

OCC EXHIBIT NO. _____

**BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Ohio)
Edison Company, The Cleveland Electric)
Illuminating Company and The Toledo)
Edison Company for Authority to Provide)
for a Standard Service Offer Pursuant to)
R.C. 4928.143 in the Form of an Electric)
Security Plan)

Case No. 14-1297-EL-SSO

(PUBLIC VERSION)

DIRECT TESTIMONY

OF

SCOTT J. RUBIN

**On Behalf of
The Office of the Ohio Consumers' Counsel**
*10 West Broad Street, Suite 1800
Columbus, Ohio 43215*

August 10, 2015

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ATTACHMENTS

Attachment SJR-1:	Curriculum vitae for Scott J. Rubin.
Attachment SJR-2:	Response to OCC-Set 16-INT-603 and INT-606
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On Behalf of the Office of the Ohio Consumers' Counsel
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1 **I. INTRODUCTION**

2

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

4 ***A1.*** My name is Scott J. Rubin. My business address is 333 Oak Lane, Bloomsburg,
5 PA.

6

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

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

10

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

12 ***A3.*** I have been retained by the Office of the Ohio Consumers' Counsel ("OCC") to
13 review the Supplemental Stipulation and Recommendation dated May 26, 2015
14 ("First Supplement") and the Second Supplemental Stipulation and
15 Recommendation dated June 4, 2015 ("Second Supplement"). My review will
16 focus on the reasonableness of the First Supplement and Second Supplement,
17 applying principles established by this Commission. Those principles include the
18 effect of the proposed stipulations on residential customers of Ohio Edison
19 Company ("OE"), The Cleveland Electric Illuminating Company ("CEI"), and
20 The Toledo Edison Company ("TE") (collectively "Companies").

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

2 ***A4.*** I have testified as an expert witness before utility commissions or courts in the
3 District of Columbia, the province of Nova Scotia, and in the states of Alaska,
4 Arizona, California, Delaware, Illinois, Kentucky, Maine, Maryland, Mississippi
5 New Hampshire, New Jersey, New York, Ohio, Pennsylvania, and West Virginia.
6 I also have testified as an expert witness before two committees of the U.S. House
7 of Representatives and various state and local legislative committees. I also have
8 served as a consultant to the staffs of state utility commissions as well as to
9 several national utility trade associations, and state and local governments
10 throughout the country.

11
12 Prior to establishing my own consulting and law practice, I was employed by the
13 Pennsylvania Office of Consumer Advocate from 1983 through January 1994 in
14 successive positions of increasing responsibility. From 1990 until I left state
15 government, I was one of two senior attorneys in that Office. Among my other
16 responsibilities in that position, I played a major role in setting its policy positions
17 on water and electric matters. In addition, I was responsible for supervising the
18 technical staff of that Office. I also testified as an expert witness for that Office
19 on rate design and cost of service issues.

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1 Throughout my career, I have developed substantial expertise in matters relating
2 to the economic regulation of public utilities. I have published articles,
3 contributed to books, written speeches, and delivered numerous presentations, on
4 both the national and state levels, relating to regulatory issues. I have attended
5 numerous continuing education courses involving the utility industry. I also have
6 served as a faculty member in utility-related educational programs for the Institute
7 for Public Utilities at Michigan State University, the American Water Works
8 Association, and the Pennsylvania Bar Institute. Attachment SJR-1 to this
9 testimony is my curriculum vitae.

10

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

13 ***A5.*** Yes, I do. I have testified on numerous occasions as a rate design, tariff, and cost
14 of service expert. I have also worked as a consultant to local government entities
15 on rate design issues -- both to assist government-owned utilities in designing
16 rates and to help government agencies obtain reasonable rates from their utility.
17 In addition, I also served on the editorial committee for the preparation of the
18 major rate design manual for the water utility industry, the American Water
19 Works Association's Manual M1: *Principles of Water Rates, Fees, and Charges*.

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1 In the electric utility sector since 2013, I have testified on rate design, tariff,
2 and/or cost of service issues in cases involving electric distribution utilities in
3 Alaska (Chugach Electric and Municipal Light & Power), Connecticut (United
4 Illuminating), District of Columbia (Potomac Electric), Illinois (Commonwealth
5 Edison and Ameren Illinois), Mississippi (Entergy Mississippi), Ohio (Duke
6 Energy and Dayton Power & Light), and Pennsylvania (Pike County Light &
7 Power).

8
9 **II. SUMMARY**

10
11 ***Q6. WHAT IS THE FOCUS OF YOUR TESTIMONY?***

12 ***A6.*** My testimony discusses whether the proposed First and Second Supplements are
13 reasonable.

14
15 ***Q7. AS PART OF YOUR WORK, DID YOU REVIEW THE TESTIMONY AND***
16 ***EXHIBITS OF ANY OF THE COMPANIES' WITNESSES?***

17 ***A7.*** Yes. I reviewed the testimony and exhibits of witnesses Jurica, Savage, Stein,
18 and Mikkelsen. I also reviewed other exhibits that are part of the filing and
19 numerous responses to discovery requests that were provided by these and other
20 witnesses.

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1 **Q8. PLEASE SUMMARIZE YOUR CONCLUSIONS AND**
2 **RECOMMENDATIONS.**

3 **A8.** My conclusions and recommendations are summarized as follows:

- 4 • The First and Second Supplements are not consistent with
5 established regulatory principles and should be rejected by
6 the Commission.
- 7 • The First Supplement proposes to exempt certain large
8 industrial customers from Rider NMB in a manner that is
9 both unfair to other customers and inconsistent with
10 encouraging the efficient use of electricity. Indeed, it
11 appears that only low load factor (that is, inefficient)
12 customers would benefit from the proposed exemption
13 from Rider NMB.
- 14 • I recommend that the Commission reject the proposed
15 Commercial High Load Factor Experimental Time-of-Use
16 rate described in the Second Supplement. The proposed
17 new rate is designed to serve only one customer. It is not
18 consistent with established regulatory principles. It is not
19 based on the cost of service. It unfairly shifts costs from a

1 large commercial customer to residential customers.

2 Finally, the proposal is not fully developed.

3
4 **III. OVERVIEW OF PROPOSED STIPULATIONS AND EVALUATION**
5 **CRITERIA**

6
7 ***Q9. WHAT IS YOUR UNDERSTANDING OF THE PROPOSED STIPULATIONS***
8 ***FOUND IN THE FIRST SUPPLEMENT AND SECOND SUPPLEMENT?***

9 ***A9.*** Under the First and Second Supplements, the Companies would provide financial
10 benefits to a few specific customers. Those benefits are provided through a
11 combination of exemptions from certain charges or the creation of a special
12 discounted rate. Moreover, because of the specific ratemaking mechanisms
13 selected, the Companies are not paying any of the costs of providing those
14 benefits. Rather, all of the revenues that otherwise would be foregone (from
15 providing large customers with discounted rates) are being paid by the remaining
16 (smaller) customers, including the residential class.

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1 ***Q10. DID OCC, AS THE REPRESENTATIVE OF RESIDENTIAL CUSTOMERS'***
2 ***INTERESTS, AGREE TO PAY FOR THE COST OF PROVIDING***
3 ***DISCOUNTS TO SPECIFIC LARGE CUSTOMERS?***

4 ***A10.*** No. OCC is not a party to the First and Second Supplements. As I understand it,
5 neither OCC nor any other representative of residential consumers has agreed to
6 foot the bill for the discounts being provided to a few large commercial and
7 industrial customers. In essence, then, a few large customers and the Companies
8 got together and decided that they would shift some of the large customers' costs
9 to residential consumers, but without the residential consumers' agreement.

10

11 ***Q11. WHAT IS YOUR UNDERSTANDING OF THE CRITERIA THE***
12 ***COMMISSION USES TO EVALUATE A PROPOSED STIPULATION?***

13 ***A11.*** I am advised by counsel that among the criteria the Commission uses to evaluate
14 proposed stipulations are whether the provisions are consistent with Ohio law and
15 whether the provisions violate any important regulatory principle or practice.

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1 ***Q12. IN YOUR OPINION, AND BASED ON YOUR REVIEW AND ANALYSIS OF***
2 ***THE FIRST AND SECOND SUPPLEMENTS, DO THE FIRST AND***
3 ***SECOND SUPPLEMENTS MEET THESE STANDARDS?***

4 ***A12.*** No. As I describe in detail below, the First and Second Supplements are not
5 consistent with established regulatory principles and should be rejected.

6

7 **IV. FIRST SUPPLEMENT: SPECIAL RATE PROVISIONS FOR SELECT**
8 **LARGE INDUSTRIAL CUSTOMERS**

9

10 ***Q13. WHAT IS YOUR SPECIFIC CONCERN WITH THE FIRST SUPPLEMENT?***

11 ***A13.*** I am very concerned with new Section V.A.2 that was added to the proposed
12 Stipulation, beginning on page 3 of the First Supplement. This provision allows
13 selected large industrial customers to be exempt from Rider NMB.

