

**FILE**

**OCC EXHIBIT NO.** \_\_\_\_\_

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke Energy Ohio, Inc. for an Increases in Electric Rates.	)	Case No. 08-0709-EL-AIR
	)	
In the Matter of the Application of Duke Energy Ohio, Inc. for Tariff Approval.	)	Case No. 08-0710-EL-ATA
	)	
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval To Change Accounting Methods.	)	Case No. 08-0711-EL-AAM
	)	

**RECEIVED-DOCUMENTS DIV**  
**2009 FEB 26 PM 5:07**  
**PUCO**

**DIRECT TESTIMONY  
of  
SCOTT J. RUBIN**

**ON BEHALF OF THE  
OFFICE OF THE OHIO CONSUMERS' COUNSEL  
10 West Broad Street, Suite 1800  
Columbus, OH 43215-3485**

*February 26, 2009*

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.  
Technician DW Date Processed 2/27/09

## TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION .....	1
II. SUMMARY .....	4
Summary of Recommendations .....	4
Summary of Duke's Proposals .....	5
Summary of PUCO Staff's Recommendations .....	7
III. ALLOCATION OF ANY RATE INCREASE .....	8
IV. RESIDENTIAL RATE DESIGN .....	12
V. CONCLUSION .....	20

## SCHEDULES

SJR-1	Curriculum Vitae
SJR-2	Duke Proposed Residential Rate Design (Rates RS and CUR)
SJR-3	Staff Proposed Residential Rate Design (Rates RS and CUR)
SJR-4	Illustration of Straight Scale-back of Duke's Inter-Class Allocation Assuming a Rate Increase Equal to 50% of Duke's Request
SJR-5	Alternative Class Allocation of Rate Increase Under a Hypothetical Increase Equal to 75% of Duke's Proposed Increase
SJR-6	Residential Customer Charge Calculation
SJR-7	Comparison of Impacts on Residential Customers (Annual Percent Increase in Base Rates) of Rate Design Proposals

**1 I. INTRODUCTION**

**2 Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A1. My name is Scott J. Rubin. My business address is 333 Oak Lane, Bloomsburg,  
4 Pennsylvania.

5

**6 Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

7 A2. I am an independent consultant and an attorney. My practice is limited to matters  
8 affecting the public utility industry.

9

**10 Q3. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?**

11 A3. I have been retained by the Office of the Ohio Consumers' Counsel ("OCC") to  
12 review the proposed cost of service study and residential rate design of Duke  
13 Energy Ohio, Inc. ("Duke" or "Company"). I have also been asked to review the  
14 portions of the Report of the Staff ("Staff Report") of the Public Utilities  
15 Commission of Ohio ("PUCO" or "Commission") that discussed these same  
16 issues.

17

**18 Q4. WHAT ARE YOUR QUALIFICATIONS TO PROVIDE THIS TESTIMONY?**

19 A4. I have testified as an expert witness before utility commissions or courts in the  
20 District of Columbia and in the states of Arizona, Delaware, Illinois, Kentucky,  
21 Maine, Maryland, New Jersey, New York, Ohio, Pennsylvania, and West  
22 Virginia. I also have testified as an expert witness before two committees of the

1 U.S. House of Representatives and one committee of the Pennsylvania House of  
2 Representatives. I also have served as a consultant to the staffs of the Connecticut  
3 Department of Public Utility Control and the Delaware Public Service  
4 Commission as well as to several national utility trade associations, and state and  
5 local governments throughout the country. Prior to establishing my own  
6 consulting and law practice, I was employed by the Pennsylvania Office of  
7 Consumer Advocate from 1983 through January 1994 in successive positions of  
8 increasing responsibility. From 1990 until I left state government, I was one of  
9 two senior attorneys in that Office. Among my other responsibilities in that  
10 position, I played a major role in setting its policy positions on water and electric  
11 utility matters. In addition, I was responsible for supervising the technical staff of  
12 that Office. I also testified as an expert witness for that Office on rate design and  
13 cost of service issues.

14  
15 Throughout my career, I developed substantial expertise in matters relating to the  
16 economic regulation of public utilities. I have published articles, contributed to  
17 books, written speeches, and delivered numerous presentations, on both the  
18 national and state levels, relating to regulatory issues. I have attended numerous  
19 continuing education courses involving the utility industry. I also periodically  
20 participate as a faculty member in utility-related educational programs for the  
21 Institute for Public Utilities at Michigan State University, the American Water  
22 Works Association, and the Pennsylvania Bar Institute. Schedule SJR-1 to this

1 testimony is my curriculum vitae.

2

3 **Q5. DO YOU HAVE ANY EXPERIENCE THAT IS PARTICULARLY**  
4 **RELEVANT TO THE ISSUES IN THIS CASE?**

5 **A5.** Yes, I do. I have testified concerning rate design and cost of service issues in  
6 numerous proceedings involving electric, gas, or water utilities. Each case where  
7 I have testified is shown in Schedule SJR-1. My most recent testimony involving  
8 rate design and cost of service issues for an electric utility was in a 2008 base rate  
9 proceeding involving Commonwealth Edison Company, in which I testified on  
10 behalf of the Office of Attorney General in Illinois.

11

12 **Q6. WHAT DOCUMENTS AND DATA HAVE YOU REVIEWED?**

13 **A6.** I have reviewed the Company's Application, the Direct Testimony of James E.  
14 Ziolkowski and Donald L. Storck, the Staff Report, and numerous responses by  
15 the Company to interrogatories and requests for production of documents related  
16 to rate design and cost of service issues.

1    **II. SUMMARY**

2            **Summary of Recommendations**

3    **Q7.    PLEASE SUMMARIZE YOUR RECOMMENDATIONS CONCERNING**  
4            **REVENUE ALLOCATION.**

5    **A7.**    I make the following recommendation concerning the inter-class allocation of any  
6            revenue increase authorized in this case:

- 7            • If the Commission authorizes a rate increase that is less than 65 percent of  
8            Duke's request, then Duke's class allocation should be used, with a  
9            proportionate scale-back to each class.
- 10          • If the Commission authorizes a rate increase that is more than 65 percent of  
11          Duke's request, then Duke's proposal should be modified in three ways:
  - 12                  ○ The rates for Rate DP should be set as Staff proposed – an increase of  
13                  64.9 percent. This would create a revenue shortfall, compared to  
14                  Duke's proposal, of \$5.8 million (at Duke's revenue requirement) or  
15                  less.
  - 16                  ○ The substantial rate decrease Duke proposes for Rate DM  
17                  (approximately \$2.0 million) should not be adopted. Instead, Rate  
18                  DM's rates should remain unchanged.
  - 19                  ○ The remaining shortfall in revenues (\$3.8 million or less) should be  
20                  recovered from the remaining customer classes (except Rate TS) in  
21                  proportion to the class's revenues.

22            I explain the reasoning behind these recommendations in Section III of my  
23            testimony.

24  
25    **Q8.    PLEASE SUMMARIZE YOUR RECOMMENDATIONS CONCERNING**  
26            **RESIDENTIAL RATE DESIGN.**

27    **A8.**    I make the following recommendations concerning the design of residential rates

(Rate RS):

- The PUCO should reject Duke's proposed increase in the residential customer charge to \$10.00 from the current rate of \$4.50 per month.
- Staff's general methodology for determining the residential customer charge is appropriate, but it fails to take into account certain reductions that should be made to reflect (1) credits to rate base associated with investments included in Staff's calculation, and (2) revenues the Company receives from residential customers from miscellaneous service charges that are designed to recover the same customer-related costs.
- Using the midpoint of Staff's rate of return, I calculate that the customer charge for Rate RS should be no more than \$5.53 per month. If the PUCO adopts a different rate of return (or changes any of the other costs included in the customer charge calculation), then the customer charge should be modified accordingly.

These issues are discussed in detail in Section IV of my testimony.

#### **Summary of Duke's Proposals**

#### ***Q9. PLEASE SUMMARIZE YOUR UNDERSTANDING OF DUKE'S REVENUE INCREASE ALLOCATION PROPOSAL.***

**A9.** Duke is proposing to allocate any rate increase it receives in this case to bring each customer class to 100% of the cost of serving that class.<sup>1</sup> According to Duke's cost of service study<sup>2</sup>, the residential classes<sup>3</sup> are paying a greater share of costs under present rates than is indicated by the cost of service study.<sup>4</sup> Duke

<sup>1</sup> Direct Testimony of Donald L. Storck, pp. 11-12; see also Duke Schedule E-3.2, p. 20, lines 31 and 33 (showing proposed revenues equal to the total cost of service for each customer class).

<sup>2</sup> Duke Schedule E-3.2.

<sup>3</sup> Duke's cost of service study shows one residential class. Within that class, residential customers can be served on one of five rate schedules: Rates RS (residential service), ORH (optional heating service), TD (optional time of day service), CUR (common use areas in multi-unit buildings), or RE3P (three-phase service). See Duke Sch. E-4. The rates for RS and CUR are identical, and account for essentially 100% of residential revenues. Whenever I refer to Rate RS, I mean the combination of Rate RS and Rate CUR.

<sup>4</sup> This is clearly illustrated in Table 1 on page 28 of the Staff Report.

1 proposes, therefore, that residential customers should receive a smaller-than-  
2 average rate increase in this case. Specifically, Duke is proposing an overall  
3 increase in its retail base rate revenue requirement of \$85.6 million (27.5 percent).  
4 The proposed increase for residential customers is \$36.0 million (19.6 percent).<sup>5</sup>  
5

6 ***Q10. PLEASE SUMMARIZE YOUR UNDERSTANDING OF DUKE'S PROPOSAL***  
7 ***FOR DESIGNING RESIDENTIAL RATES.***

8 ***A10.*** Duke proposed a significant change in the design of its residential rates. At the  
9 present time, Rate RS has a customer charge of \$4.50 per month and a distribution  
10 charge of 1.9949 cents per kilowatt-hour (KWH).<sup>6</sup> Duke proposed to increase the  
11 customer charge to \$10.00 per month and to decrease the distribution charge to  
12 1.9217 cents per KWH.<sup>7</sup>  
13

14 The effect of Duke's proposal would be to recover its proposed \$36.0 million  
15 increase in Rate RS revenues by increasing customer charge revenues by \$41.5  
16 million and decreasing distribution (per KWH) revenues by \$5.5 million, as I  
17 show on Schedule SJR-2.

