



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
LITIGATION OFFICE
720 KENNON STREET SE ROOM 136
WASHINGTON NAVY YARD DC 20374-5051

IN REPLY REFER TO

January 28, 2010

Luly Massaro
Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

In Re: City of Newport, Water Division
Cost of Service Study and Rate Design Rate Filing
Docket No. 4128

Dear Ms. Massaro:

Enclosed please find the original and nine copies of the pre-filed direct testimony of Ernest Harwig in the above referenced proceeding.

Sincerely,

A handwritten signature in cursive script that reads "Audrey Vandyke".

AUDREY VANDYKE

Counsel for the
Secretary of the Navy

Cc: (by email)
Service List

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

**BEFORE THE
RHODE ISLAND PUBLIC UTILITIES COMMISSION**

**IN RE:
CITY OF NEWPORT, UTILITIES DEPARTMENT,
WATER DIVISION APPLICATION TO CHANGE
RATE SCHEDULES**

Docket No. 4128

Direct Testimony of

Ernest Harwig

On behalf of

The United States Department of the Navy

Project 9239
January 29, 2010



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

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Direct Testimony of Ernest Harwig

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Ernest Harwig. My business address is 57 Cedar Summit Road, Asheville,
3 North Carolina, 28803.

4 Q. WHAT IS YOUR OCCUPATION?

5 A. I have been a consultant in the field of public utility regulation for over 30 years, with an
6 emphasis on water and wastewater utilities.

7 Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

8 A. These are set forth in Appendix A of my testimony.

9 Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

10 A. I am under contract to Brubaker & Associates, Inc. and have been asked to testify on
11 behalf of the United States Department of the Navy ("Navy"). Naval Station Newport in
12 Newport, Rhode Island purchases large volumes of water from the Water Division of the

1 City of Newport (“NWD” or “Newport”). Thus, the Navy has a direct economic interest in
2 how the cost of providing water service to it is determined.

3 **Q. WHAT IS THE SUBJECT OF YOUR TESTIMONY?**

4 A. My direct testimony is limited to a discussion of the recently completed customer class
5 demand study and several of the cost classification and allocation methods used in the
6 accompanying cost of service study presented by NWD in this proceeding. These are
7 presented in the direct testimony of Mr. Harold Smith of Raftelis Financial Consulting
8 (“RFC”) on behalf of NWD. I will also discuss characteristics of the Navy’s water usage
9 in recent years.

10 My electing not to address other elements of Newport’s testimony should not be
11 construed as an endorsement of the positions put forth by it on any other issues.

12 **Customer Class Demand Study**

13 **Q. HAVE YOU REVIEWED NEWPORT’S CUSTOMER CLASS DEMAND STUDY AND**
14 **MR. SMITH’S DISCUSSION OF THE RESULTS?**

15 A. Yes, I have. Newport conducted the demand study between May and September 2009.
16 During that period, Newport read customer meters on a daily basis for a sample of
17 Residential and Commercial retail accounts, and for the Navy and Portsmouth Water
18 and Fire District (“PWFD”). Newport used the daily meter readings to calculate peak day
19 and peak hour demand ratios for each of the customer classes stated above. Newport
20 also used the results of the study together with billing data from FY2007 through FY2009
21 to calculate alternative class peaking ratios. The results are summarized on page 13 of
22 Mr. Smith’s testimony.

1 **Q. DO YOU HAVE ANY COMMENTS ON THE CLASS PEAKING FACTORS SHOWN IN**
2 **MR. SMITH'S TESTIMONY?**

3 A. Yes, I do. The demand study produced Residential class peaking factors that were less
4 than those of any of the other classes in the study. For example, the Residential class's
5 Maximum Day peaking factor was only 1.67 times the average day demand, and its
6 Maximum Hour peaking factor was only 2.00 times its average day demand. In
7 comparison, Maximum Day peaking factors for the Commercial class, the Navy and
8 PWFD are 2.28, 2.40 and 1.81, respectively. Their respective Maximum Hour peaking
9 factors are 3.05, 3.03 and 2.26, respectively.