14

15 ***Q14. WHAT IS RIDER NMB?***

16 ***A14.*** Rider NMB is the Non-Market-Based Service Rider through which the
17 Companies collect from customers certain costs the Companies incur from PJM

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1 associated with the operations and reliability of the regional bulk power network.¹

2 Under both the existing Rider NMB tariff and the Companies' proposed Rider
3 NMB tariff, the "Rider is not avoidable for customers who take electric generation
4 service from a certified supplier."² In other words, the rider is non-bypassable.

5
6 ***Q15. WHY IS RIDER NMB NOT BYPASSABLE?***

7 ***A15.*** Rider NMB is not bypassable because it recovers costs associated with operating,
8 and maintaining the reliability of, the regional high-voltage network that is used
9 by all customers, regardless of the source of their electricity supply. Whatever
10 one may think of the particular cost elements that should be included in Rider
11 NMB, there is no question that having a reliable bulk power network benefits
12 every user of the network, including power plant owners, wholesale suppliers, and
13 electric consumers of all sizes and types. In the Companies' direct case, Mr. Stein
14 explained that Rider NMB has existed since June 2011 and that its purpose is to
15 recover "costs associated with non-market based charges that are billed by PJM
16 and that would have otherwise been included in the competitive bid product for

¹ I understand that in their Application the Companies requested an expansion of the types of costs that could be included in Rider NMB. My testimony is limited to the proposed exemption from Rider NMB for certain large customers; not to the types of costs that should be included in the rider.

² OE Tariff P.U.C.O. No. 11, Sheet 119, p. 1; CEI Tariff P.U.C.O. No. 13, Sheet 119, p. 1; TE Tariff P.U.C.O. No. 8, Sheet 119, p. 1.

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1 non-shopping customers or the CRES [Competitive Retail Electric Service] price
2 for shopping customers."³
3

4 ***Q16. DOES THE FIRST SUPPLEMENT CHANGE THAT?***

5 ***A16.*** Yes. The First Supplement allows a specific list of large customers (members of
6 Industrial Energy Users-Ohio ("IEU") and Ohio Energy Group ("OEG"), Nucor
7 Steel Marion Inc., and Material Sciences Corp.) to be exempt from Rider NMB.
8 The First Supplement describes this provision as being a "small-scale pilot
9 program ... to explore whether certain customers could benefit from opting out of
10 the Companies' Rider NMB and obtaining, directly or indirectly through a CRES
11 provider, all transmission and ancillary services ..."⁴
12

13 ***Q17. WHAT IS YOUR UNDERSTANDING OF A PILOT PROGRAM?***

14 ***A17.*** My understanding of a pilot program is that it is a test of a new rate, program, or
15 regulatory structure to determine whether it is beneficial to customers and should
16 be expanded in the future. Any pilot program should last for a limited period of
17 time and have specific criteria for testing and evaluation to determine whether it

³ Stein Direct Testimony, p. 12, lines 1-15.

⁴ First Supplement, p. 3.

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1 should be made permanent and expanded to all customers (or, alternatively,
2 whether it should be abandoned).

3
4 ***Q18. DOES THE EXEMPTION FROM RIDER NMB MEET THE DEFINITION***
5 ***OF A PILOT PROGRAM?***

6 ***A18.*** No, the so-called pilot program exempting selected customers from Rider NMB
7 does not meet the definition of a pilot program. The exemption does not have an
8 end, there are no criteria given to evaluate the effectiveness of the exemption, and
9 there are no indications that the program would (or could) be expanded to other
10 customers.

11
12 ***Q19. EVEN IF THE EXEMPTION FROM RIDER NMB MET THE CRITERIA TO***
13 ***BE A PILOT PROGRAM, WOULD IT MEET THE STANDARD OF BEING***
14 ***CONSISTENT WITH IMPORTANT REGULATORY PRINCIPLES?***

15 ***A19.*** No. Rider NMB is simply a cost-shifting scheme to transfer costs associated with
16 operating and maintaining a reliable bulk power network from a few large
17 industrial users to all other customers. There is no overall reduction in the cost of
18 operating the bulk power network, only a shift in costs from a few large
19 customers onto all other customers.

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1 Moreover, it appears that the exemption from Rider NMB would violate two
2 important rate design principles. More than 50 years ago, Professor Bonbright
3 posited that there were three fundamental principles of a sound rate design:
4 (a) collection of the revenue requirement, (b) fairly apportioning the revenue
5 requirement among different types of customers, and (c) encouraging the efficient
6 use of the utility service (or, conversely, discouraging inefficient consumption).⁵
7 In my opinion, it appears likely that the exemption from Rider NMB would
8 violate both the fairness and efficiency principles.

9
10 ***Q20. WHAT ARE THE FAIRNESS AND EFFICIENCY PRINCIPLES?***

11 ***A20.*** Professor Bonbright described fairness as follows: "the principle that the burden
12 of meeting total revenue requirements must be distributed fairly among the
13 beneficiaries of the service."⁶ He described efficiency as rates being designed to
14 "discourage the wasteful use of public utility services while promoting all use that
15 is economically justified in view of the relationships between costs incurred and
16 benefits received."⁷

⁵ James C. Bonbright, *Principles of Public Utility Rates* (Columbia Univ. Press, 1961), p. 292.

⁶ *Id.*

⁷ *Id.*

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1 ***Q21. WHY DO YOU BELIEVE IT IS LIKELY THAT THESE PRINCIPLES***
2 ***WOULD BE VIOLATED BY THE PROPOSED EXEMPTION OF CERTAIN***
3 ***LARGE USERS FROM RIDER NMB?***

4 ***A21.*** Under Rider NMB, included PJM costs are allocated to customer classes based on
5 class demand during the four summer peak months (June through September).
6 This assumes that 100% of PJM-related costs are incurred in proportion to a
7 customer's peak demand. If, in fact, some of these costs are related to customers'
8 energy consumption -- or more importantly, if a CRES believes a cost should be
9 recovered in proportion to a customer's energy consumption -- then the only
10 customers who would benefit from the exemption are those whose energy
11 allocation would be smaller than its demand allocation.
12 The Rate GT customer class (from which the exempt customers would be drawn),
13 however, has a higher load factor than the system as a whole. That is, an energy-
14 weighted allocation would be less favorable to the GT class as a whole than
15 would a demand-based allocation. This is readily apparent from the data in
16 Companies' Attachment JMS-2 (Revised), as shown in the following table.

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Operating Area	Rate GT % of System Demand	Rate GT % of System Energy Use
OE	14.86%	18.82%
CEI	8.40%	11.39%
TE	36.88%	46.16%

For example, in the Companies' 2014 Rider NMB filing (Docket No. 14-542), OE had total Rider NMB costs of \$125.8 million, of which 14.86% (approximately \$18.7 million) was allocated to Rate GT customers. If, instead, those costs had been allocated based on annual energy consumption, Rate GT customers would have been allocated 18.82% of the cost, or almost \$23.7 million.

Thus, if a CRES is procuring the same services from PJM that the Companies are procuring from PJM, there are only two options. Option 1 is that all of the costs are truly demand-related, in which case there should be no difference between the customer's cost from the CRES or the Companies. Option 2 is that some of the costs are energy-related, or at least that the CRES treats them as energy-related, in which case the only customers who benefit are those who have a smaller energy allocator than they have a demand allocator. The ratio of energy usage to peak demand is known as the load factor, and the higher the load factor (the closer it is to 1.0), the more efficiently the customer uses electricity (at least in terms of making efficient use of peak capacity). Thus, the only customers who could

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1 benefit from the proposed exemption are those who are less efficient than the
2 average customer -- that is, customers with a lower load factor whose energy
3 allocation is less than their demand allocation.

4
5 The proposed exemption from Rider NMB, therefore, is designed to provide a
6 benefit only to customers who are less efficient than the average Rate GT
7 customer. If those less efficient customers are removed from Rider NMB, it
8 would serve to increase the costs for those customers who remain. This violates
9 both the fairness and efficiency rate design principles that Professor Bonbright
10 found to be critically important.

11 ***Q22. ARE THERE WAYS TO CURE THIS PROBLEM WITHOUT REJECTING***
12 ***THE FIRST SUPPLEMENT?***

13 ***A22.*** Yes. This problem could be cured by changing the allocator used for Rider NMB
14 to one that is based on both energy consumption and peak demand. While that
15 would cure the inefficiency defect inherent in the First Supplement, it would
16 create other problems, particularly for higher load factor customers who could see
17 their costs increase significantly.

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1 ***Q23. WHAT DO YOU RECOMMEND?***

2 ***A23.*** I recommend that the Commission reject the provision of the First Supplement
3 that would add section V.A.2 to the Stipulation. The proposed exemption of a
4 select few customers from Rider NMB is not consistent with established
5 ratemaking principles and should be rejected.

6

7 **V. SECOND SUPPLEMENT: SPECIAL RATE PROVISION FOR ONE**
8 **LARGE COMMERCIAL CUSTOMER**

9

10 ***Q24. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE SECOND***
11 ***SUPPLEMENT.***

12 ***A24.*** The Second Supplemental Stipulation and Recommendation adds Section V.A.3
13 to the Stipulation. This new provision would create a Commercial High Load
14 Factor Experimental Time-of-Use rate (for simplicity, I will refer to this as "Rate
15 HLF"). The proposed rate would pre-determine a price to be paid for electricity
16 during summer peak periods and during the remainder of the year based on a
17 constant assumed capacity price of \$150 per MW-day. That capacity price would
18 remain fixed for the term of ESP IV. This special rate would be available only to
19 commercial (Rate GS or GP) customers who have a load factor of 70% or more
20 during the prior 12 months, have their "headquarters located in Ohio," have "at

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1 least 30 facilities in the Companies' combined service territory," have each facility
2 with at least 1.5 GWh of energy consumption, and have "refrigeration as a major
3 portion of the load."

