

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Gas Rates.)	Case No. 12-1685-GA-AIR
)	
In the Matter of the Application of Duke Energy Ohio, Inc., for Tariff Approval)	Case No. 12-1686-GA-ATA
)	
In the Matter of the Application of Duke Energy Ohio, Inc., for Approval of an Alternative Rate Plan for Gas Distribution Service.)	Case No. 12-1687-GA-ALT
)	
In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Change Accounting Methods.)	Case No. 12-1688-GA-AAM
)	

**DIRECT TESTIMONY
OF
SCOTT J. RUBIN**

**On Behalf of
The Office of the Ohio Consumers' Counsel**
*10 West Broad Street, Suite 1800
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February 25, 2013

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ATTACHMENTS

Attachment SJR-1:	Curriculum vitae for Scott J. Rubin.
Attachment SJR-2:	OCC Interrogatory Nos. 09-322 through 09-326.
Attachment SJR-3:	Duke Energy, Natural Gas Pipeline Safety and Right-of-Way Use Guide.
Attachment SJR-4:	Excerpt from Duke's April 2006 tariff.
Attachment SJR-5:	Illustration of effect of discount rates and time period on NPV analysis.
Attachment SJR-6:	OCC Interrogatory Nos. 06-289, 06-290, 06-292, 09-347, 09-348, and 09-351; and OCC Request to Produce Document Nos. 09-066 and 09-067.
Attachment SJR-7:	Illustration of effect of different time periods on NPV analysis using 8.13% discount rate.
Attachment SJR-8:	Allocation of MGP costs to customer classes.
Attachment SJR-9:	OCC Interrogatory No. 06-293.
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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 cost of service study, proposed tariff changes, and proposed rate design
14 filed by Duke Energy Ohio, Inc. ("Duke" or "Utility") and to review the related
15 portions of the Staff Report of the Public Utilities Commission of Ohio ("PUCO"
16 or "Commission") that address these issues.

17

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

20 **A4.** I have testified as an expert witness before utility commissions or courts in the
21 District of Columbia, the province of Nova Scotia, and in the states of Alaska,
22 Arizona, California, Delaware, Illinois, Kentucky, Maine, Maryland, New
23 Hampshire, New Jersey, New York, Ohio, Pennsylvania, and West Virginia. I

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

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

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

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

10

11 In the natural gas sector during the past five years, I testified on rate design, tariff,
12 and/or cost of service issues in cases involving East Ohio Gas Company, Northern
13 Illinois Gas Company (Illinois), Peoples Gas Light and Coke Company (Illinois),
14 North Shore Gas Company (Illinois), the Ameren Gas Utilities (Illinois), Yankee
15 Gas Company (Connecticut), and Heritage Gas Ltd. (Nova Scotia). I also
16 conducted a detailed review, and helped negotiate a settlement prior to filing
17 testimony, of a case involving Northern Utilities, Inc. (New Hampshire).

18

II. SUMMARY

Q6. WHAT IS THE FOCUS OF YOUR DIRECT TESTIMONY?

A6. My testimony identifies and discusses four areas where I recommend changes in the Staff Report, with a corresponding effect on Duke's Application. Specifically, I address the following issues:

- OCC Objection 21: Proposed changes in Duke's right-of-way tariff;
- OCC Objection 22: Proposed changes in Duke's main extension tariff (Rider X);
- OCC Objection 29: Treatment of manufactured gas plant costs in the cost-of-service study; and
- OCC Objections 23 and 24: Establishing a proper rate, and determining the cost of service, for residential non-heating customers.

Q7. AS PART OF YOUR WORK, DID YOU REVIEW THE TESTIMONY AND EXHIBITS OF ANY DUKE WITNESSES?

A7. Yes. I reviewed the testimony and exhibits of Duke witnesses Hebbeler, Riddle, Wathen, Ziolkowski, and Laub. I also reviewed other exhibits that are part of the filing and numerous responses to OCC and the Staff discovery requests that were provided by these and other witnesses.

1 **Q8. WHAT PORTIONS OF THE STAFF REPORT DID YOU REVIEW?**

2 **A8.** I conducted a detailed review of the Staff Report's Rates and Tariffs section
3 (pages 18-29) and the Proposed Alternative Regulation Plan section (pages 69-
4 77). I also reviewed the supporting schedules and workpapers relating to these
5 issues.