---

<sup>5</sup> Duke Schedule E-4, p.2.

<sup>6</sup> Duke Schedule E-4.1, p. 2.

<sup>7</sup> Duke Schedule E-4.1, p. 1.



**Summary of PUCO Staff's Recommendations**

***Q11. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE PUCO  
STAFF'S PROPOSAL CONCERNING INTER-CLASS REVENUE  
ALLOCATION.***

***A11.*** PUCO Staff recommended that the amount of any rate increase allocated to the residential class should be higher than Duke recommended. Specifically, Staff recommended that, under Duke's proposed 27.5 percent increase, residential revenues should be increased by \$42.1 million (22.9 percent) or approximately \$6.1 million more than Duke proposed.

***Q12. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE PUCO  
STAFF'S RESIDENTIAL RATE DESIGN PROPOSAL.***

***A12.*** Staff recommended a different residential rate design than Duke proposed. Staff proposed that the Rate RS customer charge should be \$5.71 per month, an increase of 26.9 percent above the existing rate of \$4.50. The remaining increase in residential revenues should be recovered from the per KWH charge. Under Staff's proposed allocation of the rate increase to the residential class, this would result in a distribution charge of 2.4343 cents per KWH (Staff Report at 34). I compare Staff's recommendation with Duke's present rates on Schedule SJR-3.

In addition, Staff recommended that the \$5.71 customer charge it calculated under Duke's proposed revenue requirement should not be changed if the Commission

determines that a smaller revenue requirement is reasonable. That is, Staff recommends that the residential rate set in this case should include a customer charge of \$5.71 per month, regardless of the level of revenue requirement determined by the Commission. Any change in the revenue requirement would be reflected only in the residential distribution (per KWH) charge.

### **III. ALLOCATION OF ANY RATE INCREASE**

***Q13. HOW DID DUKE PROPOSE TO ALLOCATE ANY RATE INCREASE GRANTED IN THIS CASE?***

***A13.*** Duke proposes to allocate any rate increase to each customer class in accordance with the results of Duke's cost of service study. This would have the effect of recovering from each class the cost to serve that class.

***Q14. HOW CLOSE ARE DUKE'S EXISTING RATES TO RECOVERING THE COST OF SERVICE FROM EACH CLASS?***

***A14.*** Duke's existing rates do not closely track the cost of serving each class. Staff shows the rate of return received from each customer class on page 28 of the Staff Report (Table 1). That table also shows the indexed return, which is the proportion above or below the average return that the class is paying. For example, if the system-average return is 5 percent and a class is providing a return of 6 percent, its indexed rate of return would be 1.20. It can be seen from Staff's table that the existing indexed returns range from 3.65 for the DM class to -0.94

1 for the DP class.<sup>8</sup> This represents a very large disparity in each class's payment  
2 its cost of service – some classes are paying significantly more than cost, while  
3 others are paying much less than the cost to serve them. Indeed, the DP class is  
4 currently providing a negative return, which means that it is not even covering the  
5 current expenses incurred to serve it, let alone a return on the class's rate base.

6  
7 ***Q15. WHAT DOES STAFF RECOMMEND?***

8 ***A15.*** Staff acknowledges that Duke's current rates are significantly out of line with the  
9 cost of serving each customer class, but Staff recommends that only 75 percent of  
10 the gap between existing returns and the cost of service should be closed in this  
11 case (Staff Report at 29-32). Staff's Table 1 shows that Staff's recommendation  
12 would result in class returns ranging from less than 5 percent (Rate DP) to more  
13 than 15 percent (Rate DM) – or from about 50% of the system-average return  
14 (4.68% / 9.10%) to more than 160% of the average return (15.12% / 9.10%).

15  
16 ***Q16. IF THE COMMISSION BELIEVES THAT SOMETHING SHOULD BE***  
17 ***DONE TO MITIGATE THE LARGE INCREASE TO SOME CUSTOMER***  
18 ***CLASSES, WOULD YOU SUPPORT STAFF'S APPROACH?***

19 ***A16.*** No, I would not support Staff's approach. If the Commission believes that  
20 something should be done to avoid very large increases, then I would recommend

---

<sup>8</sup> This range excludes the TS (Transmission) class. Duke proposed, and Staff and OCC agree, that the transmission class should no longer pay rates that recover any significant distribution costs. Thus, when this case is concluded, there will no longer be a disparity between the cost of service and the rates paid by the TS class.

1 a different approach. Staff's approach closes 75 percent of the gap between  
2 present rates and the cost of service. The 75 percent figure is wholly arbitrary and  
3 leads to some unusual results, as I explain below.

4  
5 Table 4 on page 30 of the Staff Report shows that Staff is recommending a rate  
6 increase (under Duke's proposed revenue requirement) of 64.9 percent for Rate  
7 DP. Presumably, then, Staff believes that a 65 percent increase in rates – in the  
8 context of an overall increase of 27.5 percent – is reasonable and justifiable.

9 Duke proposed increases for the DS and EH classes of 42.9 percent and 51.8  
10 percent, respectively (as shown on Table 3 on page 30 of the Staff Report) –  
11 increases that are much less than the one Staff proposes for Rate DP. Yet, Staff  
12 recommends smaller increases for these two customer classes (DS and EH),  
13 without any explanation. If it is reasonable to increase Rate DP by 65 percent,  
14 why is it necessary to lower a 43 percent increase to Rate DS to 37 percent?

15  
16 Importantly, this is not a minor change by Staff. The difference between the  
17 revenues that would be collected from Rate DS under Duke's proposal and Staff's  
18 recommendation is \$4.7 million. That money is being shifted onto other customer  
19 classes, perpetuating the disparity between rates and the cost of service into the  
20 future.

21  
22 If the Commission believes that full-cost pricing (by class) is not achievable in

1 this case, then I would recommend a two-part approach. First, if the Commission  
2 authorizes a rate increase that is less than 65 percent of Duke's request, then  
3 Duke's class allocation should be used, with a proportionate scale-back to each  
4 class. The 65 percent figure represents the point at which Staff's proposed  
5 increase for Rate DP (64.9%) would be achieved by scaling back Duke's  
6 proposed increase for that class (100.3%). In other words, if Duke were to  
7 receive 65 percent of the increase it requested, the rate increase to Rate DP –  
8 under Duke's proposed allocation – would be approximately 65 percent, which is  
9 the same increase of Rate DP that Staff recommended. Thus, if the Commission  
10 grants Duke an increase of less than 65 percent, Duke's inter-class allocation  
11 would result in an increase to Rate DP that is less than the 64.9 percent  
12 recommended by Staff, so that should alleviate any concerns raised by Staff. I  
13 illustrate this on Schedule SJR-4 using a hypothetical increase in Duke's revenue  
14 requirement equal to 50 percent of Duke's request.

15  
16 Second, if the Commission authorizes a rate increase that is more than 65 percent  
17 of Duke's request, then Duke's proposal should be modified in three ways:

- 18 • The rates for Rate DP should be set as Staff proposed – an increase of 64.9  
19 percent. This would create a revenue shortfall, compared to Duke's  
20 proposal, of \$5.8 million (at Duke's revenue requirement) or less.
- 21 • The substantial rate decrease Duke proposes for Rate DM (approximately  
22 \$2.0 million) should not be adopted.

- The remaining shortfall in revenues (\$3.8 million or less) should be recovered from the remaining customer classes (except Rate TS)<sup>9</sup> in proportion to the class's revenues.

On Schedule SJR-5, I show the resulting class allocations and rates of return using a hypothetical illustration where Duke receives 75% of the increase it requested.

#### **IV. RESIDENTIAL RATE DESIGN**

***Q17. ON PAGES 32 AND 33 OF THE STAFF REPORT, STAFF RECOMMENDED A RESIDENTIAL CUSTOMER CHARGE OF \$5.71 PER MONTH, COMPARED TO DUKE'S PROPOSAL OF A \$10.00 PER MONTH CHARGE. DO YOU AGREE WITH STAFF'S RECOMMENDATION?***

***A17.*** No, I do not entirely agree with Staff's recommendation. I find that Staff's approach is certainly preferable to Duke's customer charge calculation, but additional adjustments should be made to develop an accurate, cost-based customer charge.

Staff stated that its methodology is "minimally compensatory and includes only those costs such as meters and service drops that are necessary for each customer to be served" (Staff Report at 32). I agree with this goal, but in performing its calculation Staff failed to consider two important factors. First, there are several rate base deductions that relate directly to the investment Staff included in the

---

<sup>9</sup> As mentioned above, OCC does not oppose the elimination of distribution costs from the Rate TS transmission rate, which is the source of the rate reduction for that class.

1 customer charge calculation. Second, the customer costs Staff identified are not  
2 recovered only through the customer charge; some of those costs are also  
3 recovered through miscellaneous service charges (specifically, reconnection fees  
4 and bad check charges).

5

6 ***Q18. PLEASE DESCRIBE THE RATE BASE DEDUCTIONS THAT SHOULD BE***  
7 ***INCLUDED IN STAFF'S CUSTOMER CHARGE CALCULATION.***

8 ***A18.*** There are three rate base deductions that should be reflected in Staff's customer  
9 charge calculation. I show these adjustments on Schedule SJR-6, lines 5-8, and I  
10 describe them below.

11

12 First, Staff's calculation included Duke's investment in meters and the customer  
13 component of transformers. Offsetting this investment are accumulated deferred  
14 income taxes ("ADIT") on electric meters and transformers. Duke shows the  
15 amount of this rate base deduction in its cost of service study. Specifically, on  
16 Schedule E-3.2a, page 6, line 4, Duke shows that the residential customer-related  
17 portion of ADIT for meters and transformers is \$33,754. Staff failed to make this  
18 adjustment to net plant.