4
5 ***Q25. AS FAR AS YOU CAN TELL, HOW MANY CUSTOMERS WOULD***
6 ***QUALIFY FOR THIS RATE?***

7 ***A25.*** As far as I can tell, this rate was designed so that only one customer, Kroger Co.,
8 would meet all of the qualifications for the rate. The requirement for a
9 commercial customer with refrigeration as a major part of the load essentially
10 limits the rate to grocery stores. Other types of customers with substantial
11 refrigeration load, such as food processors, would be industrial customers that
12 would not qualify for the proposed new rate.

13
14 The requirement for the business to be headquartered in Ohio limits the potential
15 applicability to only a few grocery store chains. From my research, I have found
16 only a few grocery store chains headquartered in Ohio. These include Kroger
17 headquartered in Cincinnati, Fresh Encounter headquartered in Findlay, Heinen's
18 headquartered in Cleveland, a regional Acme chain headquartered in Akron, and
19 Buehler's headquartered in Wooster.

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1 The additional requirement that the chain have at least 30 stores in the Companies'
2 service territory shrinks the list down to just one company, Kroger. Fresh
3 Encounter has 33 stores in Ohio, but many of them are in AEP's service territory,
4 so they have fewer than 30 locations in the Companies' service area. Heinen's and
5 Acme each have 18 stores and Buehler's has 15 locations in Ohio. While there
6 are other large grocery store chains that are likely to meet the 30-store
7 requirement (such as Walmart or Giant Eagle), I do not believe any others have
8 their headquarters in Ohio.

9 I conclude, therefore, that proposed Rate HLF is designed by its terms to serve
10 only one customer.

11
12 ***Q26. BEFORE YOU DISCUSS THE STRUCTURE OF PROPOSED RATE HLF,***
13 ***DOES THE FACT THAT THE RATE IS LIKELY TO APPLY TO ONLY ONE***
14 ***CUSTOMER RAISE ANY ISSUES, IN YOUR OPINION?***

15 ***A26.*** Yes. As I discussed earlier, one of the central regulatory principles is fairness to
16 all customers. One important element of this principle is that similarly situated
17 customers should be treated in a similar manner (that is, they should have the
18 same rate schedule and other terms and conditions of service). In some
19 jurisdictions, statutes or case law refer to this as the avoidance of "undue
20 discrimination." I am advised by counsel that there is a similar requirement in

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1 Ohio.⁸ In fact, the need to treat similar customers in a similar manner is so
2 important that Professor Bonbright listed the avoidance of undue discrimination
3 as a separate ratemaking principle.⁹
4

5 The Second Supplement violates this principle by using criteria that have no
6 bearing whatsoever on the way in which a customer uses utility service or on the
7 cost to serve the customer. In particular, there are two components of proposed
8 Rate HLF that are wholly irrelevant and serve only to restrict the rate to Kroger
9 (and leave out its competitors): (1) the location of the corporate headquarters and
10 (2) the existence of refrigeration load.
11

12 ***Q27. WHY IS THE LOCATION OF A CUSTOMER'S HEADQUARTERS***
13 ***IRRELEVANT TO RATEMAKING?***

14 ***A27.*** A customer's headquarters location has no bearing whatsoever on the cost to serve
15 a customer. Incredibly, the provision in the Second Supplement does not even
16 require that the headquarters be located in the Companies' service territory
17 (which, arguably, could be relevant as the headquarters building might be a

⁸ O.R.C. § 4905.33.

⁹ James C. Bonbright, *Principles of Public Utility Rates* (Columbia Univ. Press, 1961), p. 291.

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1 substantial commercial customer). Of course, if the provision did require a
2 headquarters in the Companies' service territory, then Kroger would not be
3 eligible because its headquarters is in Cincinnati which is not served by the
4 Companies.

5
6 ***Q28. WHY IS THE EXISTENCE OF REFRIGERATION LOAD IRRELEVANT TO***
7 ***ELIGIBILITY FOR A RATE?***

8 ***A28.*** The costs for a utility to serve a customer should not depend on the particular
9 equipment the customer is using. What matters are the electrical characteristics of
10 the load and (at least arguably) the load factor. The proposed rate already
11 requires a 70% or greater load factor and consumption in excess of 1.5 GWh
12 annually per location, so it should not matter how the customer is using electricity
13 or achieving that load factor. Again, it appears to me that the refrigeration
14 requirement is designed solely to limit the applicability of the rate only to Kroger.

15
16 ***Q29. SETTING ASIDE FOR THE MOMENT YOUR CONCERNS WITH THE***
17 ***ELIGIBILITY CRITERIA, WHAT IS YOUR UNDERSTANDING OF THE***
18 ***PURPOSE AND STRUCTURE OF RATE HLF?***

19 ***A29.*** As I understand it, the purpose of the proposed rate is to send qualifying
20 customers price signals based on the cost of capacity and energy during certain

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1 times of day. The proposed rate sets an "on peak" period of hours 13 through 18
2 (noon to 6:00 pm), Monday through Friday, during 13 weeks of the year
3 (presumably June through August, though that is not stated in the Second
4 Supplement). During this "on peak" period, the price paid under the rate would
5 include a capacity cost of \$140.38 per megawatt-hour ("MWh"). During all other
6 hours of the year, the price would be an energy-only price based on the results of
7 the SSO auction (currently about 5.5¢ per kilowatt-hour ("kWh")).¹⁰ The energy
8 charge will vary with each SSO auction, but the capacity cost will be fixed for the
9 entire term of ESP IV.¹¹ Further, any difference between the revenues received
10 from the Rate HLF customer and the actual cost of purchasing power to serve the
11 customer will be recovered from all other SSO customers through Rider GCR.¹²

12
13 ***Q30. DO YOU HAVE ANY CONCERNS WITH THE STRUCTURE AND***
14 ***PURPOSE OF THE PROPOSED RATE?***

15 ***A30.*** Yes, I have several concerns with the structure and purpose of proposed Rate
16 HLF.

¹⁰ Second Supplement, Attachment 1.

¹¹ Response to OCC Set 16-INT-603 (capacity price) and INT-606 (energy price), attached hereto as Attachment SJR-2.

¹² Mikkelsen Fourth Supplemental Testimony, p. 2, lines 14-16; response to OCC Set 16-INT-601, attached hereto as Attachment SJR-3.

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1 ***Q31. WHAT IS YOUR FIRST CONCERN?***

2 ***A31.*** My first concern is that fixing the peak season capacity rate at \$140.38 per MWh
3 for the entire term of ESP IV is unreasonable. The capacity market is evolving
4 and it cannot be determined whether this is a reasonable price for capacity.
5 Moreover, the price does not reflect potential peak pricing conditions. A time-of-
6 day rate is supposed to reflect market conditions during that time period, so that
7 the customer can respond in near real-time to that higher price. By setting the
8 capacity price at \$140.38 per MWh, the proposed rate fails to reflect the real cost
9 of energy during peak periods. For example, PJM has set a cap on the price paid
10 to generators of \$1,000 per MWh, and during the summer 2013 peak (July 15-18)
11 the cost (based on emergency demand response costs) actually reached \$1,800 per
12 MWh in the ATSI zone that serves the Companies.¹³
13 By pre-setting the price for capacity at \$140.38 per MWh regardless of market
14 conditions, the proposed rate is likely to result in the customer paying
15 substantially less than market price for capacity.

¹³ PJM MRC Meeting of Aug. 29, 2013, presentation on Week of July 15, 2013, available at:
<https://www.pjm.com/~media/committees-groups/committees/mrc/20130829/20130829-item-13-hot-weather-operations-presentation.ashx>

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1 To illustrate this, I have prepared Attachment SJR-4. This is a graph of the PJM
2 Locational Marginal Price ("LMP") for the ATSI zone in which the Companies
3 are located for the summer peak period in 2013: July 15-18. For presentation
4 purposes, I have capped the graph at \$500 per MWh. In reality, the price spiked
5 to more than \$1,500 in hour 16 on July 18, then peaked at \$1,800 in hours 17 and
6 18 during that day. The dotted lines on the graph show the generation-level on-
7 peak and off-peak prices for Rate GP used in Rate HLF (\$193.40 and \$53.02,
8 respectively).¹⁴

9
10 Two conclusions are readily apparent from this graph. First, the price to meet
11 peak demands during hours 13-18 in the summer can greatly exceed the price
12 being locked into the proposed rate. Second, and even more importantly, the
13 price outside of hours 13-18 greatly exceeds the so-called "off-peak" price in Rate
14 HLF in some instances. For example, in hour 12 on July 15, the price reached
15 \$234 per MW, but the Rate HLF generation price in that hour is only \$53. It is
16 important to remember that during these periods outside of the noon to 6:00 pm
17 window, the Rate HLF customer would pay nothing toward capacity.

