MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. WR-2000-281

FILED

MAY 2 5 2000

Missouri Public
Service Commission

Surrebuttal Testimony of
WILLIAM M. STOUT, P.E.
On Behalf of
MISSOURI-AMERICAN WATER COMPANY (MAWC)

Jefferson City, Missouri

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's general rate increase.	)))	Case No. WR-2000-281

AFFIDAVIT OF WILLIAM M. STOUT

William M. Stout, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying surrebuttal testimony entitled "Surrebuttal Testimony of William M. Stout"; that said surrebuttal testimony attached hereto was prepared by him and/or under his direction and supervision; that if inquiries were made as to the facts in said surrebuttal testimony, he would respond as therein set forth; and that the aforesaid surrebuttal testimony is true and correct to the best of his knowledge, information and belief.

William M. Stout

William M. Stout

State of _Pennsylvania_

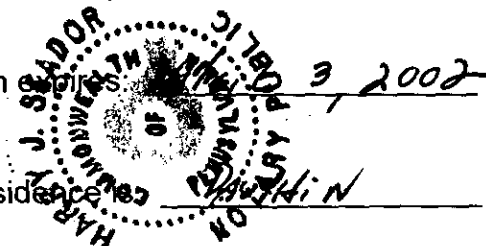County of _Cumberland_

SUBSCRIBED and sworn to

before me this _24th_ day of

May , 2000.

Nancy B. Seards

Notary Public

My commission expires _3, 2002_

My County Residences _Martin N_

SURREBUTTAL TESTIMONY OF

WILLIAM M. STOUT, P.E.

TABLE OF CONTENTS

MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. WR-2000-281

SURREBUTTAL TESTIMONY OF WILLIAM M. STOUT, P.E.

1   1.   Q.   Please state your name and address.

2   A.   William M. Stout. My business address is 207 Senate Avenue, Camp Hill,

3   Pennsylvania.

4   2.   Q.   Have you previously filed testimony in this proceeding?

5   A.   Yes. My direct testimony was filed on November 29, 1999, and my rebuttal

6   testimony was filed on May 4, 2000.

7   3.   Q.   What is the purpose of your surrebuttal testimony?

8   A.   The purpose of my surrebuttal testimony is to respond to the rebuttal

9   testimony of Utility Operations Division (Commission staff) witness Wendell

10   R. Hubbs; the Office of the Public Counsel (OPC) witnesses Hong Hu and

11   James A. Busch; and City of Warrensburg et al (Intervenors) witness Ernest

12   Harwig.

13 4.   Q.   What are the subjects of your surrebuttal testimony?

14   A.   The subjects of my surrebuttal testimony are (1) the Base-Extra Capacity

15   method, (2) the maximum day and hour demand ratios by customer class,

16   (3) the return on rate base revenue requirement model, (4) the attribution of

17   the dramatic shifts in revenues proposed by other parties to the policy of

18   Single Tariff Pricing, (5) economic efficiency, and (6) the issue of establishing

19   the groups for cost analysis and rate design.

BASE-EXTRA CAPACITY METHOD

1

2 5. Q. On page 9 of her rebuttal testimony, Ms. Hu states that the Base-Extra

3 Capacity method "will produce results that are very similar, if not identical, to

4 a pure peak responsibility method". Do you agree?

5 A. No, I do not. The Base-Extra Capacity method allocates capacity costs to

6 customer classifications on the bases of average daily use (or annual water

7 consumption) and use in excess of average (extra capacity). The weighting

8 of the average use and extra capacity factors is based on the ratio of system

9 average day to system peak day and the complement of this ratio (1.00 - the

10 ratio), respectively. The extra capacity factors are based on estimates of the

11 non-coincidental peak demand of each customer class. The non-

12 coincidental peak demand of a class is its highest use and may or may not

13 coincide with the system peak.

14 The pure peak responsibility method described by Ms. Hu is the

15 Coincident Peak method. This method allocates capacity costs to customer

16 classes based on the use of each class on the day or hour of system peak

17 demand. Use of the Coincident Peak method can result in a low allocation

18 of capacity costs to customers whose peak demands did not occur at the

19 same time or coincident with the system peak. However, this does not occur

20 with either the Base-Extra Capacity method or the Non-Coincident Peak

21 method because both of these methods use the peak of each class

22 regardless of when it occurred.