19

20 Second, according to Staff's workpapers, Staff's calculation of the carrying cost  
21 on rate base included the recovery of property taxes on the investment. Duke's  
22 cost of service study, however, shows that there are ADIT offsetting this

1 investment. Specifically, Duke's Schedule E-3.2a, page 7, line 26 shows the  
2 residential customer-related offset of ADIT on property taxes is \$210,325. Staff  
3 failed to make this adjustment to net plant.

4  
5 Third, Staff's calculation included Duke's investment in services, meters, and  
6 transformers. Newer residential customers contribute to this investment by  
7 making Contributions in Aid of Construction ("CIAC"). That is, not all of the  
8 investment shown in Staff's calculation is paid for by Duke; some of it is paid for  
9 by the customers themselves through CIAC, which is why CIAC is deducted from  
10 rate base. Duke's cost of service study (Schedule E-3.2a, page 6, line 2) shows  
11 the residential customer-related portion of CIAC is \$1,143,794. Staff also failed  
12 to make this adjustment to net plant.

13  
14 In total, Staff's customer-related plant investment of \$93,379,284 should be  
15 reduced by \$1,387,873, which leaves a total investment of \$91,991,411, as shown  
16 on Schedule SJR-6, line 9.

17  
18 **Q19. WHAT IS SHOWN ON LINES 10 THROUGH 18 OF SCHEDULE SJR-6?**

19 **A19.** These lines reproduce Staff's calculation from page 33 of the Staff Report. I  
20 would note that while the Staff Report shows that it uses a 20.23% carrying cost  
21 on rate base, in fact it appears that Staff's calculation is based on a 19.69%



1 carrying cost rate.<sup>10</sup> I have further updated this calculation to reflect Staff's  
2 recommended gross revenue conversion factor and rate of return (using the  
3 midpoint of its return on common equity recommendation).<sup>11</sup> My calculation of  
4 the carrying charge factor is shown at the bottom of Schedule SJR-6, lines a  
5 through i, where I develop a carrying cost factor of 19.37%.

6  
7 Lines 12 through 17 use the same accounts that are shown in the Staff Report.  
8 The only difference in the amounts used is a minor difference (about \$1,000) on  
9 line 14, where the figure in Duke's cost of service study was slightly higher than  
10 the figure that Staff used.

11  
12 Line 18 of Schedule SJR-6 shows the total carrying cost and expenses of  
13 \$42,008,395 to be recovered from residential customers for direct, customer-  
14 related costs.

15

16 ***Q20. HOW MUCH OF THIS \$42 MILLION IS RECOVERED THROUGH***  
17 ***MISCELLANEOUS SERVICE CHARGES?***

18 ***A20.*** On lines 19 through 21 of Schedule SJR-6, I show that Duke already recovers  
19 \$302,499 of this revenue from residential customers through its charges for  
20 reconnection and bad checks.

---

<sup>10</sup> The Staff Report (Table 8 on p. 33) shows a carrying cost of \$18,386,381 on distribution plant of \$93,379,284.  $18,386,381 / 93,379,284 = 19.69\%$ .

<sup>11</sup> My use of Staff's rate of return recommendation does not mean that I endorse that recommendation. I am using this to correct an internal inconsistency in Staff's analysis.

1 **Q21. HOW DOES THIS RECOVERY AFFECT YOUR CUSTOMER CHARGE**  
2 **CALCULATION?**

3 **A21.** Because \$302,499 is already being recovered through other charges, residential  
4 customer charges need to recover \$41,705,896, as I show on line 22 of Schedule  
5 SJR-6. When this amount is divided by the annual number of residential bills,  
6 (shown on line 23) the monthly customer charge should be set at \$5.53.

7  
8 Of course, if modifications are made to the rate of return, tax conversion factor, or  
9 specific cost elements in the final Commission order, then this calculation should  
10 be adjusted accordingly. Subject to any such modifications, however, I  
11 recommend that the residential customer charge should be set at no more than  
12 \$5.53 per month.

13  
14 **Q22. OTHER THAN DIFFERENCES BETWEEN STAFF'S METHODOLOGY**  
15 **AND DUKE'S METHODOLOGY, ARE THERE OTHER REASONS WHY**  
16 **THE CUSTOMER CHARGE SHOULD NOT BE RAISED TO \$10.00 PER**  
17 **MONTH, AS DUKE PROPOSES?**

18 **A22.** Yes, I am particularly concerned about the impact of Duke's residential rate  
19 design proposal on its customers, particularly lower-use customers. As I  
20 discussed above, Duke is proposing a 19.6% increase to the residential class as a  
21 whole. But the impact of Duke's rate design proposal results in a few residential  
22 customers actually receiving rate decreases, while others would see the base rate

1 portion of their bills more than double, as I will describe below.

2

3 ***Q23. HOW DID YOU DETERMINE THE IMPACT OF DUKE'S RESIDENTIAL***  
4 ***RATE DESIGN ON DUKE'S CUSTOMERS?***

5 ***A23.*** In response to OCC-POD-7-57, Duke provided actual billing data for a two-year  
6 period (February 2007 through January 2009) for all of its Rate RS customers  
7 who are not on budget billing. In total, Duke provided data for 554,549 customer  
8 accounts. After reviewing the data, I found that approximately 105,000 accounts  
9 did not have a full twelve months of data for 2008, so I eliminated them from  
10 further analysis. I also found that, because of billing corrections, estimated bills,  
11 and other factors, approximately 15,000 accounts showed negative total  
12 consumption for 2008. I also eliminated those accounts from further analysis.  
13 The resulting data set had actual 2008 billing data for 434,613 Duke residential  
14 customers.

15

16 I then totaled the annual consumption for each of the 434,613 customers and  
17 calculated each customer's annual base rate bill under present rates and Duke's  
18 proposed residential rates. I also calculated the percentage change in each  
19 customer's bill under Duke's proposal. The results of that analysis are shown on  
20 Schedule SJR-7 in the "Duke Rate Design Proposal" columns.

21

22 Schedule SJR-7 shows that even though the increase to the residential class as a

1 whole is 19.6 percent, Duke's proposed rate design would result in the average  
2 residential customer receiving an increase 26.7 percent. Moreover, Duke's  
3 proposal results in vastly disparate impacts within the residential class. More than  
4 53,000 customers (12.2 percent of the residential class) would see their bills  
5 increase by 10 percent or less, while almost 129,000 customers (17.1 percent of  
6 the class) would face increases of 30 percent or more. At its most extreme, more  
7 than 12,000 customers (2.9 percent of the class) would see increases of 80 percent  
8 or more – more than four times the average increase for the class. The overall  
9 range of increases within the residential class is enormous – ranging from a  
10 decrease of 3.5 percent to an increase of 122.2 percent.

11  
12 ***Q24. WHAT DO YOU CONCLUDE FROM YOUR ANALYSIS OF DUKE'S RATE***  
13 ***DESIGN PROPOSAL?***

14 ***A24.*** I conclude that Duke's residential rate design proposal is not reasonable. The  
15 proposal penalizes low-use customers: the less electricity you use, the greater the  
16 percentage increase in your base rate bill under Duke's proposal. The disparity in  
17 impacts on customers within the same class is unreasonably large and has not  
18 been justified by Duke.

**Q25. DID YOU PERFORM A SIMILAR ANALYSIS FOR STAFF'S  
RECOMMENDED RESIDENTIAL RATE DESIGN AND YOUR PROPOSED  
RATE DESIGN?**

**A25.** Yes, I did. I performed a similar analysis for Staff's residential rate design recommendation and for my residential rate design proposal. For both of those analyses, I performed the calculations assuming Duke's proposed revenues for the residential class. This assumption was made so that the results of the different rate design proposals could be viewed in an "apples to apples" comparison, without regard to the parties' revenue requirements and inter-class allocation proposals. The results of those analyses are also presented on Schedule SJR-7.

The schedule shows that the Staff's recommendation is much closer than Duke's to being fair to all residential customers. No customer would receive an increase of less than 17.9 percent or more than 26.9 percent under Staff's proposal. The average residential customer would receive an increase of 20.09 percent, which is slightly higher than the class increase of 19.6 percent.

Schedule SJR-7 also shows that my residential rate design comes even closer to achieving fairness throughout the residential class. Under my proposal, all customers would have increases in the range of 18.8 percent to 22.9 percent. The average increase would be 19.8 percent, which is only slightly higher than the class increase of 19.6 percent. Either Staff's recommendation or my proposal

1 would result in a residential rate design that avoids grossly disparate impacts on  
2 customers based on their consumption.

3

4 ***Q26. WHAT DO YOU CONCLUDE ABOUT RESIDENTIAL RATE DESIGN?***

5 ***A26.*** For all of the reasons I discussed above – including Staff's methodology for  
6 determining customer charges, necessary modifications to the Staff methodology,  
7 and the actual impact on more than 400,000 residential customers – I conclude  
8 that Duke's rate design proposal for the residential class should be rejected.  
9 Staff's calculation of the residential customer charge needs to be modified to  
10 produce a customer charge of no more than \$5.53 per month (under Duke's  
11 proposed revenue requirement).

12

13 **V. CONCLUSION**

14 ***Q27. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?***

15 ***A27.*** Yes, it does. However, I reserve the right to incorporate any new information that  
16 may subsequently become available. I also reserve the right to supplement my  
17 testimony in the event that the PUCO Staff fails to support any recommendations  
18 made in the Staff Report, and/or changes in any positions in the Staff Report.

Scott J. Rubin  
Attorney + Consultant  
333 Oak Lane • Bloomsburg, PA 17815

---

**Current Position**

Public Utility Attorney and Consultant. 1994 to present. I provide legal, consulting, and expert witness services to various organizations interested in the regulation of public utilities.

---

**Previous Positions**

Lecturer in Computer Science, Susquehanna University, Selinsgrove, PA. 1993 to 2000.

Senior Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1990 to 1994.  
I supervised the administrative and technical staff and shared with one other senior attorney the supervision of a legal staff of 14 attorneys.

Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1983 to 1990.

Associate, Laws and Staruch, Harrisburg, PA. 1981 to 1983.

Law Clerk, U.S. Environmental Protection Agency, Washington, DC. 1980 to 1981.

Research Assistant, Rockville Consulting Group, Washington, DC. 1979.

---

**Current Professional Activities**

Member, American Bar Association, Public Utility Law Section.

Member, American Water Works Association.

Admitted to practice law before the Supreme Court of Pennsylvania, the New York State Court of Appeals, the United States District Court for the Middle District of Pennsylvania, the United States Court of Appeals for the Third Circuit, and the Supreme Court of the United States.

---

**Previous Professional Activities**

Member, American Water Works Association, Rates and Charges Subcommittee, 1998-2001.

Member, Federal Advisory Committee on Disinfectants and Disinfection By-Products in Drinking Water, U.S. Environmental Protection Agency, Washington, DC. 1992 to 1994.

Chair, Water Committee, National Association of State Utility Consumer Advocates, Washington, DC. 1990 to 1994; member of committee from 1988 to 1990.

Member, Board of Directors, Pennsylvania Energy Development Authority, Harrisburg, PA. 1990 to 1994.

Member, Small Water Systems Advisory Committee, Pennsylvania Department of Environmental Resources, Harrisburg, PA. 1990 to 1992.

Member, Ad Hoc Committee on Emissions Control and Acid Rain Compliance, National Association of State Utility Consumer Advocates, 1991.

Member, Nitrogen Oxides Subcommittee of the Acid Rain Advisory Committee, U.S. Environmental Protection Agency, Washington DC. 1991.

---

**Education**

J.D. with Honors, George Washington University, Washington, DC. 1981.

B.A. with Distinction in Political Science, Pennsylvania State University, University Park, PA. 1978.

---

**Publications and Presentations**

"Quality of Service Issues," a speech to the Pennsylvania Public Utility Commission Consumer Conference, State College, PA. 1988.

K.L. Pape and S.J. Rubin, "Current Developments in Water Utility Law," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 1990.

Presentation on Water Utility Holding Companies to the Annual Meeting of the National Association of State Utility Consumer Advocates, Orlando, FL. 1990.

"How the OCA Approaches Quality of Service Issues," a speech to the Pennsylvania Chapter of the National Association of Water Companies. 1991.

Presentation on the Safe Drinking Water Act to the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Seattle, WA. 1991.

"A Consumer Advocate's View of Federal Pre-emption in Electric Utility Cases," a speech to the Pennsylvania Public Utility Commission Electricity Conference. 1991.

Workshop on Safe Drinking Water Act Compliance Issues at the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Washington, DC. 1992.

Formal Discussant, Regional Acid Rain Workshop, U.S. Environmental Protection Agency and National Regulatory Research Institute, Charlotte, NC. 1992.

S.J. Rubin and S.P. O'Neal, "A Quantitative Assessment of the Viability of Small Water Systems in Pennsylvania," *Proceedings of the Eighth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute (Columbus, OH 1992), IV:79-97.

"The OCA's Concerns About Drinking Water," a speech to the Pennsylvania Public Utility Commission Water Conference. 1992.

Member, Technical Horizons Panel, Annual Meeting of the National Association of Water Companies, Hilton Head, SC. 1992.

M.D. Klein and S.J. Rubin, "Water and Sewer – Update on Clean Streams, Safe Drinking Water, Waste Disposal and Pennvest," *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 1992.

Presentation on Small Water System Viability to the Technical Assistance Center for Small Water Companies, Pa. Department of Environmental Resources, Harrisburg, PA. 1993



- "The Results Through a Public Service Commission Lens," speaker and participant in panel discussion at Symposium: "Impact of EPA's Allowance Auction," Washington, DC, sponsored by AER\*X. 1993.
- "The Hottest Legislative Issue of Today -- Reauthorization of the Safe Drinking Water Act," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, San Antonio, TX. 1993.
- "Water Service in the Year 2000," a speech to the Conference: "Utilities and Public Policy III: The Challenges of Change," sponsored by the Pennsylvania Public Utility Commission and the Pennsylvania State University, University Park, PA. 1993.
- "Government Regulation of the Drinking Water Supply: Is it Properly Focused?," speaker and participant in panel discussion at the National Consumers League's Forum on Drinking Water Safety and Quality, Washington, DC. 1993. Reprinted in *Rural Water*, Vol. 15 No. 1 (Spring 1994), pages 13-16.
- "Telephone Penetration Rates for Renters in Pennsylvania," a study prepared for the Pennsylvania Office of Consumer Advocate. 1993.
- "Zealous Advocacy, Ethical Limitations and Considerations," participant in panel discussion at "Continuing Legal Education in Ethics for Pennsylvania Lawyers," sponsored by the Office of General Counsel, Commonwealth of Pennsylvania, State College, PA. 1993.
- "Serving the Customer," participant in panel discussion at the Annual Conference of the National Association of Water Companies, Williamsburg, VA. 1993.
- "A Simple, Inexpensive, Quantitative Method to Assess the Viability of Small Water Systems," a speech to the Water Supply Symposium, New York Section of the American Water Works Association, Syracuse, NY. 1993.
- S.J. Rubin, "Are Water Rates Becoming Unaffordable?," *Journal American Water Works Association*, Vol. 86, No. 2 (February 1994), pages 79-86.
- "Why Water Rates Will Double (If We're Lucky): Federal Drinking Water Policy and Its Effect on New England," a briefing for the New England Conference of Public Utilities Commissioners, Andover, MA. 1994.
- "Are Water Rates Becoming Unaffordable?," a speech to the Legislative and Regulatory Conference, Association of Metropolitan Water Agencies, Washington, DC. 1994.
- "Relationships: Drinking Water, Health, Risk and Affordability," speaker and participant in panel discussion at the Annual Meeting of the Southeastern Association of Regulatory Commissioners, Charleston, SC. 1994.
- "Small System Viability: Assessment Methods and Implementation Issues," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, New York, NY. 1994.

- S.J. Rubin, "How much should we spend to save a life?," *Seattle Journal of Commerce*, August 18, 1994 (Protecting the Environment Supplement), pages B-4 to B-5.
- S. Rubin, S. Bernow, M. Fulmer, J. Goldstein, and I. Peters, *An Evaluation of Kentucky-American Water Company's Long-Range Planning*, prepared for the Utility and Rate Intervention Division, Kentucky Office of the Attorney General (Tellus Institute 1994).
- S.J. Rubin, "Small System Monitoring: What Does It Mean?," *Impacts of Monitoring for Phase II/V Drinking Water Regulations on Rural and Small Communities* (National Rural Water Association 1994), pages 6-12.
- "Surviving the Safe Drinking Water Act," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Reno, NV. 1994.
- "Safe Drinking Water Act Compliance -- Ratemaking Implications," speaker at the National Conference of Regulatory Attorneys, Scottsdale, AZ. 1995. Reprinted in *Water*, Vol. 36, No. 2 (Summer 1995), pages 28-29.
- S.J. Rubin, "Water: Why Isn't it Free? The Case of Small Utilities in Pennsylvania," *Utilities, Consumers & Public Policy: Issues of Quality, Affordability, and Competition, Proceedings of the Fourth Utilities, Consumers and Public Policy Conference* (Pennsylvania State University 1995), pages 177-183.
- S.J. Rubin, "Water Rates: An Affordable Housing Issue?," *Home Energy*, Vol. 12 No. 4 (July/August 1995), page 37.
- Speaker and participant in the Water Policy Forum, sponsored by the National Association of Water Companies, Naples, FL. 1995.
- Participant in panel discussion on "The Efficient and Effective Maintenance and Delivery of Potable Water at Affordable Rates to the People of New Jersey," at The New Advocacy: Protecting Consumers in the Emerging Era of Utility Competition, a conference sponsored by the New Jersey Division of the Ratepayer Advocate, Newark, NJ. 1995.
- J.E. Cromwell III, and S.J. Rubin, *Development of Benchmark Measures for Viability Assessment* (Pa. Department of Environmental Protection 1995).
- S. Rubin, "A Nationwide Practice from a Small Town in Pa.," *Lawyers & the Internet - a Supplement to the Legal Intelligencer and Pa. Law Weekly* (February 12, 1996), page S6.
- "Changing Customers' Expectations in the Water Industry," speaker at the Mid-America Regulatory Commissioners Conference, Chicago, IL. 1996, reprinted in *Water* Vol. 37 No. 3 (Winter 1997), pages 12-14..
- "Recent Federal Legislation Affecting Drinking Water Utilities," speaker at Pennsylvania Public Utility Law Conference, Pennsylvania Bar Institute, Hershey, PA. 1996.
- "Clean Water at Affordable Rates: A Ratepayers Conference," moderator at symposium sponsored by the New Jersey Division of Ratepayer Advocate, Trenton, NJ. 1996.

"Water Workshop: How New Laws Will Affect the Economic Regulation of the Water Industry," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, San Francisco, CA. 1996.

E.T. Castillo, S.J. Rubin, S.K. Keefe, and R.S. Raucher, "Restructuring Small Systems," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 65-74.

J.E. Cromwell III, S.J. Rubin, F.C. Marrocco, and M.E. Leevan, "Business Planning for Small System Capacity Development," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 47-57.

"Capacity Development – More than Viability Under a New Name," speaker at National Association of Regulatory Utility Commissioners Winter Meetings, Washington, DC. 1997.

E. Castillo, S.K. Keefe, R.S. Raucher, and S.J. Rubin, *Small System Restructuring to Facilitate SDWA Compliance: An Analysis of Potential Feasibility* (AWWA Research Foundation, 1997).

H. Himmelberger, et al., *Capacity Development Strategy Report for the Texas Natural Resource Conservation Commission* (Aug. 1997).

Briefing on Issues Affecting the Water Utility Industry, Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.

"Capacity Development in the Water Industry," speaker at the Annual Meeting of the National Association of Regulatory Utility Commissioners, Boston, MA. 1997.