¹⁴ Generation-level prices are the prices shown in Attachment 1 to the Second Stipulation excluding line losses, taxes, and auction costs. These prices are used on the graph to be comparable to PJM LMP prices which are at the generation level.

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1 Moreover, if the purpose of Rate HLF were to give the customer a price signal
2 about the cost of using electricity during summer peak periods, the proposed rate
3 would fail the test. The rate is not based on any actual capacity costs; it does not
4 reflect the cost of serving a customer in periods leading up to or following the
5 noon to 6:00 pm window; and it does not accurately reflect the cost of providing
6 energy during peak periods.

7
8 ***Q32. ISN'T THE PRICE OF \$140.38 PER MWH FOR CAPACITY BASED ON***
9 ***ACTUAL CAPACITY COST DATA AND THE SYSTEM CAPACITY***
10 ***FACTOR OF 52%?***

11 ***A32.*** No, it is not. First, the Companies acknowledged that \$150 per MW-day was
12 simply a negotiated number.¹⁵ As such, that amount -- which is the primary input
13 into the calculation of the rate -- has nothing to do with the cost of providing
14 service to Rate HLF customers.

15
16 Second, while the Attachment to the Second Supplement makes it appear that
17 changes in the system capacity factor would alter the \$140.38 figure, that is not
18 actually the case. The amount of \$140.38 is derived by simple arithmetic from

¹⁵ Response to OMAEG Set 5-INT-123, attached hereto as Attachment SJR-5.

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1 the \$150 per MW-day "negotiated amount." When the calculation is distilled to
2 its essence, it takes the cost per MW-day, multiplies by 365 days to get a total
3 annual cost (\$150 per MW-day x 365 days per year = \$54,750 per MW per year),
4 then divides that amount by 390, which is the number of "on peak" hours for
5 purposes of Rate HLF ($\$54,750 \div 390 = \140.38 per "on peak" MWh, or 14.038¢
6 per kWh).

7
8 The effect of this is to take a negotiated number -- which is alleged to represent a
9 "capacity" cost, but actually has nothing to do with actual capacity costs -- and
10 allow a customer to pay a rate based on that amount only during six hours of the
11 day, five days a week, for 13 weeks. As I explained above, there can be a very
12 real difference between actual capacity costs and this negotiated amount.

13
14 ***Q33. DOES THE COMPANIES' PEAK ALWAYS OCCUR DURING THE NOON***
15 ***TO 6:00 PM "ON PEAK" WINDOW?***

16 ***A33.*** No. The Companies' periods of peak demand often occur at times of day outside
17 of the noon to 6:00 pm window. For example, according to hourly load data
18 provided by the Companies in discovery, during 2013, the Companies' system
19 peak for the year occurred during [REDACTED]

20 [REDACTED]

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1 [REDACTED]
2 [REDACTED]¹⁶ If Rate HLF had been in effect in 2013, the
3 customer would have paid rates reflecting no capacity costs during each of those
4 eight peak hours.
5

6 ***Q34. WHAT IS YOUR NEXT CONCERN WITH THE PROPOSED RATE?***

7 ***A34.*** I am also concerned that the Second Supplement assumes there is a need for an
8 "experimental" time-of-use rate. The Companies have had experimental time-of-
9 use rates (Riders RTP, CPP, and the time-of-day option under Rider GEN) since
10 February 2010 (the rates became effective at the conclusion of Case No. 09-541-
11 EL-ATA). Those options were available to all customers -- not just one selected
12 customer who meets artificial and irrelevant requirements, as would be the case
13 under Rate HLF -- and were based on market price information.
14

15 When it filed the current case, however, the Companies proposed eliminating all
16 time-of-use rates because they were not reflective of the market and were unfair
17 to other SSO customers who were required to pay the difference in cost through

¹⁶ Analysis of data provided in response to NUCOR Set 1, INT 022, Attachment 4 (Confidential). The eight highest peak hours in 2013 were [REDACTED]
[REDACTED]

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1 Rider GCR. Specifically, in its direct case, the Companies' witness on this issue,
2 Ms. Jurica, stated:

3 The Companies believe that dynamic pricing options, including
4 time-differentiated pricing, are better left to the development and
5 implementation of competitive retail electric service ("CRES")
6 providers. To be sure, the Commission in the past has supported
7 having utilities offer time-differentiated pricing to demonstrate the
8 possibilities with regard to this option in a relatively new market.
9 Yet, the continued increasing numbers of shopping customers
10 suggest that having the Companies provide this option is not
11 necessary to facilitate market growth and development. Further,
12 by offering a time-differentiated pricing option -- in addition to the
13 default standard service offer in Rider GEN -- the Companies are
14 in effect competing with CRES providers and thus could
15 potentially be seen as impeding further market development.
16 Notably, all of the Companies' other non-shopping customers are
17 responsible for recovery of any differences created between
18 generation revenues and expenses associated with implementation
19 of the time-of-day provision. Thus, eliminating the time-

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1 differentiated price option will benefit these non-shopping
2 customers.

3
4 Jurica Direct Testimony, p. 4, lines 3-15 (emphasis added).

5
6 In response to discovery earlier in this case, Ms. Jurica further explained:

7
8 CRES providers are best situated to make customized pricing
9 offers to an individual customer which reflect their costs to serve
10 that specific customer. Conversely, a dynamic pricing tariff option
11 offered by the Companies would be designed and offered to all
12 customers who qualify, which may not represent the actual cost for
13 SSO suppliers to serve a customer that participates under the
14 dynamic pricing tariff offered by the Companies.

15
16 Response to Nucor Set 1-INT-29(c).

17
18 I agree with Ms. Jurica that time-of-day pricing options and other offerings
19 tailored to a specific customer's locations and requirements are better left to
20 CRES providers. The Companies should not be engaged in attempting to tailor a

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1 specific pricing option for one customer, particularly when all other SSO
2 customers would be forced to pay the difference in cost.

3
4 ***Q35. YOU JUST SAID THAT ALL OTHER SSO CUSTOMERS WOULD BE***
5 ***FORCED TO PAY THE DIFFERENCE IN COST. IS THAT TRUE FOR***
6 ***PROPOSED RATE HLF?***

7 ***A35.*** Yes, it appears that way. While it is not stated in the Second Supplement, Ms.
8 Mikkelsen states in her Fourth Supplemental Testimony: "Recovery of
9 differences, if any, between revenues collected to provide this generation service
10 and the cost associated with providing this generation service would be recovered
11 in Rider GCR."¹⁷

12
13 ***Q36. DOES SHIFTING COSTS FROM ONE LARGE COMMERCIAL***
14 ***CUSTOMER TO OTHER SSO CUSTOMERS CREATE ANY OTHER***
15 ***CONCERNS?***

16 ***A36.*** Yes. The cost shifting proposed by the Companies under Rate HLF would not
17 only require other customers to pay costs associated with serving one large
18 commercial customer, but it would require residential customers to bear a

¹⁷ Mikkelsen Fourth Supplemental Testimony, p. 2, lines 14-16. See also the response to OCC Set 16-INT-601, previously identified and attached hereto as Attachment SJR-3.

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1 disproportionate share of that burden. Specifically, the Companies provided
2 allegedly confidential data showing annual energy consumption by SSO and non-
3 SSO customers.¹⁸ On a total Companies basis, the Residential class used [REDACTED] of
4 all electricity consumed by the Companies' customers during 2013. Among SSO
5 customers, however, the Residential class accounts for [REDACTED] of energy consumed.
6 Thus, if the cost of subsidizing the rate to Kroger were spread among all
7 customers, the Residential class would pay [REDACTED] of the subsidy. By requiring the
8 cost to be shared only among SSO customers, however, the Companies are
9 forcing the Residential class to bear [REDACTED] of the cost.

10
11 Interestingly, it is the Commercial class -- the class from which the Rate HLF
12 customer is drawn -- that benefits the most from this approach. In 2013, the
13 Commercial class used [REDACTED] of electricity system-wide, but that class is
14 responsible for only [REDACTED] of SSO electricity usage. Thus, while Rate HLF is
15 designed to benefit one commercial customer, the Commercial class itself is not
16 paying its fair share to support the cost of that special rate discount.

¹⁸ Response to Nucor Set 1-INT-22, Attachments 2 and 3.

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1 **Q37. HAVE YOU ESTIMATED THE AMOUNT OF COST SHIFTING THAT**
2 **WOULD OCCUR IF RATE HLF WERE APPROVED?**

3 **A37.** Yes, I have prepared an estimate of the magnitude of the cost shifting that would
4 be involved if Rate HLF were allowed to take effect. To be eligible for the rate, a
5 commercial customer would need to have a monthly load factor at each of 30 (or
6 more) locations of at least 70% in each month and annual energy consumption per
7 location of at least 1,500,000 kWh. For simplicity, I have modeled the effect of
8 the rate using an annual load factor of 70% (rather than trying to estimate 12
9 separate monthly load factors) and annual consumption of 1,500,000 kWh. I also
10 assumed the customer is a primary voltage (Rate GP) customer.

