is defined as Cov $(\tilde{R}_i, \tilde{M})$/Var $(\tilde{M})$.

measure for the same portfolio estimated in the next period.[20] The risk measure calculated using the earlier data might be regarded as an individual's assessment of the future risk, and the measure calculated using the later data can be regarded as the realized risk. Thus, these correlation coefficients can be interpreted as a measure of the accuracy of one's assessments, which in this case are simple extrapolations of historical data.

TABLE 2

PRODUCT MOMENT AND RANK ORDER CORRELATION COEFFICIENTS
OF BETAS FOR PORTFOLIOS OF N SECURITIES

Number of Securities per Portfolio	7/26-6/33 and 7/33-6/40		7/33-6/40 and 7/40-6/47		7/40-6/47 and 7/47-6/54		7/47-6/54 and 7/54-6/61		7/54-6/61 and 7/61-6/63	
	P.M.	Rank	P.M.	Rank	P.M.	Rank	P.M.	Rank	P.M.	Rank
1	0.63	0.69	0.62	0.73	0.59	0.65	0.65	0.67	0.60	0.62
2	0.71	0.75	0.76	0.83	0.72	0.79	0.76	0.76	0.73	0.74
4	0.80	0.84	0.85	0.90	0.81	0.89	0.84	0.84	0.84	0.85
7	0.86	0.90	0.91	0.93	0.88	0.93	0.87	0.88	0.83	0.89
10	0.89	0.93	0.94	0.95	0.90	0.95	0.92	0.93	0.92	0.93
20	0.93	0.99	0.97	0.98	0.95	0.98	0.95	0.96	0.97	0.98
35	0.96	1.00	0.98	0.99	0.95	0.99	0.97	0.98	0.97	0.97
50	0.98	1.00	0.99	0.98	0.98	0.99	0.98	0.98	0.98	0.97

The values of these correlation coefficients are striking. For the assessments based upon the data from July 1926 through June 1933 and evaluated using data from July 1933 through June 1940, the product moment correlations varied from 0.63 for single securities to 0.98 for portfolios of 50 securities. The high value of the latter coefficient indicates that substantially all of the variation in the risk among portfolios of 50 securities can be explained by assessments based upon previous data. The former correlation suggests that assessments for individual securities derived from historical data can explain roughly 36 per cent of the variation in the future estimated values, leaving about 64 per cent unexplained.[21]

These results, which are typical of the other periods, suggest that at least as measured by the correlation coefficients, naively extrapolated assessments of future risk for larger portfolios are remarkably accurate, whereas extrapolated assessments of future risk for individual securities and smaller portfolios are of some, but limited value in forecasting the future.

B. *A Closer Examination*

Table 3 presents the actual estimates of the risk parameters for portfolios of 100 securities for successive periods. For all five different sets of portfolios, the rank order correlations between the successive estimates are one, but there is obviously some tendency for the estimated values of the risk parameter to

20. Because of the small number of portfolios of 100 securities, correlations are not presented in Table 2 for these portfolios.

21. This large magnitude of unexplained variation may make the beta coefficient an inadequate measure of risk for analyzing the cost of equity for an individual firm although it may be adequate for cross-section analyses of cost of equity.

Estimation of Beta by Value Line

The return security i is regressed against the return on the New York Stock Exchange Composite Index in the following form:

$$\ln\left(\frac{p^i_t}{p^i_{t-1}}\right) = \alpha_i + \beta_i \ln\left(\frac{p^m_t}{p^m_{t-1}}\right)$$

where:

p^i_t - The price of security i at time t

p^i_{t-1} - The price of security i one week before time t

p^m_t and p^m_{t-1} are the corresponding values of the New York Stock Exchange Index.

→ The natural log of the price ratio is used as an approximation of the return and no adjustment is made for dividends paid during the week.

The regression estimate of beta, β_i, is computed from data over the past five years, so that 259 observations of weekly price changes are used.

Value Line adjusts its estimate of beta for regression bind described by Blume (1971). The reported beta is the adjusted beta computed as

Adjusted β_i = 0.35 + 0.67β

M. Blume, "On the assessment of risk," Journal of Finance, March 1971