6
7 **Q9. PLEASE SUMMARIZE YOUR CONCLUSIONS AND**
8 **RECOMMENDATIONS.**

9 **A9.** My conclusions and recommendations are summarized as follows:

- 10 • OCC Objection 21: The Staff erred in accepting Duke's
11 proposed changes in its Right-of-Way tariff. The proposed
12 tariff changes would require customers to give Duke a
13 right-of-way through a customer's property at no cost to
14 Duke, and has the potential to create safety hazards on a
15 customer's property over which the customer would have
16 no control. The existing right-of-way provision in Duke's
17 tariff should remain unchanged.
- 18 • OCC Objection 22: Staff erred in accepting Duke's
19 proposed changes in its main extension tariff (Rider X).
20 The Commission should reject Duke's proposed changes in
21 Rider X. The new main extension policy is not fully
22 developed and Duke cannot demonstrate that the results of
23 applying the tariff provisions would be reasonable and

1 consistent with the public interest. Moreover, it appears
2 that critical pieces of information, for customers --
3 including the discount rate (and how it would change over
4 time), the time period for the net present value analysis, and
5 the conditions for receiving refunds of up-front payments --
6 are neither fully developed nor reflected in the tariff. These
7 provisions are too important to leave to the Utility's
8 discretion. They should be set forth in the main extension
9 policy contained in the tariff, be approved by the
10 Commission and thus known to customers before any
11 customer is subject to these costs. I further recommend
12 that existing Rider X be modified to include all volumetric
13 distribution revenues and customer charge revenues in the
14 determination of whether the customer has met the
15 minimum revenue obligation under the main extension
16 tariff.

- 17 • OCC Objection 29: Staff should not have accepted the
18 Utility's cost-of-service study ("COSS") without change.
19 In particular, the Utility's COSS improperly functionalizes,
20 classifies, and allocates costs associated with manufactured
21 gas plant ("MGP") remediation. If any MGP costs are
22 determined by the PUCO to be collected from customers,
23 then such costs should be functionalized as being solely

1 production-related; classified as being solely commodity-
2 related; and allocated to customer classes using allocator
3 K205 (average and excess excluding interruptible
4 transportation).

- 5 • OCC Objections 23 and 24: Staff improperly accepted
6 Duke's proposed method to design residential rates. In
7 particular, Staff and the Utility are proposing to keep
8 heating and non-heating customers in the same customer
9 class, charge them the same rates, and have those rates
10 recover the majority of the cost of service through a
11 customer charge. Based on my experience with similar
12 utilities, it is highly likely that Duke's average cost to serve
13 a non-heating customer is substantially lower than its
14 average cost to serve a heating customer (meaning that
15 Duke's proposal would set a rate for non-heating customers
16 that is too high). I recommend, therefore, that the
17 Commission require Duke to separate its residential class
18 into a heating class and a non-heating class at the
19 conclusion of this case. I also recommend that Duke be
20 required to perform a COSS reflecting those two classes in
21 its next rate case. For purposes of setting rates in this case,
22 I recommend that the non-heating customer charge should

1 remain equal to the existing base customer charge of
2 \$25.33 per month.

3
4 **III. PROPOSED CHANGES IN NON-RATE TARIFF PROVISIONS (OCC**
5 **OBJECTIONS 21 AND 22)**

6
7 ***Q10. HAS DUKE PROPOSED ANY CHANGES IN THE NON-RATE TERMS***
8 ***AND CONDITIONS OF ITS TARIFF?***

9 ***A10.*** Yes, Duke has proposed several changes in tariff provisions, in addition to the
10 rate increases it proposes in this case.

11
12 ***Q11. DID THE STAFF REPORT DISCUSS ALL OF DUKE'S PROPOSED***
13 ***TARIFF CHANGES?***

14 ***A11.*** No. The Staff Report only discusses those tariff provisions with which the Staff
15 disagrees. On page 18 of the Staff Report, the Staff states: "The Applicant is
16 proposing various textual changes to its tariffs. Unless noted, Staff recommends
17 approval of these changes as proposed by the Applicant."

18
19 ***Q12. ARE THERE ANY NON-RATE TARIFF PROVISIONS THAT WERE***
20 ***IMPLICITLY ACCEPTED BY THE STAFF THAT SHOULD NOT BE***
21 ***ACCEPTED BY THE COMMISSION?***

22 ***A12.*** Yes, there are two tariff changes proposed by Duke and implicitly accepted by the
23 Staff that I recommend be rejected by the Commission: (1) Duke's proposed

changes in its right-of-way provision (Tariff Sheet No. 21.7, pages 4-5, as found on Duke Sch. E-2.1, pages 9-10); and (2) Duke's proposed changes in Rider X dealing with main extensions (Tariff Sheet No. 62.4, as found on Duke Sch. E-2.1, pages 124-126).