11
12 The other important inputs to my analysis are the on-peak price per kWh of
13 \$0.199833, the off-peak price per kWh of \$0.054864 (both taken from
14 Attachment 1 to the Second Supplement), and the average annual price per kWh
15 which I calculate to be \$0.067340.¹⁹

¹⁹ The calculation, using data from Attachment 1 to the Second Supplement, starts with the annual average price per MWh from the auction of \$65.10, or \$0.06510 per kWh. I then divide this figure by (1 - Rate GP Loss Factor of 0.0291) and divide again by (1 - CAT of 0.0027), then I add the auction costs of \$0.000107 per kWh. The result of the calculation is an annual average SSO price per kWh to a Rate GP customer of \$0.067340.

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1 I used these data as the starting point for my analysis. The load factor is the ratio
2 of average hourly consumption to peak hour consumption. We know that the
3 average hourly consumption is 1,500,000 kWh divided by 8,760 hours per year,
4 or 171.23 kW during the average hour. To achieve a 70% load factor, peak hour
5 consumption would be that amount divided by 70%, or 244.62 kW during the
6 peak hour.

7
8 I then calculated the cost shifting under two scenarios. The first scenario is a
9 location that uses the maximum amount of on-peak energy possible. This
10 customer would have exactly the same energy usage (244.62 kW) in each of the
11 390 "on-peak" hours, or a total of 95,401.80 kWh.²⁰ All remaining kWh, or
12 1,404,598.20 kWh, would occur in the Rate HLF "off-peak" period. This
13 customer's annual charges under Rate HLF would total \$96,126.36.²¹ The cost of
14 purchasing energy for this customer at the auction price, however, is
15 \$101,010.00.²² This results in a shift of costs to other SSO customers of
16 \$4,883.64.²³ This scenario represents the smallest amount of cost shift possible

²⁰ $244.62 \times 390 = 95,401.80$.

²¹ $(95,401.80 \text{ kWh} \times \$0.199833 \text{ per kWh}) + (1,404,598.20 \text{ kWh} \times \$0.054864 \text{ per kWh}) = \$96,126.36$.

²² $1,500,000 \text{ kWh} \times \$0.067340 = \$101,010.00$.

²³ $\$96,126.36 - \$101,010.00 = -\$4,883.64$.

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1 for each location. To the extent that the location has on-peak hours during which
2 it uses less than the maximum amount of energy, its bills will be lower and the
3 costs borne by other customers would increase dollar-for-dollar.

4
5 To test a more likely scenario, I used the actual 2013 hourly load curve for the
6 Commercial class, increasing each hour proportionately (without exceeding the
7 maximum hourly demand) to achieve a 70% load factor.²⁴ I show this analysis in
8 Attachment SJR-6. Under this scenario, which I expect is closer to real-world
9 experience, total on-peak consumption would total 92,050 kWh and off-peak
10 consumption would total 1,407,950 kWh. Under this more likely scenario, the
11 total charges to the customer under Rate HLF would be \$95,640 per year. This is
12 \$5,370 less than the cost of purchasing the energy to serve the customer at the
13 SSO auction price.

14
15 I conclude, therefore, that it is likely that Rate HLF would shift costs from a
16 single customer with 30 or more locations onto all other SSO customers by at
17 least \$5,000 per location per year. For a customer with the minimum of 30
18 locations, that would amount to a subsidy of at least \$150,000 per year. Of

²⁴ Hourly load information was provided by the Companies in response to NUCOR Set 1 INT 022, Attachment 4 (Confidential).

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1 course, the more locations the customer has, and the more it is able to maximize
2 its allegedly "off peak" energy consumption, the more this subsidy would
3 increase.

4
5 ***Q38. IS THERE ANY COST JUSTIFICATION FOR A COST SHIFT OF \$150,000***
6 ***PER YEAR OR MORE FROM ONE LARGE COMMERCIAL CUSTOMER***
7 ***TO ALL OTHER SSO CUSTOMERS?***

8 ***A38.*** No. The Companies have not provided any cost justification for this subsidy.
9 The Companies present it as an "experiment" in time-of-use pricing, but it is
10 nothing of the kind. There is no cost support for the notion that the Companies
11 would lower costs as a result of this rate. It is simply a discount being given to
12 one customer at the expense of all other SSO customers. If there were truly a
13 savings to be had from time-of-use pricing, the CRES market would offer such
14 rates to entice customers to sign with them. But I am not aware of any CRES that
15 offers time-of-use pricing based solely on the hours of noon to 6:00 pm for 65
16 days of the year.

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1 **Q39. DO YOU HAVE ANY OTHER CONCERNS WITH PROPOSED RATE HLF?**

2 **A39.** Yes. The Companies have not provided a proposed tariff for the rate. OCC asked
3 for the proposed tariff in discovery and the Companies responded on June 29,
4 2015 (over three weeks after the Second Supplement was filed), that actual tariff
5 language was not available.²⁵ The Second Supplement contains a number of terms
6 and conditions for a customer to qualify for the rate. In addition, the actual rates
7 appear to be based on some type of formula as illustrated in the attachment to the
8 Second Supplement. If the Commission is even willing to consider adopting this
9 proposed new rate, it (and the parties) must be able to evaluate the actual
10 proposed tariff language to ensure that the rate formula, and other terms and
11 conditions of service, are just, reasonable, and not unduly discriminatory.
12 As I explain above, in my opinion this proposal does not meet the required
13 regulatory standards. I frankly do not know how the Commission could even
14 consider a proposed new rate without seeing the actual terms, conditions, and rate
15 formula that would be used.

²⁵ Response to OCC Set 16-RPD-082 which is attached hereto as Attachment SJR-7.

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1 ***Q40. WHAT DO YOU RECOMMEND?***

2 ***A40.*** I recommend that the Commission reject the proposed Commercial High Load
3 Factor Experimental Time-of-Use rate. The proposed new rate is designed to
4 serve only one customer, it is not consistent with established regulatory
5 principles, it is not based on the cost of service, it unfairly would saddle the
6 Residential class with a disproportionate share of the subsidy, and it is not a fully
7 developed rate proposal.

8

9 ***VI. CONCLUSION***

10

11 ***Q41. DOES THIS CONCLUDE YOUR WRITTEN TESTIMONY CONCERNING***
12 ***THE FIRST AND SECOND SUPPLEMENTS TO THE PROPOSED***
13 ***STIPULATION?***

14 ***A41.*** Yes. But I reserve the right to supplement my testimony later in the event that
15 any party submits new or corrected information that materially affects the
16 findings and recommendations presented in my testimony.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of Scott J. Rubin on Behalf of the Office of the Ohio Consumers' Counsel (Public Version)* was served via electronic transmission to the persons listed below on this 10th day of August 2015.

/s/ William J. Michael

William J. Michael
Assistant Consumers' Counsel

SERVICE LIST

Thomas.mcnamee@puc.state.oh.us
Thomas.lindgren@puc.state.oh.us
Ryan.orourke@puc.state.oh.us
mkurtz@BKLawfirm.com
kboehm@BKLawfirm.com
jkylercohn@BKLawfirm.com
stnourse@aep.com
mjsatterwhite@aep.com
yalami@aep.com
joseph.clark@directenergy.com
ghull@eckertseamans.com
myurick@taftlaw.com
dparram@taftlaw.com
Schmidt@sppgrp.com
ricks@ohanet.org
tobrien@bricker.com
mkl@bbrslaw.com
gas@smxblaw.com
ojk@smxblaw.com
wtpmlc@aol.com
lhawrot@spilmanlaw.com
dwilliamson@spilmanlaw.com
blanghenry@city.cleveland.oh.us
hmadorsky@city.cleveland.oh.us
kryan@city.cleveland.oh.us
mdortch@kravitzllc.com
rparsons@kravitzllc.com

burkj@firstenergycorp.com
cdunn@firstenergycorp.com
jlang@calfee.com
talexander@calfee.com
dakutik@jonesday.com
sam@mwncmh.com
fdarr@mwncmh.com
mpritchard@mwncmh.com
cmooney@ohiopartners.org
callwein@keglerbrown.com
joliker@igsenergy.com
mswhite@igsenergy.com
Bojko@carpenterlipps.com
hussey@carpenterlipps.com
barthroyer@aol.com
athompson@taftlaw.com
Christopher.miller@icemiller.com
Gregory.dunn@icemiller.com
Jeremy.grayem@icemiller.com
blanghenry@city.cleveland.oh.us
hmadorsky@city.cleveland.oh.us
kryan@city.cleveland.oh.us
tdougherty@theOEC.org
jfinnigan@edf.org
Marilyn@wflawfirm.com
todonnell@dickinsonwright.com
matt@matthewcoxlaw.com

gkrassen@bricker.com
dstinson@bricker.com
dborchers@bricker.com
mitch.dutton@fpl.com
DFolk@akronohio.gov
mkimbrough@keglerbrown.com
sechler@carpenterlipps.com
gpoulos@enernoc.com
twilliams@snhsllaw.com
dwolff@crowell.com
rlehfeldt@crowell.com

mfleisher@elpc.org
drinebolt@ohiopartners.org
meissnerjoseph@yahoo.com
LeslieKovacik@toledo.oh.gov
trhayslaw@gmail.com
Jeffrey.mayes@monitoringanalytics.com
mhpetricoff@vorys.com
mjsettineri@vorys.com
glpetrucci@vorys.com
msoules@earthjustice.org
sfisk@earthjustice.org