"The Ticking Bomb: Competitive Electric Metering, Billing, and Collection," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.

Scott J. Rubin, "A Nationwide Look at the Affordability of Water Service," *Proceedings of the 1998 Annual Conference of the American Water Works Association*, Water Research, Vol. C, No. 3, pages 113-129 (American Water Works Association, 1998).

Scott J. Rubin, "30 Technology Tips in 30 Minutes," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 101-110 (Pa. Bar Institute, 1998).

Scott J. Rubin, "Effects of Electric and Gas Deregulation on the Water Industry," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 139-146 (Pa. Bar Institute, 1998).

Scott J. Rubin, *The Challenges and Changing Mission of Utility Consumer Advocates* (American Association of Retired Persons, 1999).

"Consumer Advocacy for the Future," speaker at the Age of Awareness Conference, Changes and Choices: Utilities in the New Millennium, Carlisle, PA. 1999.

Keynote Address, \$1 Energy Fund, Inc., Annual Membership Meeting, Monroeville, PA. 1999.

- Scott J. Rubin, "Assessing the Effect of the Proposed Radon Rule on the Affordability of Water Service," prepared for the American Water Works Association. 1999.
- Scott J. Rubin and Janice A. Beecher, The Impacts of Electric Restructuring on the Water and Wastewater Industry, *Proceedings of the Small Drinking Water and Wastewater Systems International Symposium and Technology Expo* (Phoenix, AZ 2000), pp. 66-75.
- American Water Works Association, *Principles of Water Rates, Fees, and Charges, Manual M1 – Fifth Edition* (AWWA 2000), Member, Editorial Committee.
- Janice A. Beecher and Scott J. Rubin, presentation on "Special Topics in Rate Design: Affordability" at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
- Scott J. Rubin, "The Future of Drinking Water Regulation," a speech at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
- Janice A. Beecher and Scott J. Rubin, "Deregulation Impacts and Opportunities," a presentation at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
- Scott J. Rubin, "Estimating the Effect of Different Arsenic Maximum Contaminant Levels on the Affordability of Water Service," prepared for the American Water Works Association. 2000.
- Janice A. Beecher and Scott J. Rubin, *Deregulation! Impacts on the Water Industry*, American Water Works Association Research Foundation, Denver, CO. 2000.
- Scott J. Rubin, Methods for Assessing, Evaluating, and Assisting Small Water Systems, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
- Scott J. Rubin, Consumer Issues in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
- "Be Utility Wise in a Restructured Utility Industry," Keynote Address at Be UtilityWise Conference, Pittsburgh, PA. 2000.
- Scott J. Rubin, Jason D. Sharp, and Todd S. Stewart, "The Wired Administrative Lawyer," *5<sup>th</sup> Annual Administrative Law Symposium*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.
- Scott J. Rubin, "Current Developments in the Water Industry," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.
- Scott J. Rubin, "Viewpoint: Change Sickening Attitudes," *Engineering News-Record*, Dec. 18, 2000.
- Janice A. Beecher and Scott J. Rubin, "Ten Practices of Highly Effective Water Utilities," *Opflow*, April 2001, pp. 1, 6-7, 16; reprinted in *Water and Wastes Digest*, December 2004, pp. 22-25.
- Scott J. Rubin, "Pennsylvania Utilities: How Are Consumers, Workers, and Corporations Faring in the Deregulated Electricity, Gas, and Telephone Industries?" Keystone Research Center. 2001.

- Scott J. Rubin, "Guest Perspective: A First Look at the Impact of Electric Deregulation on Pennsylvania," *LEAP Letter*, May-June 2001, pp. 2-3.
- Scott J. Rubin, Consumer Protection in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.
- Scott J. Rubin, Impacts of Deregulation on the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.
- Scott J. Rubin, "Economic Characteristics of Small Systems," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 7-22.
- Scott J. Rubin, "Affordability of Water Service," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 23-42.
- Scott J. Rubin, "Criteria to Assess the Affordability of Water Service," White Paper, National Rural Water Association, 2001.
- Scott J. Rubin, Providing Affordable Water Service to Low-Income Families, presentation to Portland Water Bureau, Portland, OR. 2001.
- Scott J. Rubin, Issues Relating to the Affordability and Sustainability of Rates for Water Service, presentation to the Water Utility Council of the American Water Works Association, New Orleans, LA. 2002.
- Scott J. Rubin, The Utility Industries Compared – Water, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
- Scott J. Rubin, Legal Perspective on Water Regulation, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
- Scott J. Rubin, Regulatory Options for Water Utilities, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
- Scott J. Rubin, Overview of Small Water System Consolidation, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.
- Scott J. Rubin, Defining Affordability and Low-Income Household Tradeoffs, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.
- Scott J. Rubin, "Thinking Outside the Hearing Room," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2002.
- Scott J. Rubin, "Update of Affordability Database," White Paper, National Rural Water Association. 2003.
- Scott J. Rubin, *Understanding Telephone Penetration in Pennsylvania*, Council on Utility Choice, Harrisburg, PA. 2003.

- Scott J. Rubin, *The Cost of Water and Wastewater Service in the United States*, National Rural Water Association, 2003.
- Scott J. Rubin, What Price Safer Water? Presentation at Annual Conference of National Association of Regulatory Utility Commissioners, Atlanta, GA. 2003.
- George M. Aman, III, Jeffrey P. Garton, Eric Petersen, and Scott J. Rubin, Challenges and Opportunities for Improving Water Supply Institutional Arrangements, *Water Law Conference*, Pennsylvania Bar Institute, Mechanicsburg, PA. 2004.
- Scott J. Rubin, Serving Low-Income Water Customers. Presentation at American Water Works Association Annual Conference, Orlando, FL. 2004.
- Scott J. Rubin, Thinking Outside the Bill: Serving Low-Income Water Customers. Presentation at National League of Cities Annual Congress of Cities, Indianapolis, IN. 2004.
- Scott J. Rubin, Buying and Selling a Water System – Ratemaking Implications, *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2005.
- Scott J. Rubin, *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*, American Water Works Association. 2005.
- Scott J. Rubin, "Census Data Shed Light on US Water and Wastewater Costs," *Journal American Water Works Association*, Vol. 97, No. 4 (April 2005), pages 99-110, reprinted in Maxwell, *The Business of Water: A Concise Overview of Challenges and Opportunities in the Water Market.*, American Water Works Association, Denver, CO. 2008.
- Scott J. Rubin, Review of U.S. Environmental Protection Agency Notice Concerning Revision of National-Level Affordability Methodology, National Rural Water Association. 2006.
- Robert S. Raucher, et al., *Regional Solutions to Water Supply Provision*, American Water Works Association Research Foundation, Denver, CO. 2007.
- Scott J. Rubin, Robert Raucher, and Megan Harrod, The Relationship Between Household Financial Distress and Health: Implications for Drinking Water Regulation, National Rural Water Association. 2007.
- John Cromwell and Scott Rubin, *Estimating Benefits of Regional Solutions for Water and Wastewater Service*, American Water Works Association Research Foundation, Denver, CO. 2008.

---

**Testimony as an Expert Witness**

- Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00922404. 1992. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate.
- Pa. Public Utility Commission v. Shenango Valley Water Co.*, Pa. Public Utility Commission, Docket R-00922420. 1992. Concerning cost allocation, on behalf of the Pa. Office of Consumer Advocate

- Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00922482. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate
- Pa. Public Utility Commission v. Colony Water Co.*, Pa. Public Utility Commission, Docket R-00922375. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate
- Pa. Public Utility Commission v. Dauphin Consolidated Water Supply Co. and General Waterworks of Pennsylvania, Inc.*, Pa. Public Utility Commission, Docket R-00932604. 1993. Concerning rate design and cost of service, on behalf of the Pa. Office of Consumer Advocate
- West Penn Power Co. v. State Tax Department of West Virginia*, Circuit Court of Kanawha County, West Virginia, Civil Action No. 89-C-3056. 1993. Concerning regulatory policy and the effects of a taxation statute on out-of-state utility ratepayers, on behalf of the Pa. Office of Consumer Advocate
- Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00932667. 1993. Concerning rate design and affordability of service, on behalf of the Pa. Office of Consumer Advocate
- Pa. Public Utility Commission v. National Utilities, Inc.*, Pa. Public Utility Commission, Docket R-00932828. 1994. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate
- An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company*, Ky. Public Service Commission, Case No. 93-434. 1994. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Utility and Rate Intervention Division.
- The Petition on Behalf of Gordon's Corner Water Company for an Increase in Rates*, New Jersey Board of Public Utilities, Docket No. WR94020037. 1994. Concerning revenue requirements and rate design, on behalf of the New Jersey Division of Ratepayer Advocate.
- Re Consumers Maine Water Company Request for Approval of Contracts with Consumers Water Company and with Ohio Water Service Company*, Me. Public Utilities Commission, Docket No. 94-352. 1994. Concerning affiliated interest agreements, on behalf of the Maine Public Advocate.
- In the Matter of the Application of Potomac Electric Power Company for Approval of its Third Least-Cost Plan*, D.C. Public Service Commission, Formal Case No. 917, Phase II. 1995. Concerning Clean Air Act implementation and environmental externalities, on behalf of the District of Columbia Office of the People's Counsel.
- In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of the Dayton Power and Light Company and Related Matters*, Ohio Public Utilities Commission, Case No. 94-105-EL-EFC. 1995. Concerning Clean Air Act implementation (case settled before testimony was filed), on behalf of the Office of the Ohio Consumers' Counsel.
- Kennebec Water District Proposed Increase in Rates*, Maine Public Utilities Commission, Docket No. 95-091. 1995. Concerning the reasonableness of planning decisions and the relationship between a publicly owned water district and a very large industrial customer, on behalf of the Maine Public Advocate.