A. Right-of-Way Provision (OCC Objection 21)

Q13. WHAT IS THE PURPOSE OF THE CURRENT RIGHT-OF-WAY PROVISION IN DUKE'S TARIFF?

A13. The existing right-of-way ("ROW") tariff states that a Duke customer will provide Duke a ROW across the customer's property, at no cost to Duke, when the ROW is needed to serve the customer. A customer also must provide a ROW at no cost to Duke to serve "customers beyond the customer's property when such rights are **limited to installations along dedicated streets and roads.**" (Emphasis added).

The language I emphasized from the existing tariff above is critically important. It requires a customer to provide Duke with a ROW to serve other customers only when the ROW is along dedicated streets and roads. It does not permit Duke to cross other portions of a customer's property (such as installing a gas main through someone's back yard or along a private driveway or alley) unless Duke negotiates for such access and pays reasonable compensation to the customer.

1 In my experience, the existing language in Duke's tariff is customary within the
2 utility industry and is consistent with general principles relating to a utility's
3 limited use of its power to take private property for providing service to the
4 public.

5
6 ***Q14. HOW IS DUKE PROPOSING TO CHANGE THE ROW TARIFF?***

7 ***A14.*** As summarized in OCC Objection 21, Duke is proposing completely new ROW
8 language in its tariff. Importantly, the new language includes the following
9 provision: "Additionally, the customer shall likewise furnish, without cost to the
10 Company, all necessary rights of way upon or across customer's property
11 necessary or incidental to the supplying of service to other customers who are
12 adjacent to or extend beyond the customer's property."

13
14 The proposed new language eliminates any mention of extensions being along
15 dedicated streets. Instead, the new language would permit Duke to cross a
16 customer's property **at any point**, and the customer would have no redress or
17 right to claim compensation.

18
19 ***Q15. ARE YOU CERTAIN THIS IS THE MEANING OF DUKE'S PROPOSED***
20 ***CHANGES IN THE ROW TARIFF?***

21 ***A15.*** Yes, OCC asked Duke a series of interrogatories relating to this tariff provision. I
22 am attaching as Attachment SJR-2 Duke's responses to OCC Interrogatory Nos.
23 09-322 through 09-326. Duke's responses confirm what I had suspected: that the

Utility is proposing these changes in order to obtain no-cost access to customers' property that is not along dedicated streets. For example, the Utility states: "The best and least cost route could be across a side yard, through the back of the property, etc."¹ That is undoubtedly true, but that does not mean that Duke should be permitted to install a gas main or other facilities in the middle of a customer's yard without the customer's agreement and without compensating the customer.

The Utility claims that it requires such access for "expediency" and to save money. Again, I do not doubt that requiring customers to provide no-cost access to Duke would save the Utility time and money. But that does not make it lawful, reasonable or consistent with limitations on the taking of private property by a Utility.

***Q16. DUKE'S RESPONSE TO OCC INTERROGATORY NO. 09-325 CLAIMS
THE ISSUE IS NOT ABOUT COMPENSATION, BUT ABOUT ACCESS.
DO YOU AGREE?***

A16. No, I do not agree. Duke states: "The Company is not seeking to require an easement or right-of-way for no compensation in all instances." Duke does not explain, however, in what instances it would provide compensation. Moreover, its proposed tariff is quite clear on this point, stating: "the customer **shall** likewise

¹ Duke response to OCC Interrogatory No. 09-322.

1 furnish, **without cost to the Company, all** necessary rights of way” needed to
2 extend service (emphasis added). This language is quite clear and inclusive: the
3 customer must provide the ROW without cost to Duke. While Duke’s
4 interrogatory response may claim that it will compensate customers in some
5 circumstances, there is no such provision in its proposed tariff.

6
7 ***Q17. ARE THERE SAFETY CONSIDERATIONS WITH DUKE’S PROPOSED***
8 ***TARIFF LANGUAGE?***

9 ***A17.*** Yes, there are public safety considerations associated with Duke’s proposed ROW
10 provision. Duke’s proposal would remove a customer’s ability to control where
11 on its property buried infrastructure (and potentially hazardous buried
12 infrastructure, at that) would be installed. Customers may have plans for the use
13 of their property (such as installing a patio, swimming pool, or swing set) that
14 conflict with having a buried gas main in the middle of the property. As an
15 example of the types of restrictions that land owners could face, I am attaching as
16 Attachment SJR-3 a pamphlet produced by Duke for land owners about the
17 restrictions on using property above or adjacent to a natural gas line. The
18 customer also could be subjected to liability if the existence and location of the
19 main are not properly marked and disclosed.