1 6. Q. On pages 10 through 13, Ms. Hu presents two examples to demonstrate her

2   position that the pure peak responsibility method and the Base-Extra

3   Capacity method are identical. What does the example demonstrate?

4   A. The example demonstrates that the Non-Coincident Peak method and the

5   Base-Extra Capacity method are identical if the weighting of the average use

6   and the extra capacity factors in the Base-Extra Capacity method is based

7   on the sum of the non-coincidental peaks rather than the actual system

8   peak. It does not demonstrate that the Base-Extra Capacity method and the

9   Coincident Peak method produce identical results.

10 7. Q. Please explain.

11 A. The maximum day demands that Ms. Hu uses in her example are estimates

12   of non-coincidental peaks and total 70.6 million gallons which is 1.84 times

13   the average daily use of 38.3 million gallons. The actual system peaks in

14   recent years are shown in Table 2-E of Schedule WMS-2 attached to my

15   Direct Testimony and range from 62.3 to 67.0 million gallons. The pure peak

16   responsibility method, i.e., the Coincident Peak method, would be based on

17   each classes contribution to these lower coincidental peaks. It is not based

18   on the sum of the non-coincidental peaks.

19   The Non-Coincident Peak method results in the factors shown in

20   column 6 of Ms. Hu's Tables 5B and 6B. Weighting the average use and

21   extra capacity use based on the ratio of average use to the sum of non-

22   coincidental peak demands, 0.5425 (1.00/1.84) and its complement

23   (0.84/1.84), results in the factors in column 6 of Ms. Hu's Table 6A. Although

24   the result of this calculation is identical to the Non-Coincident Peak method,

1   it is only so because Ms. Hu used the sum of the non-coincidental demands

2   to develop the weights. This is not the Base-Extra Capacity method. In the

3   Base-Extra Capacity method, which I used, the weights are based on the

4   observed system peak or 0.5882 (1.00/1.70) for average use and 0.4118

5   (0.70/1.70) for extra capacity. This results in greater weight being placed on

6   average use than is the case for either the Non-Coincident Peak method or

7   the Coincident Peak method.

8   **MAXIMUM DAY AND HOUR DEMAND RATIOS**

9   8.   Q.   Mr. Harwig, on page 4 of his rebuttal testimony, states that "[t]he patterns of

10   usage by each class vary from one district to another in terms of imposing

11   peaks on the local water system." Are you aware of any data that support

12   this contention?

13   A.   No, I am not. In my allocation of costs to customer classes at the total

14   company level, I used typical maximum day and hour ratios for each class.

15   I have no reason to believe that these typical ratios vary significantly from

16   one district to another.

17   9.   Q.   What would be required to support the use of patterns of usage by class that

18   vary from one district to another?

19   A.   Estimates of class usage patterns, i.e., maximum day and hour demand

20   ratios, that vary from one district to another would require studies of use by

21   hour for each class in each district. This would require the placement of

22   recording devices on hundreds, if not thousands, of residences and

23   businesses; regular downloading of information; statistical analyses of the

24   data; and judgements of the ratios based on such data as developed over

1   several years. Already the parties are proposing a pricing policy, i.e., district

2   specific pricing, that will tremendously increase rate case expense.

3   Requiring the Company to use varying ratios is tantamount to requiring the

4   Company to develop sufficient evidence to support demand ratios in each

5   district and is unreasonable. Most companies do not conduct such studies

6   as inputs to their cost of service allocation studies. Recommendations that

7   would require the Company to do seven sets of these studies should be

8   rejected.

9   **RETURN ON RATE BASE REVENUE REQUIREMENT MODEL**

10   10. Q. On page 5 of his rebuttal testimony, Mr. Busch argues that STP leads to a

11   "never-ending cycle of constant rate increases without the benefit of

12   decreases as the plant in a district ages". Do you agree with his

13   assessment?