Attorney Examiners:

Gregory.price@puc.state.oh.us
Mandy.willey@puc.state.oh.us

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 (* denotes peer-reviewed publications)

1. "Quality of Service Issues," a speech to the Pennsylvania Public Utility Commission Consumer Conference, State College, PA. 1988.
2. K.L. Pape and S.J. Rubin, "Current Developments in Water Utility Law," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 1990.
3. Presentation on Water Utility Holding Companies to the Annual Meeting of the National Association of State Utility Consumer Advocates, Orlando, FL. 1990.
4. "How the OCA Approaches Quality of Service Issues," a speech to the Pennsylvania Chapter of the National Association of Water Companies. 1991.
5. Presentation on the Safe Drinking Water Act to the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Seattle, WA. 1991.
6. "A Consumer Advocate's View of Federal Pre-emption in Electric Utility Cases," a speech to the Pennsylvania Public Utility Commission Electricity Conference. 1991.
7. 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.
8. Formal Discussant, Regional Acid Rain Workshop, U.S. Environmental Protection Agency and National Regulatory Research Institute, Charlotte, NC. 1992.
9. 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.
10. "The OCA's Concerns About Drinking Water," a speech to the Pennsylvania Public Utility Commission Water Conference. 1992.
11. Member, Technical Horizons Panel, Annual Meeting of the National Association of Water Companies, Hilton Head, SC. 1992.
12. 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.
13. Presentation on Small Water System Viability to the Technical Assistance Center for Small Water Companies, Pa. Department of Environmental Resources, Harrisburg, PA. 1993

14. "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.
15. "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.
16. "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.
17. "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.
18. "Telephone Penetration Rates for Renters in Pennsylvania," a study prepared for the Pennsylvania Office of Consumer Advocate. 1993.
19. "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.
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24. "Are Water Rates Becoming Unaffordable?," a speech to the Legislative and Regulatory Conference, Association of Metropolitan Water Agencies, Washington, DC. 1994.
25. "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.
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35. 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.
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40. "Clean Water at Affordable Rates: A Ratepayers Conference," moderator at symposium sponsored by the New Jersey Division of Ratepayer Advocate, Trenton, NJ. 1996.

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112. Member of Expert Panel, Leadership Forum: Business Management for the Future, Annual Conference and Exposition of the American Water Works Association, Washington, DC. 2011.
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6. *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
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8. *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
9. *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.
10. *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.
11. *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.
12. *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.
13. *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.

14. *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.
15. *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.
16. *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.
17. *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.
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19. *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.
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26. *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.
27. *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.
28. *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.
29. *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.
30. *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.
31. *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.
32. *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.

33. *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.
34. *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.
35. *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.
36. *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.
37. *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.
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40. *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.
41. *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.
42. *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.

43. *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.
44. *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.
45. *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.
46. *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.
47. *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.
48. *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.
49. *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.
50. *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.
51. *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.
52. *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.

53. *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.
54. *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.
55. *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.
56. *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.
57. *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.
58. *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.
59. *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.
60. *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.
61. *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.
62. *People of the State of Illinois v. New Landing Utility, Inc.*, Circuit Court of the 15th 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.
63. *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.
64. *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.

65. *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.
66. *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.
67. *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.
68. *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.
69. *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.
70. *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.
71. *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.
72. *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.
73. *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.
74. *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.
75. *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.

76. *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.
77. *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.
78. *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.
79. *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.
80. *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.
81. *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.
82. *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.
83. *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.
84. *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.
85. *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.

86. *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.
87. *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.
88. *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.
89. *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.
90. *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.
91. *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.
92. *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.
93. *Northern Illinois Gas Company d/b/a Nicor Gas Company*, Illinois Commerce Commission, Docket No. 08-0363. 2008. Concerning rate design, cost of service, and automatic rate adjustments, on behalf of the Illinois Office of Attorney General.
94. *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.
95. *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.
96. *In the Matter of Application of Duke Energy Ohio, Inc. for an Increase in Electric Rates*, Public Utilities Commission of Ohio, Case No. 08-0709-EL-AIR. 2009. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
97. *The Peoples Gas Light and Coke Company and North Shore Gas Company Proposed General Increase in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 09-0166 and 09-0167. 2009.

Concerning rate design and automatic rate adjustments on behalf of the Illinois Office of Attorney General, Citizens Utility Board, and City of Chicago.

98. *Illinois-American Water Company Proposed Increase in Water and Sewer Rates*, Illinois Commerce Commission, Docket No. 09-0319. 2009. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General and Citizens Utility Board.
99. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2009-2132019. 2010. Concerning rate design, cost of service, and automatic adjustment tariffs, on behalf of the Pennsylvania Office of Consumer Advocate.
100. *Apple Canyon Utility Company and Lake Wildwood Utilities Corporation Proposed General Increases in Water Rates*, Illinois Commerce Commission, Docket Nos. 09-0548 and 09-0549. 2010. Concerning parent-company charges, quality of service, and other matters, on behalf of Apple Canyon Lake Property Owners' Association and Lake Wildwood Association, Inc.
101. *Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules*, Connecticut Department of Public Utility Control, Docket No. 10-02-13. 2010. Concerning rate design, proof of revenues, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.
102. *Illinois-American Water Company Annual Reconciliation Of Purchased Water and Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 09-0151. 2010. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.
103. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket Nos. R-2010-2166212, et al. 2010. Concerning rate design and cost of service study for four wastewater utility districts, on behalf of the Pennsylvania Office of Consumer Advocate.
104. *Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, Illinois Power Company d/b/a AmerenIP Petition for accounting order*, Illinois Commerce Commission, Docket No. 10-0517. 2010. Concerning ratemaking procedures for a multi-district electric and natural gas utility, on behalf of the Illinois Office of Attorney General.
105. *Commonwealth Edison Company Petition for General Increase in Delivery Service Rates*, Illinois Commerce Commission Docket No. 10-0467. 2010. Concerning rate design and cost of service study, on behalf of the Illinois Office of Attorney General.
106. *Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2010-2179103. 2010. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.
107. *Application of Yankee Gas Services Company for Amended Rate Schedules*, Connecticut Department of Public Utility Control, Docket No. 10-12-02. 2011. Concerning rate design and cost of service for a natural gas utility, on behalf of the Connecticut Office of Consumers' Counsel.
108. *California-American Water Company*, California Public Utilities Commission, Application 10-07-007. 2011. Concerning rate design and cost of service for multiple water-utility service areas, on behalf of The Utility Reform Network.

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109. *Little Washington Wastewater Company, Inc., Masthope Wastewater Division*, Pennsylvania Public Utility Commission Docket No. R-2010-2207833. 2011. Concerning rate design and various revenue requirements issues, on behalf of the Masthope Property Owners Council.
110. *In the matter of Pittsfield Aqueduct Company, Inc.*, New Hampshire Public Utilities Commission Case No. DW 10-090. 2011. Concerning rate design and cost of service on behalf of the New Hampshire Office of the Consumer Advocate.
111. *In the matters of Pennichuck Water Works, Inc. Permanent Rate Case and Petition for Approval of Special Contract with Anheuser-Busch, Inc.*, New Hampshire Public Utilities Commission Case Nos. DW 10-091 and DW 11-014. 2011. Concerning rate design, cost of service, and contract interpretation on behalf of the New Hampshire Office of the Consumer Advocate.
112. *Artesian Water Co., Inc. v. Chester Water Authority*, U.S. District Court for the Eastern District of Pennsylvania Case No. 10-CV-07453-JP. 2011. Concerning cost of service, ratemaking methods, and contract interpretation on behalf of Chester Water Authority.
113. *North Shore Gas Company and The Peoples Gas Light and Coke Company Proposed General Increases in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 11-0280 and 11-0281. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General, the Citizens Utility Board, and the City of Chicago.
114. *Ameren Illinois Company: Proposed general increase in electric delivery service rates and gas delivery service rates*, Illinois Commerce Commission, Docket Nos. 11-0279 and 11-0282. 2011. Concerning rate design and cost of service for natural gas and electric distribution service, on behalf of the Illinois Office of Attorney General and the Citizens Utility Board.
115. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2232243. 2011. Concerning rate design, cost of service, sales forecast, and automatic rate adjustments on behalf of the Pennsylvania Office of Consumer Advocate.
116. *Aqua Illinois, Inc. Proposed General Increase in Water and Sewer Rates*, Illinois Commerce Commission, Docket No. 11-0436. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General.
117. *City of Nashua Acquisition of Pennichuck Corporation*, New Hampshire Public Utilities Commission, Docket No. DW 11-026. 2011. Concerning the proposed acquisition of an investor-owned utility holding company by a municipality, including appropriate ratemaking methodologies, on behalf of the New Hampshire Office of Consumer Advocate.
118. *An Application by Heritage Gas Limited for the Approval of a Schedule of Rates, Tolls and Charges*, Nova Scotia Utility and Review Board, Case NSUARB-NG-HG-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.
119. *An Application of Halifax Regional Water Commission for Approval of a Cost of Service and Rate Design Methodology*, Nova Scotia Utility and Review Board, Case NSUARB-W-HRWC-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.