20
21 It’s one thing to have a gas main running along the street where everyone expects
22 there to be buried infrastructure. It’s quite another to have it buried in an
23 unexpected location, such as a side or back yard or along a private alley. Before

1 such a facility is installed in an unusual location, the customer should be required
2 to explicitly agree (including an agreement concerning the marking and use of the
3 property). Further, the customer should have the right to be compensated for the
4 inconvenience, loss of use of the land, and potential liability, associated with
5 having such a facility running through the property.

6

7 ***Q18. WHAT DO YOU RECOMMEND?***

8 ***A18.*** I recommend the Commission reject the Utility's proposed change to its ROW
9 tariff. The existing provision in Duke's tariff is reasonable and should remain in
10 the tariff.

11

12 **B. Rider X (Main Extension) (OCC Objection 22)**

13

14 ***Q19. WHAT IS THE PURPOSE OF THE CURRENT MAIN EXTENSION***
15 ***PROVISION FOUND IN RIDER X OF DUKE'S TARIFF?***

16 ***A19.*** Rider X is Duke's main extension policy. It sets forth the terms and conditions
17 under which Duke will extend a gas main to serve a new customer, group of
18 customers, or development.

19

20 ***Q20. WHAT IS DUKE'S CURRENT MAIN EXTENSION POLICY?***

21 ***A20.*** Duke witness Hebbeler describes the Utility's current main extension policy on
22 page 28 of his direct testimony, as follows:

1 Under Duke Energy Ohio's tariff, Rider X, a line extension for an
2 individual customer is provided without charge only where that
3 extension is 100 feet or less. In situations where the extension
4 would have to be longer than 100 feet, the Company may provide
5 an extension without charge where the individual customer's
6 monthly volume is anticipated to be in excess of the minimum use
7 specified in the tariff under which service will be provided * * * If
8 the applicable tariff does not contain a minimum use volume, then
9 the monthly minimum bills (not including customer charges and
10 the cost of purchased gas) must be 1.5 percent of the cost of the
11 main extension. In addition, the customer must agree to receive
12 service for a minimum term that will allow the Company to
13 recover the cost of the extension.

14
15 ***Q21. FROM THE PERSPECTIVE OF RESIDENTIAL CUSTOMERS, ARE***
16 ***THERE PROBLEMS WITH THE UTILITY'S EXISTING MAIN***
17 ***EXTENSION POLICY?***

18 ***A21.*** Yes. As summarized in OCC Objection 22, the existing policy, as reflected in
19 Rider X, excludes customer charge revenues from the calculation of minimum
20 revenues the customer must provide to pay for the main extension. This policy
21 was adopted many years ago, before the Utility implemented a straight fixed
22 variable ("SFV") rate design pricing mechanism that greatly increased residential
23 customer charges and decreased the volumetric distribution charges.

1 For example, at the time Duke acquired the former Cincinnati Gas & Electric Co.
2 in April 2006, the residential gas tariff had a customer charge of \$6.00 per month
3 and a distribution charge of \$0.18591 per 100 cubic feet ("Ccf"). (A copy of the
4 relevant pages from the 2006 tariff are attached as Attachment SJR-4.) Thus, a
5 typical customer who used 1,000 Ccf per year would have paid Duke \$257.91 in
6 non-gas-cost revenues. Of that amount, \$185.91 (72%) would have been
7 volumetric revenues that would be credited toward the customer's minimum
8 payment obligation under the main extension calculation.

9
10 In contrast, the Utility's present tariff for Rate RS has a customer charge of
11 \$25.33 per month and a volumetric charge of \$0.032728 per Ccf for the first 400
12 Ccf per month. Duke Sch. E-2.1, p. 13. Thus, the same typical customer using
13 1,000 Ccf per year would pay Duke \$336.69 annually in non-gas-cost revenues.
14 Of that amount, only \$32.73 (less than 10%) would be from volumetric revenues
15 that would be credited toward the minimum payment obligation.

16
17 In other words, Duke's main extension policy does not reflect Duke's currently
18 effective residential rate structure. It would be grossly unreasonable to calculate
19 the cost effectiveness of a residential main extension based solely on volumetric
20 distribution revenues, given the current structure of the Utility's residential rates.

Q22. CAN YOU PROVIDE AN ILLUSTRATION OF THE PROBLEM?