10 **Q. DOES THIS RESULT ACCORD WITH OTHER CUSTOMER CLASS DEMAND**
11 **STUDIES AND COST OF SERVICE STUDIES THAT YOU HAVE REVIEWED FOR**
12 **OTHER WATER UTILITIES?**

13 A. No, it does not. In fact, this is the only instance I have ever encountered in which the
14 Residential class peaking factors are less than those of the other customer classes. In
15 all other cases, the Residential class exhibited or was attributed peaking factors that
16 were greater than those of other customer classes.

17 **Q. ARE YOU SUGGESTING THAT NEWPORT MADE AN ERROR IN THE CONDUCT OF**
18 **ITS DEMAND STUDY?**

19 A. I was unable to identify an error in Newport's sampling methodology or in its calculations
20 of class peaking factors. However, the results are nonetheless counter-intuitive. In
21 response to Navy's Data Request No. 1-9, Newport speculated that its Residential class
22 "... irrigates less than residential customers served by other utilities." However, it did not
23 provide any support for this speculation.

1 **Cost of Service Study**

2 **Q. NEWPORT USES THE RESULTS OF ITS ANALYSIS OF FY2007 - FY2009 CLASS**
3 **BILLING DATA TO CALCULATE AN ALTERNATIVE SET OF CLASS PEAKING**
4 **RATIOS IN DETERMINING THE RATES IT RECOMMENDS IN THIS PROCEEDING.**
5 **WHAT IS YOUR RESPONSE TO THIS CHOICE OF ALLOCATION FACTORS?**

6 A. Newport states that demand factors based on three years' worth of billing data,
7 supplemented with information derived from the daily read data, were the most
8 representative of the demand characteristics of each class. I agree with the proposition
9 that it is desirable to consider additional class usage data when it is available to shed
10 light on class usage patterns over time. In fact, the relative magnitudes of the class
11 peaking factors resulting from the billing analysis are more (but not completely) in accord
12 with all other cost of service studies with which I am familiar. Additionally, Newport's
13 estimates of total class non-coincident demands to total class demands produce system
14 diversity ratios that fall within the range of 1.10 to 1.40. This supports the
15 reasonableness of Newport's class demand estimates.

16 **Q. NEWPORT'S USE OF FY2007 - FY2009 BILLING DATA PRODUCES PEAK DAY**
17 **AND HOUR RATIOS FOR THE NAVY OF 1.84 AND 2.33, AS CONTRASTED TO**
18 **PEAK DAY AND HOUR RATIOS OF 2.40 AND 3.03 FROM THE DEMAND STUDY. IS**
19 **THERE REASON TO BELIEVE THAT THE BILLING DATA RATIOS ARE MORE**
20 **APPROPRIATE FOR ASSIGNING COST OF SERVICE TO THE NAVY?**

21 A. Yes, there is. A review of the Navy's annual usage from FY2006 through FY2009 shows
22 that the Navy's annual consumption has been decreasing each year from the previous
23 year's usage. The annual consumption volumes for each of these years (in thousand
24 gallons) are year one - 373,306; year two - 278,441; year three - 247,728; and year

1 four - 225,392, respectively (see RFC Schedule D-4). Additionally, the Navy has
2 constructed an extensive steam system for its various facilities to provide heat during
3 winter periods. This system requires make-up water from time to time, and it thus
4 provides Newport with a significant demand during the off-peak period. This suggests
5 that the lower peaking factors derived from the billing analysis may be more appropriate
6 for the Navy going forward.