*Winter Harbor Water Company, Proposed Schedule Revisions to Introduce a Readiness-to-Serve Charge*, Maine Public Utilities Commission, Docket No. 95-271. 1995 and 1996. Concerning standards for, and the reasonableness of, imposing a readiness to serve charge and/or exit fee on the customers of a small investor-owned water utility, on behalf of the Maine Public Advocate.

*In the Matter of the 1995 Long-Term Electric Forecast Report of the Cincinnati Gas & Electric Company*, Public Utilities Commission of Ohio, Case No. 95-203-EL-FOR, and *In the Matter of the Two-Year Review of the Cincinnati Gas & Electric Company's Environmental Compliance Plan Pursuant to Section 4913.05, Revised Cost*, Case No. 95-747-EL-ECP. 1996. Concerning the reasonableness of the utility's long-range supply and demand-management plans, the reasonableness of its plan for complying with the Clean Air Act Amendments of 1990, and discussing methods to ensure the provision of utility service to low-income customers, on behalf of the Office of the Ohio Consumers' Counsel.

*In the Matter of Notice of the Adjustment of the Rates of Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 95-554. 1996. Concerning rate design, cost of service, and sales forecast issues, on behalf of the Kentucky Office of Attorney General.

*In the Matter of the Application of Citizens Utilities Company for a Hearing to Determine the Fair Value of its Properties for Ratemaking Purposes, to Fix a Just and Reasonable Rate of Return Thereon, and to Approve Rate Schedules Designed to Provide such Rate of Return*, Arizona Corporation Commission, Docket Nos. E-1032-95-417, et al. 1996. Concerning rate design, cost of service, and the price elasticity of water demand, on behalf of the Arizona Residential Utility Consumer Office.

*Cochrane v. Bangor Hydro-Electric Company*, Maine Public Utilities Commission, Docket No. 96-053. 1996. Concerning regulatory requirements for an electric utility to engage in unregulated business enterprises, on behalf of the Maine Public Advocate.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-106-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-107-EL-EFC and 96-108-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-101-EL-EFC and 96-102-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company (Phase II)*, Kentucky Public Service Commission, Docket No. 93-434. 1997. Concerning supply



and demand planning, on behalf of the Kentucky Office of Attorney General, Public Service Litigation Branch.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-103-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*Bangor Hydro-Electric Company Petition for Temporary Rate Increase*, Maine Public Utilities Commission, Docket No. 97-201. 1997. Concerning the reasonableness of granting an electric utility's request for emergency rate relief, and related issues, on behalf of the Maine Public Advocate.

*Testimony concerning H.B. 1068 Relating to Restructuring of the Natural Gas Utility Industry*, Consumer Affairs Committee, Pennsylvania House of Representatives. 1997. Concerning the provisions of proposed legislation to restructure the natural gas utility industry in Pennsylvania, on behalf of the Pennsylvania AFL-CIO Gas Utility Caucus.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 97-107-EL-EFC and 97-108-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*In the Matter of the Petition of Valley Road Sewerage Company for a Revision in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR92080846J. 1997. Concerning the revenue requirements and rate design for a wastewater treatment utility, on behalf of the New Jersey Division of Ratepayer Advocate.

*Bangor Gas Company, L.L.C., Petition for Approval to Furnish Gas Service in the State of Maine*, Maine Public Utilities Commission, Docket No. 97-795. 1998. Concerning the standards and public policy concerns involved in issuing a certificate of public convenience and necessity for a new natural gas utility, and related ratemaking issues, on behalf of the Maine Public Advocate.

*In the Matter of the Investigation on Motion of the Commission into the Adequacy of the Public Utility Water Service Provided by Tidewater Utilities, Inc., in Areas in Southern New Castle County, Delaware*, Delaware Public Service Commission, Docket No. 309-97. 1998. Concerning the standards for the provision of efficient, sufficient, and adequate water service, and the application of those standards to a water utility, on behalf of the Delaware Division of the Public Advocate.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters*, Public Utilities Commission of Ohio, Case No. 97-103-EL-EFC. 1998. Concerning fuel-related transactions with affiliated companies and the appropriate ratemaking treatment and regulatory safeguards involving such transactions, on behalf of the Ohio Consumers' Counsel.

*Olde Port Mariner Fleet, Inc. Complaint Regarding Casco Bay Island Transit District's Tour and Charter Service*, Maine Public Utilities Commission, Docket No. 98-161. 1998. Concerning the standards

and requirements for allocating costs and separating operations between regulated and unregulated operations of a transportation utility, on behalf of the Maine Public Advocate and Olde Port Mariner Fleet, Inc.

*Central Maine Power Company Investigation of Stranded Costs, Transmission and Distribution Utility Revenue Requirements, and Rate Design*, Maine Public Utilities Commission, Docket No. 97-580. 1998. Concerning the treatment of existing rate discounts when designing rates for a transmission and distribution electric utility, on behalf of the Maine Public Advocate.

*Pa. Public Utility Commission v. Manufacturers Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00984275. 1998. Concerning rate design on behalf of the Manufacturers Water Industrial Users.

*In the Matter of Petition of Pennsgrove Water Supply Company for an Increase in Rates for Water Service*, New Jersey Board of Public Utilities, Docket No. WR98030147. 1998. Concerning the revenue requirements, level of affiliated charges, and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

*In the Matter of Petition of Seaview Water Company for an Increase in Rates for Water Service*, New Jersey Board of Public Utilities, Docket No. WR98040193. 1999. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 98-101-EL-EFC and 98-102-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Dayton Power and Light Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 98-105-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 99-106-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

*County of Suffolk, et al. v. Long Island Lighting Company, et al.*, U.S. District Court for the Eastern District of New York, Case No. 87-CV-0646. 2000. Submitted two affidavits concerning the calculation and collection of court-ordered refunds to utility customers, on behalf of counsel for the plaintiffs.

*Northern Utilities, Inc., Petition for Waivers from Chapter 820*, Maine Public Utilities Commission, Docket No. 99-254. 2000. Concerning the standards and requirements for defining and separating a natural gas utility's core and non-core business functions, on behalf of the Maine Public Advocate.

*Notice of Adjustment of the Rates of Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 2000-120. 2000. Concerning the appropriate methods for allocating costs and designing rates, on behalf of the Kentucky Office of Attorney General.*

*In the Matter of the Petition of Gordon's Corner Water Company for an Increase in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR00050304. 2000. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.*

*Testimony concerning Arsenic in Drinking Water: An Update on the Science, Benefits, and Costs, Committee on Science, United States House of Representatives. 2001. Concerning the effects on low-income households and small communities from a more stringent regulation of arsenic in drinking water.*

*In the Matter of the Application of The Cincinnati Gas & Electric Company for an Increase in Gas Rates in its Service Territory, Public Utilities Commission of Ohio, Case No. 01-1228-GA-AIR, et al. 2002. Concerning the need for and structure of a special rider and alternative form of regulation for an accelerated main replacement program, on behalf of the Ohio Consumers' Counsel.*

*Pennsylvania State Treasurer's Hearing on Enron and Corporate Governance Issues. 2002. Concerning Enron's role in Pennsylvania's electricity market and related issues, on behalf of the Pennsylvania AFL-CIO.*

*An Investigation into the Feasibility and Advisability of Kentucky-American Water Company's Proposed Solution to its Water Supply Deficit, Kentucky Public Service Commission, Case No. 2001-00117. 2002. Concerning water supply planning, regulatory oversight, and related issue, on behalf of the Kentucky Office of Attorney General.*

*Joint Application of Pennsylvania-American Water Company and Thames Water Aqua Holdings GmbH, Pennsylvania Public Utility Commission, Docket Nos. A-212285F0096 and A-230073F0004. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.*

*Application for Approval of the Transfer of Control of Kentucky-American Water Company to RWE AG and Thames Water Aqua Holdings GmbH, Kentucky Public Service Commission, Case No. 2002-00018. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Kentucky Office of Attorney General.*

*Joint Petition for the Consent and Approval of the Acquisition of the Outstanding Common Stock of American Water Works Company, Inc., the Parent Company and Controlling Shareholder of West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 01-1691-W-PC. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Consumer Advocate Division of the West Virginia Public Service Commission.*

*Joint Petition of New Jersey-American Water Company, Inc. and Thames Water Aqua Holdings GmbH for Approval of Change in Control of New Jersey-American Water Company, Inc., New Jersey Board of Public Utilities, Docket No. WM01120833. 2002. Concerning the risks and benefits associated*

- with the proposed acquisition of a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
- Illinois-American Water Company, Proposed General Increase in Water Rates*, Illinois Commerce Commission, Docket No. 02-0690. 2003. Concerning rate design and cost of service issues, on behalf of the Illinois Office of the Attorney General.
- Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00038304. 2003. Concerning rate design and cost of service issues, on behalf of the Pennsylvania Office of Consumer Advocate.
- West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 03-0353-W-42T. 2003. Concerning affordability, rate design, and cost of service issues, on behalf of the West Virginia Consumer Advocate Division.
- Petition of Seabrook Water Corp. for an Increase in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR3010054. 2003. Concerning revenue requirements, rate design, prudence, and regulatory policy, on behalf of the New Jersey Division of Ratepayer Advocate.
- Chesapeake Ranch Water Co. v. Board of Commissioners of Calvert County*, U.S. District Court for Southern District of Maryland, Civil Action No. 8:03-cv-02527-AW. 2004. Submitted expert report concerning the expected level of rates under various options for serving new commercial development, on behalf of the plaintiff.
- Testimony concerning Lead in Drinking Water*, Committee on Government Reform, United States House of Representatives. 2004. Concerning the trade-offs faced by low-income households when drinking water costs increase, including an analysis of H.R. 4268.
- West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 04-0373-W-42T. 2004. Concerning affordability and rate comparisons, on behalf of the West Virginia Consumer Advocate Division.
- West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 04-0358-W-PC. 2004. Concerning costs, benefits, and risks associated with a wholesale water sales contract, on behalf of the West Virginia Consumer Advocate Division.
- Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2004-00103. 2004. Concerning rate design and tariff issues, on behalf of the Kentucky Office of Attorney General.
- New Landing Utility, Inc.*, Illinois Commerce Commission, Docket No. 04-0610. 2005. Concerning the adequacy of service provided by, and standards of performance for, a water and wastewater utility, on behalf of the Illinois Office of Attorney General.
- People of the State of Illinois v. New Landing Utility, Inc.*, Circuit Court of the 15<sup>th</sup> Judicial District, Ogle County, Illinois, No. 00-CH-97. 2005. Concerning the standards of performance for a water and wastewater utility, including whether a receiver should be appointed to manage the utility's operations, on behalf of the Illinois Office of Attorney General.