14   A. No, I do not. Under Single Tariff Pricing (STP), new investment in a district

15   will raise its rates, but, all other things being equal, not as much as rates

16   would have been increased under district specific pricing. As new

17   investment is made in other districts, rates in this district would rise even

18   higher, and eventually approach the level that would have resulted from the

19   investment in its area under district specific pricing. That is, the increases

20   in rates would be smoothed and more regular, rather than drastic and

21   irregular. Offsetting the impact on rate base of plant additions to the various

22   districts would be the accumulation of depreciation expense on previous

23   additions. Just as the impact of the plant addition on rates is spread to all

24   districts, the reduction in rate base due to depreciation is as well. The

1   benefit of this aging of the plant is still reflected in the revenue requirement

2   model.

3   11. Q. With regard to "constant rate increases", which pricing policy will produce

4   more rate activity?

5   A. District specific pricing will result in more rate activity for the Company than

6   Single Tariff Pricing. Although each district may see fewer, but larger

7   increases under district specific pricing, the total number of rate cases will

8   increase dramatically. As plant is added to the various districts or as

9   expenses increase, revenues will be inadequate to provide a fair return and

10   a rate case will be required for the district. Under Single Tariff Pricing the

11   impact of the plant addition on the return for the entire Company would be

12   much less and able to be absorbed for a period until the total expenditures

13   throughout the state warranted a rate proceeding.

14   **DRAMATIC SHIFTS IN REVENUES**

15   12. Q. On page 8 of his rebuttal testimony, Mr. Harwig attributes the dramatic shifts

16   in revenues that he is proposing to STP pricing. Is this correct?

17   A. No, it is not. The dramatic shifts in revenues as proposed by Mr. Harwig

18   and others are attributable to a shift from Single Tariff Pricing (STP) to

19   district specific pricing. Retention of STP will result in less dramatic shifts.

20   **ECONOMIC EFFICIENCY**

21   13. Q. Mr. Busch discusses the concept of economic efficiency on pages 3 and 4

22   of his rebuttal testimony. Do cost-based rates promote economic efficiency

23   as Mr. Busch suggests?

1   A. Cost-based rates that use embedded costs can only promote economic

2   efficiency to a point. Mr. Busch seems to suggest that if customers are

3   charged their specific embedded cost of water service they would in some

4   way respond to this cost signal in order to promote economic efficiency.

5   However, most water usage is relatively inelastic and not responsive to price

6   signals.

7   Furthermore, in the current instance, Mr. Busch's concept of economic

8   efficiency suggests that the Company should take a vote of its customers on

9   whether to build a new plant and, if so, how much should be spent to build

10   it. This is not practical. First, public utilities have an obligation to serve and

11   are subject to regulations as to the manner in which this service is provided.

12   These constraints, as well as the constraints of geography and natural

13   resources, limit the extent to which the utility can respond to its customers'

14   desire for a lower cost product. Second, public utility plant is long-lived and,

15   for the most part, has a fixed location. The ability to modify the production

16   inputs in response to the reaction of customers to the resultant price is either

17   very limited or not possible. Building small increments of capacity as

18   demands grow also is not practical.

19   From an economic perspective, the magnitude of the increase in this

20   proceeding cannot be blamed on the construction of a modern, reliable

21   treatment facility or the use of Single Tariff Pricing. The magnitude of the

22   increase in this proceeding is the result of using embedded costs for

23   determining the return on and of capital. If marginal costs, i.e., the current

24   cost of adding additional capacity, had been used all along, there would have

1   been little impact as a result of replacing the treatment plant in St. Joseph,

2   as the rates would have already incorporated the current cost of this

3   capacity. Only the use of marginal costs would truly promote economic

4   efficiency. One of the results of embedded cost ratemaking is the impact of

5   replacing major facilities. Until this ratemaking approach is changed, its

6   impacts must be tolerated.

7   **ESTABLISHING GROUPS FOR COST ANALYSIS AND RATE DESIGN**

8   14. Q. On page 3 and 4 of his testimony, Mr. Hubbs discusses the differences

9   between Single Tariff Pricing and district specific pricing in terms of "rate

10   design circles". Do you concur with this characterization?

11   A. Yes, I do. In Single Tariff Pricing, rates are designed for each traditional

12   class of customers (residential, commercial, etc.) across the entire company

13   and, in district specific pricing, rates are designed for each class of

14   customers within a district.