7 **Q. NEWPORT DOES NOT ASSIGN THE COSTS ASSOCIATED WITH UNACCOUNTED**
8 **FOR WATER (“UFW”) TO EITHER THE NAVY OR TO PWFD. DO YOU HAVE A**
9 **COMMENT ON THIS?**

10 A. Yes. In this regard, I have reviewed Newport’s response to the Division’s Data Request
11 No. 1-5. There, Newport provides a tabulation of water mains by diameter size. This
12 tabulation shows that distribution mains constitute about 59% of the total length of
13 Newport’s water mains. This suggests that there is a greater opportunity for leaks to
14 occur within the distribution system. The Navy, on the other hand, takes service directly
15 from Newport’s transmission mains. Thus, it is appropriate to exclude the cost
16 associated with UFW from the Navy’s cost of service.

17 **Q. BASED ON YOUR REVIEW OF NWD’S COST OF SERVICE STUDY, AND THE**
18 **RECENT PATTERN OF THE NAVY’S WATER CONSUMPTION, WHAT IS YOUR**
19 **RECOMMENDATION TO THE COMMISSION?**

20 A. I recommend that the Commission accept NWD’s cost of service study and the resulting
21 rates for water service to each class as filed.

1 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes, it does.

Qualifications of Ernest Harwig

1 **Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A Ernest Harwig. My business mailing address is 57 Cedar Summit Road, Asheville, NC
3 28803.

4 **Q WHAT IS YOUR OCCUPATION?**

5 A I am a consultant in the field of public utility regulation. I work on a contract basis with
6 Brubaker & Associates, Inc., energy, economic and regulatory consultants.

7 **Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

8 A I graduated from Austin College with a Bachelor of Arts Degree in Economics.
9 Subsequently, I received a Master of Arts Degree in International Economics from Texas
10 Tech University. I later attended seminars in Economics at the University of Cologne in
11 the Federal Republic of Germany. I also received a Master of Arts Degree while
12 completing all course work towards the Ph.D. at Southern Methodist University. My
13 major field was Industrial Organization.

14 Prior to joining Drazen-Brubaker & Associates, Inc., I was employed as a utility
15 rate analyst with the Public Service Commission of Wisconsin where I represented the
16 Staff in private and municipal electric utility rate cases. I also prepared exhibits for
17 presentation in major electric utility rate cases.

18 I joined the firm of Drazen-Brubaker & Associates, Inc. (DBA) in September
19 1975. In April 1995, the firm of Brubaker & Associates, Inc. (BAI) was formed. It
20 included most of the former DBA principals and staff. In addition to BAI's main office in
21 St. Louis, the firm has branch offices in Phoenix, Arizona and Corpus Christi, Texas. At

1 the firm, I have been engaged in the preparation of testimony and exhibits relating to
2 electric, gas, water, wastewater and steam utilities. These included determinations of
3 rate base, operating income and depreciation rates; the performance of cost of service
4 studies; and the design of rates for utility services. I have also provided technical
5 assistance in the negotiation of contracts for water and wastewater services between
6 municipal suppliers and industrial customers. I was formerly a member of the American
7 Water Works Association.

8 **Q ARE YOU AUTHOR OF ANY PUBLICATIONS?**

9 A Yes. I am the co-author of two articles: "Municipal Electric Utility Pricing" which
10 appeared in the February 1976 issue of Governmental Finance, and "Water Rates: An
11 Industrial User's View" which appeared in the May 1986 issue of Journal AWWA.

12 **Q HAVE YOU PREVIOUSLY APPEARED BEFORE A REGULATORY COMMISSION?**

13 A Yes. I have testified before the public utility regulatory commissions of Alabama,
14 California, Delaware, Illinois, Indiana, Kentucky, Minnesota, Missouri, New Hampshire,
15 New Jersey, Pennsylvania, Rhode Island, Tennessee, Texas, West Virginia, Wisconsin
16 and Wyoming. In addition, I have assisted both utility customers and suppliers in local
17 rate proceedings and contract negotiations for water and wastewater services in about
18 twenty states.