- Hope Gas, Inc. d/b/a Dominion Hope*, West Virginia Public Service Commission, Case No. 05-0304-G-42T. 2005. Concerning the utility's relationships with affiliated companies, including an appropriate level of revenues and expenses associated with services provided to and received from affiliates, on behalf of the West Virginia Consumer Advocate Division.
- Monongahela Power Co. and The Potomac Edison Co.*, West Virginia Public Service Commission, Case Nos. 05-0402-E-CN and 05-0750-E-PC. 2005. Concerning review of a plan to finance the construction of pollution control facilities and related issues, on behalf of the West Virginia Consumer Advocate Division.
- Joint Application of Duke Energy Corp., et al., for Approval of a Transfer and Acquisition of Control*, Case Kentucky Public Service Commission, No. 2005-00228. 2005. Concerning the risks and benefits associated with the proposed acquisition of an energy utility, on behalf of the Kentucky Office of the Attorney General.
- Commonwealth Edison Company proposed general revision of rates, restructuring and price unbundling of bundled service rates, and revision of other terms and conditions of service*, Illinois Commerce Commission, Docket No. 05-0597. 2005. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.
- Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00051030. 2006. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.
- Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, and Illinois Power Company d/b/a AmerenIP, proposed general increases in rates for delivery service*, Illinois Commerce Commission, Docket Nos. 06-0070, et al. 2006. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.
- Grens, et al., v. Illinois-American Water Co.*, Illinois Commerce Commission, Docket Nos. 5-0681, et al. 2006. Concerning utility billing, metering, meter reading, and customer service practices, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.
- Commonwealth Edison Company Petition for Approval of Tariffs Implementing ComEd's Proposed Residential Rate Stabilization Program*, Illinois Commerce Commission, Docket No. 06-0411. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.
- Illinois-American Water Company, Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges Pursuant to 83 Ill. Adm. Code 655*, Illinois Commerce Commission, Docket No. 06-0196. 2006. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.
- Illinois-American Water Company, et al.*, Illinois Commerce Commission, Docket No. 06-0336. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Illinois Office of Attorney General.

*Joint Petition of Kentucky-American Water Company, et al., Kentucky Public Service Commission, Docket No. 2006-00197. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Kentucky Office of Attorney General.*

*Aqua Illinois, Inc. Proposed Increase in Water Rates for the Kankakee Division, Illinois Commerce Commission, Docket No. 06-0285. 2006. Concerning various revenue requirement, rate design, and tariff issues, on behalf of the County of Kankakee.*

*Housing Authority for the City of Pottsville v. Schuylkill County Municipal Authority, Court of Common Pleas of Schuylkill County, Pennsylvania, No. S-789-2000. 2006. Concerning the reasonableness and uniformity of rates charged by a municipal water authority, on behalf of the Pottsville Housing Authority.*

*Application of Pennsylvania-American Water Company for Approval of a Change in Control, Pennsylvania Public Utility Commission, Docket No. A-212285F0136. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.*

*Application of Artesian Water Company, Inc., for an Increase in Water Rates, Delaware Public Service Commission, Docket No. 06-158. 2006. Concerning rate design and cost of service, on behalf of the Staff of the Delaware Public Service Commission.*

*Central Illinois Light Company, Central Illinois Public Service Company, and Illinois Power Company: Petition Requesting Approval of Deferral and Securitization of Power Costs, Illinois Commerce Commission, Docket No. 06-0448. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.*

*Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Revising the Distribution System Improvement Charge, Pennsylvania Public Utility Commission, Docket No. P-00062241. 2007. Concerning the reasonableness of a water utility's proposal to increase the cap on a statutorily authorized distribution system surcharge, on behalf of the Pennsylvania Office of Consumer Advocate.*

*Adjustment of the Rates of Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 2007-00143. 2007. Concerning rate design and cost of service, on behalf of the Kentucky Office of Attorney General.*

*Application of Kentucky-American Water Company for a Certificate of Convenience and Necessity Authorizing the Construction of Kentucky River Station II, Associated Facilities and Transmission Main, Kentucky Public Service Commission, Case No. 2007-00134. 2007. Concerning the life-cycle costs of a planned water supply source and the imposition of conditions on the construction of that project, on behalf of the Kentucky Office of Attorney General.*

*Pa. Public Utility Commission v. Pennsylvania-American Water Company, Pennsylvania Public Utility Commission, Docket No. R-00072229. 2007. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.*

*Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges, Illinois Commerce Commission, Docket*

No. 07-0195. 2007. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.

*In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates for Water Service Provided In the Lake Erie Division*, Public Utilities Commission of Ohio, Case No.07-0564-WW-AIR. 2007. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.

*Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00072711. 2008. Concerning rate design, on behalf of the Masthope Property Owners Council.

*Illinois-American Water Company Proposed increase in water and sewer rates*, Illinois Commerce Commission, Docket No. 07-0507. 2008. Concerning rate design and demand studies, on behalf of the Illinois Office of Attorney General.

*Central Illinois Light Company, d/b/a AmerenCILCO; Central Illinois Public Service Company, d/b/a AmerenCIPS; Illinois Power Company, d/b/a AmerenIP: Proposed general increase in rates for electric delivery service*, Illinois Commerce Commission Docket Nos. 07-0585, 07-0586, 07-0587. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.

*Commonwealth Edison Company: Proposed general increase in electric rates*, Illinois Commerce Commission Docket No. 07-0566. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.

*In the Matter of Application of Ohio American Water Co. to Increase Its Rates*, Public Utilities Commission of Ohio, Case No. 07-1112-WS-AIR. 2008. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.

*In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Service*, Public Utilities Commission of Ohio, Case Nos. 07-829-GA-AIR, et al. 2008. Concerning the need for, and structure of, an accelerated infrastructure replacement program and rate surcharge, on behalf of the Office of the Ohio Consumers' Counsel.

*Pa. Public Utility Commission v. Pennsylvania American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2032689. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.

*Pa. Public Utility Commission v. York Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2023067. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.

*Northern Illinois Gas Company d/b/a Nicor Gas Company*, Illinois Commerce Commission, Docket No. 08-0363. 2008. Concerning rate design, cost of service, study, and automatic rate adjustments, on behalf of the Illinois Office of Attorney General.

*West Virginia American Water Company, West Virginia Public Service Commission, Case No. 08-0900-W-42T. 2008. Concerning affiliated interest charges and relationships, on behalf of the Consumer Advocate Division of the Public Service Commission of West Virginia.*

*Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges, Illinois Commerce Commission, Docket No. 08-0218. 2008. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.*



Duke Energy Ohio, Inc.  
Case Nos. 08-709-EL-AIR, et al.

### Duke Proposed Residential Rate Design (Rates RS and CUR)

	Billing Units	Present Rate	Present Revenue	Proposed Rate	Proposed Revenue	Change in Revenue	Percent Change
Customer charge	7,541,871	\$ 4.500000	\$ 33,938,420	\$ 10.000000	\$ 75,418,710	\$ 41,480,290	122.2%
Per KWH charge	7,507,650,881	0.019949	149,770,127	0.019217	144,274,527	(5,495,600)	-3.7%
Total			\$ 183,708,547		\$ 219,693,237	\$ 35,984,690	19.6%

Source: Duke Sch. E-4 (total of Rates RS and CUR)

**Staff Proposed Residential Rate Design (Rates RS and CUR)**

	Billing Units	Present Rate	Present Revenue	Proposed Rate	Proposed Revenue	Change in Revenue	Percent Change
Customer charge	7,541,871	\$ 4.500000	\$ 33,938,420	\$ 5.710000	\$ 43,064,083	\$ 9,125,663	26.9%
Per KWH charge	7,507,650,881	0.019949	149,770,127	0.024343	182,758,745	32,988,618	22.0%
Total			\$ 183,708,547		\$ 225,822,828	\$ 42,114,281	22.9%

Sources: Duke Sch. E-4 (total of Rates RS and CUR) and Staff Report p. 34

**Illustration of Straight Scale-back of Duke's Inter-Class Allocation Assuming a Rate Increase Equal to 50% of Duke's Request**

	Present	Duke Proposed			Hypothetical Increase: 50% of Duke's Request		
		Revenue	Increase	% Increase	Revenue	Increase	% Increase
RS	\$ 183,880,582	\$ 219,874,558	\$ 35,993,976	19.6%	\$ 202,500,965	\$ 18,620,383	10.1%
DS	82,512,029	117,878,702	35,366,673	42.9%	100,807,896	18,295,867	22.2%
EH	1,063,549	1,614,420	550,871	51.8%	1,348,525	284,976	26.8%
DM	18,263,896	16,259,178	(2,004,718)	-11.0%	16,259,178	(2,004,718)	-11.0%
GSFL	463,026	588,784	125,758	27.2%	528,083	65,057	14.1%
DP	16,417,391	32,889,792	16,472,401	100.3%	24,938,884	8,521,493	51.9%
TS	1,186,721	119,800	(1,066,921)	-89.9%	119,800	(1,066,921)	-89.9%
Light	7,140,221	7,306,632	166,411	2.3%	7,226,309	86,088	1.2%
Total	\$ 310,927,415	\$ 396,531,866	\$ 85,604,451	27.5%	\$ 353,729,640	\$ 42,802,225	13.8%

Target

42,802,226

Note: Allocation assumes that classes receiving rate reduction would receive same reduction with smaller rate increase.

Duke Energy Ohio, Inc.  
Case Nos. 08-709-EL-AIR, et al.