120. *National Grid USA and Liberty Energy Utilities Corp.*, New Hampshire Public Utilities Commission, Docket No. DG 11-040. 2011. Concerning the costs and benefits of a proposed merger and related conditions, on behalf of the New Hampshire Office of Consumer Advocate.
121. *Great Northern Utilities, Inc., et al.*, Illinois Commerce Commission, Docket Nos. 11-0059, et al. 2012. Concerning options for mitigating rate impacts and consolidating small water and wastewater utilities for ratemaking purposes, on behalf of the Illinois Office of Attorney General.
122. *Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2267958. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Pennsylvania Office of Consumer Advocate.
123. *Golden State Water Company*, California Public Utilities Commission, Application 11-07-017. 2012. Concerning rate design and quality of service, on behalf of The Utility Reform Network.
124. *Golden Heart Utilities, Inc. and College Utilities Corporation*, Regulatory Commission of Alaska, Case Nos. U-11-77 and U-11-78. 2012. Concerning rate design and cost of service, on behalf of the Alaska Office of the Attorney General.
125. *Illinois-American Water Company*, Illinois Commerce Commission, Docket No. 11-0767. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Illinois Office of Attorney General.
126. *Application of Tidewater Utilities, Inc., for a General Rate Increase in Water Base Rates and Tariff Revisions*, Delaware Public Service Commission, Docket No. 11-397. 2012. Concerning rate design and cost of service study, on behalf of the Staff of the Delaware Public Service Commission.
127. *In the Matter of the Philadelphia Water Department's Proposed Increase in Rates for Water and Wastewater Utility Services*, Philadelphia Water Commissioner, FY 2013-2016. 2012. Concerning rate design and related issues for storm water service, on behalf of Citizens for Pennsylvania's Future.
128. *Corix Utilities (Illinois) LLC, Hydro Star LLC, and Utilities Inc. Joint Application for Approval of a Proposed Reorganization*, Illinois Commerce Commission, Docket No. 12-0279. 2012. Concerning merger-related synergy savings and appropriate ratemaking treatment of the same, on behalf of the Illinois Office of Attorney General.
129. *North Shore Gas Company and The Peoples Gas Light and Coke Company*, Illinois Commerce Commission, Docket Nos. 12-0511 and 12-0512. 2012. Concerning rate design, cost of service study, and automatic rate adjustment tariff on behalf of the Illinois Office of Attorney General.
130. *Pa. Public Utility Commission v. City of Lancaster Sewer Fund*, Pennsylvania Public Utility Commission, Docket No. R-2012-2310366. 2012. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.
131. *Aquarion Water Company of New Hampshire*, New Hampshire Public Utilities Commission, Docket No. DW 12-085. 2013. Concerning tariff issues, including an automatic adjustment clause for infrastructure improvement, on behalf of the New Hampshire Office of Consumer Advocate.

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132. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates*, Public Utilities Commission of Ohio, Case No. 12-1682-EL-AIR, et al. 2013. Concerning rate design and tariff issues, on behalf of the Office of the Ohio Consumers' Counsel.
133. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Natural Gas Distribution Rates*, Public Utilities Commission of Ohio, Case No. 12-1685-GA-AIR, et al. 2013. Concerning cost-of-service study, rate design, and tariff issues, on behalf of the Office of the Ohio Consumers' Counsel.
134. *In the Matter of the Application of The Dayton Power and Light Company to Establish a Standard Service Offer in the Form of an Electric Security Plan*, Public Utilities Commission of Ohio, Case No. 12-426-EL-SSO, et al. 2013. Concerning rate design, on behalf of the Office of the Ohio Consumers' Counsel.
135. *Application of the Halifax Regional Water Commission, for Approval of Amendments to its Schedule of Rates and Charges and Schedule of Rules and Regulations for the delivery of water, public and private fire protection, wastewater and stormwater services*, Nova Scotia Utility and Review Board, Matter No. M05463, 2013. Concerning rate design, cost-of-service study, and miscellaneous tariff provisions, on behalf of the Consumer Advocate of Nova Scotia.
136. *California Water Service Co. General Rate Case Application*, California Public Utilities Commission, Docket No. A.12-07-007. 2013. Concerning rate design, phase-in plans, low-income programs, and other tariff issues, on behalf of The Utility Reform Network.
137. *Application of The United Illuminating Company to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority, Docket No. 13-01-19. 2013. Concerning sales forecast, rate design, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.
138. *Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority, Docket No. 13-02-20. 2013. Concerning sales forecast and rate design on behalf of the Connecticut Office of Consumer Counsel.
139. *Ameren Illinois Company, Proposed General Increase in Natural Gas Delivery Service Rates*, Illinois Commerce Commission, Docket No. 13-0192. 2013. Concerning rate design and revenue allocation, on behalf of the Illinois Office of Attorney General and Citizens Utility Board.
140. *Commonwealth Edison Company, Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Docket No. 13-0387. 2013. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.
141. *In the Matter of the Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service*, District of Columbia Public Service Commission, Formal Case No. 1103. 2013. Concern rate design, revenue allocation, and cost-of-service study issues, on behalf of the District of Columbia Office of Peoples' Counsel.
142. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2013-2355276. 2013. Concerning rate design, revenue allocation, and regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.

143. *In the Matter of the Revenue Requirement and Transmission Tariff Designated as TA364-8 filed by Chugach Electric Association, Inc.*, Regulatory Commission of Alaska, U-13-007. 2013. Concerning rate design and cost-of-service study issues, on behalf of the Alaska Office of the Attorney General.
144. *Ameren Illinois Company: Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Docket No. 13-0476. 2013. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.
145. *Pa. Public Utility Commission v. City of Bethlehem Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2013-2390244. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
146. *In the Matter of the Tariff Revision Designated as TA332-121 filed by the Municipality of Anchorage d/b/a Municipal Light and Power Department*, Regulatory Commission of Alaska, U-13-184. 2014. Concerning rate design and cost-of-service study issues, on behalf of the Alaska Office of the Attorney General.
147. *Pa. Public Utility Commission v. Pike County Light and Power Co. - Gas*, Pennsylvania Public Utility Commission, Docket No. R-2013-2397353. 2014. Concerning rate design and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
148. *Pa. Public Utility Commission v. Pike County Light and Power Co. - Electric*, Pennsylvania Public Utility Commission, Docket No. R-2013-2397237. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
149. *The Peoples Gas Light and Coke Company North Shore Gas Company Proposed General Increase In Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 14-0224 and 14-0225. 2014. Concerning rate design on behalf of the Illinois Office of the Attorney General and the Environmental Law and Policy Center.
150. *Apple Valley Ranchos Water Company*, California Public Utilities Commission, Docket No. A.14-01-002. 2014. Concerning rate design and automatic rate adjustment mechanisms on behalf of the Town of Apple Valley.
151. *Application by Heritage Gas Limited for Approval to Amend its Franchise Area*, Nova Scotia Utility and Review Board, Matter No. M06271. 2014. Concerning criteria, terms, and conditions for expanding a utility's service area and using transported compressed natural gas to serve small retail customers, on behalf of the Nova Scotia Consumer Advocate.
152. *Notice of Intent of Entergy Mississippi, Inc. to Modernize Rates to Support Economic Development, Power Procurement, and Continued Investment*, Mississippi Public Service Commission Docket No. 2014-UN-132. 2014. Concerning rate design and tariff issues, on behalf of the Mississippi Public Utilities Staff.
153. *Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2014-2418872. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

154. *Pa. Public Utility Commission v. Borough of Hanover Municipal Water Works*, Pennsylvania Public Utility Commission, Docket No. R-2014-2428304. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
155. *Investigation of Commonwealth Edison Company's Cost of Service for Low-Use Customers In Each Residential Class*, Illinois Commerce Commission, Docket No. 14-0384. 2014. Concerning rate design on behalf of the Illinois Office of Attorney General.
156. *Application of the Halifax Regional Water Commission, for Approval of its Schedule of Rates and Charges and Schedule of Rules and Regulations for the Provision of Water, Public and Private Fire Protection, Wastewater and Stormwater Services*, Nova Scotia Utility and Review Board, Matter No. M06540. 2015. Concerning rate design, cost of service study, and tariff issues on behalf of the Nova Scotia Consumer Advocate.
157. *Testimony concerning organization and regulation of Philadelphia Gas Works*, Philadelphia City Council's Special Committee on Energy Opportunities. 2015.
158. *Testimony concerning proposed telecommunications legislation*, Maine Joint Standing Committee on Energy, Utilities, and Technology. 2015.
159. *Pa. Public Utility Commission v. United Water Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2015-2462723. 2015. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
160. *Ameren Illinois Company Proposed General Increase in Gas Delivery Service Rates*, Illinois Commerce Commission, Docket No. 15-0142. 2015. Concerning rate design on behalf of the Illinois Office of Attorney General.
161. *Maine Natural Gas Company Request for Multi-Year Rate Plan*, Maine Public Utilities Commission, Docket No. 2015-00005. 2015. Concerning rate design and automatic rate adjustment tariffs on behalf of the Maine Office of the Public Advocate.