15   15. Q. Mr. Hubbs also discusses designing unique rates for each specific ratepayer

16   as representing the "greatest accuracy for obtaining recovery of rates from

17   those causing the costs to be incurred..." and concludes this approach is not

18   feasible because of the time and cost required. Do you agree?

19   A. Yes, I do. The effort to determine the cost of serving individual customers

20   would be enormous. Factors that would affect the cost of serving an

21   individual customer would include demand characteristics, the actual original

22   cost of the service line and meter serving the customer, the amount of time

23   to read meters in the vicinity of the customer, the customer's payment

24   record, the distance from the treatment plant that water would have to travel

1   to reach the customer, the extent to which that water would require pumping

2   and storage, the cost of the facilities between the customer and the source

3   of supply and the extent to which the customer used those facilities, etc.

4   These factors could result in costs of service for customers in different parts

5   of the system that would be dramatically different. For example, a residential

6   customer near the treatment plant with a small lawn and a perfect payment

7   record would be far less costly to serve than a residential customer twenty

8   miles from the plant on a well-watered two acre lot in a neighborhood with an

9   elevation that required additional pumping and storage.

10 16. Q. Do you concur with Mr. Hubbs' conclusion that "there is less chance for

11   undue subsidization...on a district basis (DSP) instead of a company-wide

12   basis (STP)"?

13   A. No, I do not. As noted above, there are many variables that affect the cost

14   of serving particular customers. Mr. Hubbs believes that segregating

15   customers by class within each district minimizes subsidization. Perhaps

16   subsidization would be minimized if all customers at a certain elevation

17   above the treatment facility in their district were grouped together so that only

18   those customers that required pumping and storage paid for it. Perhaps

19   subsidization would be minimized if all customers that became a customer

20   in the 1960's were grouped together because their service lines and meters

21   cost less than those added in subsequent years. Perhaps subsidization

22   would be minimized if all customers who are within two miles of the treatment

23   plant were grouped together because the length of mains required to serve

24   them is less.

1   There are numerous subsidies that remain when we group customer

2   classes within a district. Many of these may be as great as the apparent

3   subsidies that exist on an average basis between districts. For example, it

4   is possible that a long-time residential customer in the St. Joseph District

5   with moderate demands and located near the treatment plant would have a

6   lower cost of service than a new residential customer in the Joplin District

7   with very high peak demands and served by the Thirty-Second St. well,

8   booster station and tank. However, we choose to ignore the differences of

9   distance; cost of specific facilities between the plant and the customer;

10   pumping and storage; and individual demand characteristics and place our

11   sole focus on the average differences between districts. This is a relatively

12   arbitrary circle given all the other variables that affect cost.

13   Public utility ratemaking in this country has traditionally differentiated

14   customers based on the nature of the customers end use, i.e., whether the

15   customer is residential, commercial, industrial, etc. This is the only

16   differentiation or circle drawing that should continue to be used for this

17   Company consistent with other Missouri utilities in the electric, gas and

18   telephone industries.

19   17.   Q.   Should the Commission choose to abandon this traditional approach, is there

20   a time- and cost-effective means of doing so?

21   A.   Yes, there is. However, the most time- and cost-effective means of moving

22   away from six rate design circles is not to create forty-two rate design circles,

23   as proposed by those parties that support district-specific pricing. These

24   proposals have created a cost allocation and rate design nightmare in which

1   no two parties are close to agreeing on the cost to serve a particular class in

2   a given district or the manner in which present rates should be moved

3   towards recovering such costs.

4   A more rationale approach to recognize what some consider to be the

5   uniqueness of the St. Joseph treatment plant is the institution of a surcharge

6   applicable to bills in the St. Joseph District. The Capital Addition Surcharge

7   Proposal, as described on pages 17 through 19 of my Rebuttal Testimony,

8   would avoid the multitude of allocations, rate designs and rate filings that the

9   district-specific pricing proposals will foster. The Capital Addition Surcharge

10   Proposal segregates a portion of the cost of the St. Joseph treatment plant

11   to be recovered through the surcharge, but continues to treat all other costs

12   in the traditional manner by allocating them to customer classes on a total

13   company basis and designing rates applicable to all districts to recover such

14   costs.

15 18. Q. Does this conclude your surrebuttal testimony?

16   A. Yes, it does.