**Alternative Class Allocation of Rate Increase, Assuming Duke Granted 75% of its Proposed Rate Increase**

	Present	Duke Proposed			OCC Alternative with 75% of Duke's Requested Increase					
		Revenue	Increase	% Increase	Step 1	Step 2	Step 3	Step 4	Revenue	% Increase
RS	\$ 183,880,582	\$ 219,874,558	\$ 35,993,976	19.6%	\$ 210,876,064	\$ 26,995,482	\$ 291,624	\$ 27,287,106	\$ 211,167,688	14.8%
DS	82,512,029	117,878,702	35,366,673	42.9%	109,037,034	26,525,005	150,789	26,675,794	109,187,823	32.3%
EH	1,063,549	1,614,420	550,871	51.8%	1,476,702	413,153	2,042	415,195	1,478,744	39.0%
DM	18,263,896	16,259,178	(2,004,718)	-11.0%	16,760,357	-	-	-	18,263,896	0.0%
GSFL	463,026	588,784	125,758	27.2%	557,345	94,319	771	95,090	558,116	20.5%
DP	16,417,391	32,889,792	16,472,401	100.3%	28,771,692	10,662,219	-	10,662,219	27,079,610	64.9%
TS	1,186,721	119,800	(1,066,921)	-89.9%	386,530	(1,066,921)	-	(1,066,921)	119,800	-89.9%
Light	7,140,221	7,306,632	166,411	2.3%	7,265,029	124,808	10,047	134,855	7,275,076	1.9%
Total	\$ 310,927,415	\$ 396,531,866	\$ 85,604,451	27.5%	\$ 375,130,753	\$ 63,748,065	\$ 455,273	\$ 64,203,338	\$ 375,130,753	20.6%
Shortfall			64,203,338			\$ 455,273				

- Step 1: Begin with 75 percent of Duke proposed increase  
 Step 2: Cap increase to Rate DP at 64.9%; eliminate reduction for Rate DM; retain decrease in TS  
 Step 3: Allocate Shortfall in proportion to each class's revenue, excluding DM, DP, and TS  
 Step 4: Step 1 + Step 2 = Increase to class

**Residential Customer Charge Calculation**

Line	Account	Balance	Source
	<b>Plant Accounts (Net Plant in Service)</b>		
1	Transformers (minimum size)	\$ 48,136,460	Duke Sch. E-3.2a, p. 4, l. 18
2	Services	13,106,712	Duke Sch. E-3.2a, p. 4, l. 19
3	Meters	32,136,112	Duke Sch. E-3.2a, p. 4, l. 20
4	Subtotal Net Plant	\$ 93,379,284	Sum of lines 1 through 3
	<b>Adjustments to Net Plant</b>		
5	ADIT - meters and transformers	\$ (33,754)	Duke Sch. E-3.2a, p. 6, l. 4
6	ADIT - property taxes	(210,325)	Duke Sch. E-3.2a, p. 7, l. 26
7	CIAC - distribution / customer	(1,143,794)	Duke Sch. E-3.2a, p. 6, l. 2
8	Subtotal Adjustments	\$ (1,387,873)	Sum of lines 5 through 7
9	<b>Customer-Related Rate Base</b>	\$ 91,991,411	Line 4 + line 8
10	Carrying Cost Rate (Return, depreciation, income tax, property tax)	19.37%	Carrying cost calculation, below
11	<b>Carrying Cost on Rate Base</b>	\$ 17,818,736	Line 9 x line 10
	<b>Expense Accounts</b>		
12	Meter expense / maintenance	\$ 1,168,373	Duke Sch. E-3.2a, p. 10, l. 40
13	Customer installation expense	1,047,352	Staff Report, p. 33
14	Customer accounts / supervision / meter read	19,811,567	Duke Sch. E-3.2a, p. 11, l. 2
15	Customer assistance	2,159,287	Duke Sch. E-3.2a, p. 11, l. 15
16	Customer information and instruction	3,080	Duke Sch. E-3.2a, p. 11, l. 16
17	<b>Customer-Related Expenses</b>	\$ 24,189,659	Sum of lines 12 through 16
18	<b>Total Carrying Cost and Expenses</b>	\$ 42,008,395	Line 11 + line 17
	<b>Recovery through Other Operating Revenues</b>		
19	Reconnection and customer diversion charges	\$ (214,743)	Duke Sch. E-3.2a, p. 20, l. 5
20	Bad check charges	(87,756)	Duke Sch. E-3.2a, p. 20, l. 6
21	<b>Other Operating Revenues</b>	\$ (302,499)	Line 19 + line 20
22	<b>Amount to be Recovered through Customer Charge</b>	\$ 41,705,896	Line 18 + line 21
23	Number of Residential Bills/Year	7,545,060	Duke Sch. E-4, p. 1, l. 6
24	<b>Customer Cost per Bill</b>	\$ 5.53	Line 22 / line 23
	<b>Carrying Cost Calculation</b>		
a	Equity component of capital structure	51.59%	Staff report, p. 14
b	Mid-point Staff return on equity	10.63%	Staff report, p. 16
c	Weighted after-tax cost of equity	5.48%	Line a x line b
d	Gross revenue conversion factor	1.5700221	Staff report, Sch. A-1, l. 7
e	Weighted pre-tax cost of equity	8.61%	Line c x line d
f	Weighted cost of debt	3.12%	Staff Report, p. 14
g	Property tax factor	4.35%	Staff W/P
h	Depreciation expense factor	3.29%	Staff W/P
i	<b>Carrying Cost Factor</b>	19.37%	Sum of lines e through h

Duke Energy Ohio, Inc.  
Case Nos. 08-709-EL-AIR, et al.

### Comparison of Impacts on Residential Customers (Annual Percent Increase in Base Rates) of Rate Design Proposals

Percent Increase	Duke Rate Design Proposal			Staff Rate Design Proposal			OCC Rate Design Proposal		
	No. of Customers	Percent	Cumulative Percent	No. of Customers	Percent	Cumulative Percent	No. of Customers	Percent	Cumulative Percent
Less than 0	254	0.1	0.1						
0.00 to 9.99	52,850	12.2	12.2						
10.00 to 19.99	147,514	33.9	46.2	265,566	61.1	61.1	322,499	74.2	74.2
20.00 to 29.99	105,014	24.2	70.3	169,047	38.9	100.0	112,114	25.8	100.0
30.00 to 39.99	54,858	12.6	82.9						
40.00 to 49.99	29,373	6.8	89.7						
50.00 to 59.99	16,622	3.8	93.5						
60.00 to 69.99	9,635	2.2	95.7						
70.00 to 79.99	6,018	1.4	97.1						
80.00 or more	12,475	2.9	100.0						
Total	434,613	100.0		434,613	100.0		434,613	100.0	
Minimum	(3.52)			17.94			18.84		
Maximum	122.18			26.89			22.89		
Average	26.70			20.09			19.82		

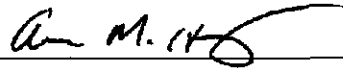
#### Notes

Using billing data for calendar year 2008 for all residential customers who were customers for the full year (excluding those with negative consumption for the year)  
All rate designs were calculated to produce Duke's proposed level of residential (RS and CUR) revenues: \$219,693,237  
The following rates were used:

Customer	KWH	
	Charge	Charge
Duke	10.00	0.01922
Staff	5.71	0.02353
OCC	5.53	0.02371

**CERTIFICATE OF SERVICE**

It is hereby certified that a true copy of the foregoing *Direct Testimony of Scott J. Rubin* was served by Regular U.S. Mail Service, postage prepaid, to the below parties this 26th day of February, 2009.



Ann M. Hotz  
Assistant Consumers' Counsel

**SERVICE LIST**

Rocco D'Ascenzo  
Duke Energy Ohio, Inc.  
139 East Fourth Street  
P.O. Box 960  
Cincinnati, OH 45201-0960

Stephen Reilly  
Attorney General's Office  
Public Utilities Commission of Ohio  
180 East Broad Street, 9<sup>th</sup> Floor  
Columbus, OH 43215

David F. Boehm  
Michael L. Kurtz  
Boehm, Kurtz & Lowry  
36 East Seventh Street, Suite 1510  
Cincinnati, OH 45202

David C. Rinebolt  
Colleen L. Mooney  
Ohio Partners for Affordable Energy  
231 West Lima St., P.O. Box 1793  
Findlay, OH 45839-1793

Attorneys for Ohio Energy Group

Attorneys for Ohio Partners for Affordable  
Energy

John W. Bentine  
Mark S. Yurick  
Chester, Willcox & Saxbe LLP  
65 East State St., Ste. 1000  
Columbus, OH 43215-4213  
Attorneys for The Kroger Co.

Mary W. Christensen  
Christensen Christensen Donchatz  
Kettlewell, & Owens, LLP  
100 East Campus View Blvd., Suite 360  
Columbus OH 43235-4679

Attorney for People Working  
Cooperatively, Inc.

Thomas J. O'Brien  
Sally W. Bloomfield  
Bricker & Eckler, LLP  
100 South Third Street  
Columbus, OH 43215-4291

Attorneys for the City of Cincinnati

Albert E. Lane  
7200 Fair Oaks Dr.  
Cincinnati, OH 45237-2922

Pamela H. Sherwood  
Vice President of Regulatory Affairs,  
Midwest Region tw telecom  
4625 West 86th Street, Suite 500  
Indianapolis, IN 46268

Elizabeth H. Watts  
Duke Energy-Ohio  
155 East Broad Street  
Columbus, OH 43215

Stephen M. Howard  
Vorys, Sater, Seymour And Pease LLP  
52 East Gay S., P. O. Box 1008  
Columbus, OH 43216-1008

Attorney Ohio Cable Telecommunications  
Association

Douglas E. Hart  
441 Vine St., Ste. 4192  
Cincinnati, OH 45202

Attorney for The Greater Cincinnati Health  
Council

Paul A. Werner  
Hogan & Hartson LLP  
Columbia Square  
555 13th Street, N.W.  
Washington, D.C. 20004

Attorney Ohio Cable Telecommunications  
Association