OCC Set 16

Witness: Eileen M. Mikkelsen

As to Objections: Carrie M. Dunn

Case No. 14-1297-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and
The Toledo Edison Company for Authority to Provide for a Standard Service Offer
Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan

RESPONSES TO REQUEST

OCC Set 16– Would the capacity charge for proposed Rate HLF change each summer month based on
INT-603 the actual cost to FE of summer mid-day capacity or will it always be based on an annual
formula as shown in Attachment 1 to the Second Supplemental Stipulation?

Response: Objection. The request is vague and ambiguous as to the terms “FE” and “Rate HLF”. Subject to and without waiving the foregoing objections, and assuming that the question is referring to the “Commercial High Load Factor (“HLF”) Experimental Time-of-Use rates” as described in the Second Supplemental Stipulation and Recommendation, and that “FE” is a reference to the Companies, the capacity charge will be based upon \$150/MW-Day for the term of ESP IV.

OCC Set 16

Witness: Eileen M. Mikkelsen

Case No. 14-1297-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and
The Toledo Edison Company for Authority to Provide for a Standard Service Offer
Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan

RESPONSES TO REQUEST

OCC Set 16– What is the source of the Auction Price of \$65.10/MWH on Attachment 1 to the Second
INT-606 Supplemental Stipulation, line 16?

Response: The source of the Auction Price of \$65.10/MWH on Attachment 1, line 16, to the Second Supplemental Stipulation is the Companies' 2015/2016 delivery year competitive bid process average clearing price, which was used for illustrative purposes.

OCC Set 16
Witness: Eileen M. Mikkelsen
As to Objections: Carrie M. Dunn

Case No. 14-1297-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and
The Toledo Edison Company for Authority to Provide for a Standard Service Offer
Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan

RESPONSES TO REQUEST

OCC Set 16– Where specifically in the Second Supplemental Stipulation or elsewhere in the tariffs and
INT-601 applications filed in this proceeding does it indicate that “recovery of differences, if any,
between revenues collected to provide this [Rate HLF] generation service and the cost
associated with providing this generation service would be recovered in Rider GCR” as
stated by Ms. Mikkelsen in her Fourth Supplemental Testimony, p. 2, lines 14-16?

Response: Objection. The request is vague and ambiguous as to the term “Rate HLF”. Subject to and without waiving the foregoing objection and assuming that the question is referring to the “Commercial High Load Factor (“HLF”) Experimental Time-of-Use rate” as described in the Second Supplemental Stipulation and Recommendation, the direct testimony of Companies’ witness Savage states that Rider GCR reconciles differences between the Companies’ actual generation expenses and generation revenues. Customers, if any, taking service under the Commercial High Load Factor (“HLF”) Experimental Time-of-Use rate as described in the Second Supplemental Stipulation and Recommendation would be SSO customers who provide the Companies with generation revenues and will cause the Companies to incur generation expenses.

Comparison of PJM Locational Marginal Price (\$/MWh) for ATSI Zone, July 15-18, 2013, by Hour with Proposed Rate HLF Prices

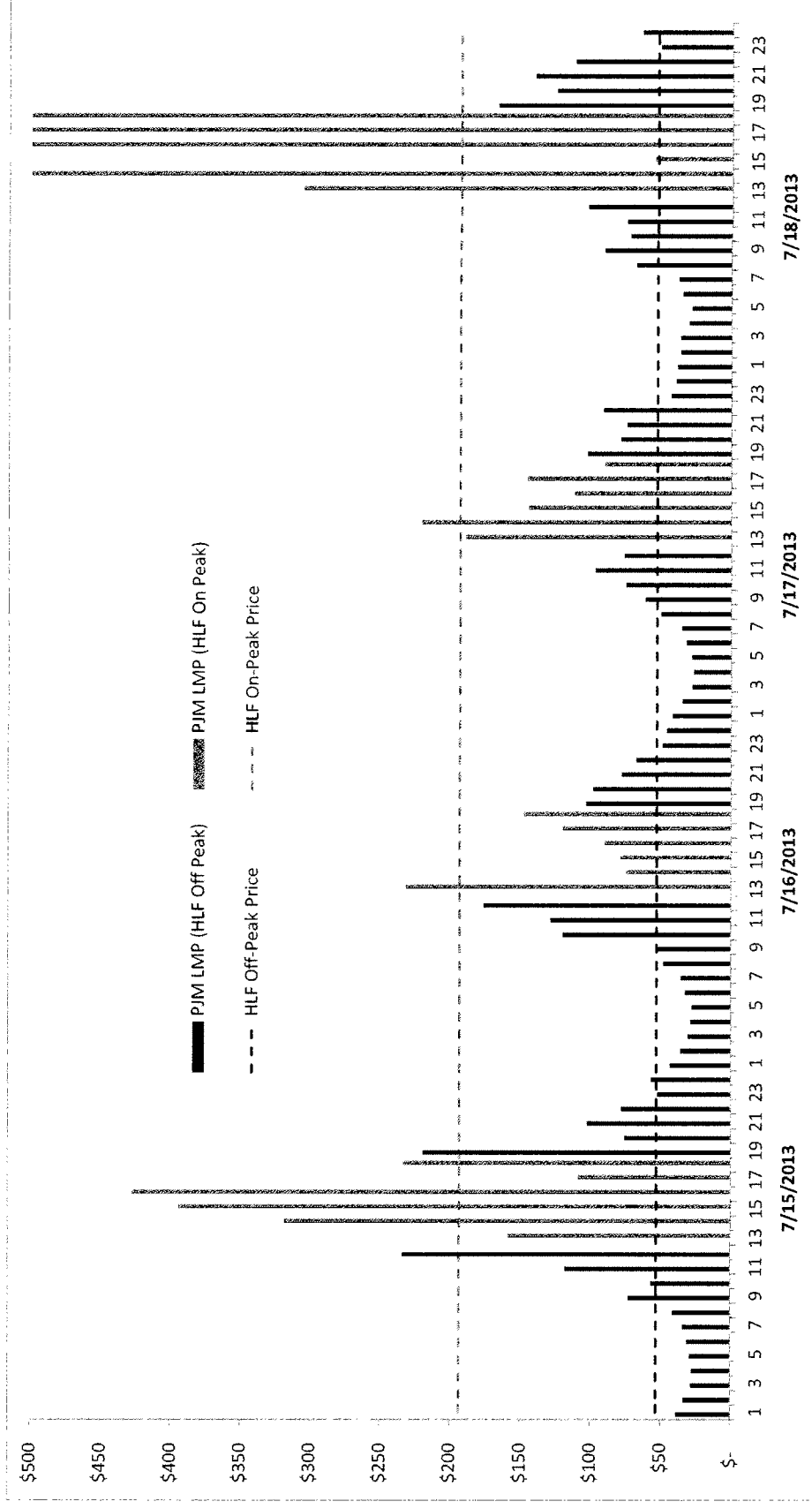


Illustration of Rate HLF Using Load Curve Based on 2013 Actual Commercial Load Curve

Assumptions and Inputs

HLF Customer annual KWH	1,500,000	
HLF Customer load factor	70.00%	
HLF Customer peak hour	244.6	(a)
GP Off-peak price	0.054864	(b)
GP On-peak price	0.199833	(b)
Auction price	0.065100	(b)
GP Power cost w/losses, CAT & auction cost	0.067340	(c)

Results Applied to Commercial Class 2013 Load Curve:

On-peak kWh	92,050	(d)
x GP On-peak price	<u>0.199833</u>	
= On-peak revenues	\$ 18,394.63	
Off-peak kWh	1,407,950	(d)
x GP Off-peak price	<u>0.054864</u>	
= Off-peak revenues	\$ 77,245.77	
Total revenues	\$ 95,640.40	
Total kWh	1,500,000	
x GP power cost w/losses etc.	<u>0.067340</u>	
= GP power cost w/losses etc.	\$ 101,010.00	
Gain (loss) per location	\$ (5,369.60)	

Notes:

(a) Average hour kW (1500000/8760) ÷ load factor (70%)

(b) From attachment to 2nd stipulation

(c) Auction price (0.065) ÷ (1 - Rate GP line loss (0.0291)) ÷ (1 - CAT factor (0.0027)) + Auction expenses (0.000107)

(d) Estimated from Commercial class 2013 hourly load curve; see workpapers

OCC Set 16

Case No. 14-1297-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and
The Toledo Edison Company for Authority to Provide for a Standard Service Offer
Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan

REQUEST FOR PRODUCTION OF DOCUMENTS

OCC Set 16– Please provide a complete proposed tariff (including all terms and conditions) for
RPD-082 proposed Rate HLF.

Response: Objection. The request is vague and ambiguous as to the term “Rate HLF”. Subject to and without waiving the foregoing objection and assuming that the question is referring to the “Commercial High Load Factor (“HLF”) Experimental Time-of-Use rate” as described in the Second Supplemental Stipulation and Recommendation, the Companies have not created a complete proposed tariff sheet at this time.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

8/10/2015 4:51:25 PM

in

Case No(s). 14-1297-EL-SSO

Summary: Testimony Direct Testimony of Scott J. Rubin on behalf of the Office of the Ohio Consumers' Counsel (Public Version) electronically filed by Ms. Deb J. Bingham on behalf of Michael, William J. Mr.