A22. I will use a very simple example. Assume that the cost of the main extension beyond 100 feet is \$2,000. Under current Rider X, because the main extension is more than 100 feet, the customer would be required to guarantee a minimum payment to Duke, excluding the customer charge and cost of gas, of 1.5% of the construction cost per month. In this example, with a construction cost of \$2,000, the customer would be required to guarantee revenues of \$30 per month (\$360 per year). This minimum payment would be required for 67 months unless the customer's cumulative payments reach \$2,000 sooner.

However, under the rate structure in effect in 2006, our hypothetical typical customer would provide Duke with eligible revenues of \$185.91 per year for gas usage. Thus, in order to meet the minimum revenue guarantee under the existing tariff (\$360 per year in this example), the customer would be responsible for paying an additional \$174.09 per year (less than \$15 per month) to meet the minimum payment obligation.

In contrast, under the currently effective rate structure, this hypothetical customer would provide Duke with eligible revenues of only \$32.73 per year. So the customer would be responsible for paying an additional \$337.27 per year (more than \$28 per month) in order to meet the minimum payment obligation for the main extension.

Q23. HOW IS THE UTILITY PROPOSING TO CHANGE RIDER X?

A23. The Utility is proposing to replace the minimum revenue guarantee under Rider X with an up-front payment based on the net present value (“NPV”) of the anticipated revenues. Mr. Hebbeler describes Duke’s proposal on page 29 of his direct testimony, as follows:

[T]he Company is proposing to perform an NPV analysis of the construction cost to be incurred and the revenue to be received from an individual customer for a main extension in excess of 100 feet. If the NPV is positive, the Company will not charge the individual customer for the line extension. If the NPV is negative, the customer will be requested to pay for the construction of the line extension in an amount equal to the negative NPV. Any payment made when the NPV is negative is eligible for refund due to subsequent connections under the existing plan.

Q24. DOES THE UTILITY’S PROPOSED CHANGE IN RIDER X ADDRESS YOUR CONCERNS WITH THE CURRENT LANGUAGE IN RIDER X?

A24. Duke’s proposed change in Rider X partially addresses my concerns with Rider X, but it also creates new problems. In particular, the revised language properly considers all residential distribution revenues; that is, customer charge revenues are no longer excluded from the calculation. As I explained above, this change is required in light of the dramatic change in Duke’s residential rate design during

1 the past few years. Unfortunately, though, the proposed new Rider X creates
2 more problems than it solves.

3

4 ***Q25. WHAT IS WRONG WITH DUKE'S PROPOSAL?***

5 ***A25.*** The Utility's proposed tariff language has a number of undefined terms and
6 conditions, and it does not appear to be a fully developed proposal. For example,
7 under the new tariff, the main extension calculation for an individual residential
8 customer would be based on a NPV calculation comparing the cost of
9 construction to the NPV of the customer's revenues. In performing a NPV
10 analysis, there are two key variables: the discount rate and the period of time.
11 The tariff does not specify how either of those critically important variables will
12 be determined.

13

14 ***Q26. CAN YOU ILLUSTRATE THE IMPORTANCE OF THESE VARIABLES?***

15 ***A26.*** Yes, to take a simple example, assume the same main extension cost as in the
16 previous example I discussed: \$2,000. Using Duke's existing rates and our
17 hypothetical customer using 1,000 Ccf per year, the customer would pay Duke
18 \$336.69 annually in non-gas-cost revenues. If this annual payment is discounted
19 at 5% per year for 10 years, the NPV would be positive by more than \$600 and
20 the customer would not need to pay for the main extension. If, however, the NPV
21 analysis used a discount rate of 10% and was conducted for only 5 years, the NPV
22 would be negative \$690 and the customer would be required to pay Duke \$690 up
23 front. I show these calculations on Attachment SJR-5.

1 ***Q27. DOES THE TARIFF PROVIDE ANY INDICATION OF HOW THE***
2 ***DISCOUNT RATE WILL BE DETERMINED OR OVER WHAT PERIOD***
3 ***OF TIME THE NPV ANALYSIS WILL BE EVALUATED?***

4 ***A27.*** No. The tariff does not say anything about determining a discount rate or the time
5 period over which the revenue stream will be analyzed.

6
7 ***Q28. HAS DUKE CLARIFIED THESE ISSUES IN DISCOVERY?***

8 ***A28.*** OCC asked Duke several discovery requests to clarify how the new rider would
9 work (copies are attached as Attachment SJR-6)², but the responses are not
10 satisfactory. In response to OCC Interrogatory No. 09-347, Duke stated it would
11 use a discount rate of 8.13%, but it did not indicate how it arrived at that figure or
12 how it would vary over time. Duke also has not indicated the period of time over
13 which the NPV would be evaluated. While it is using six years for large
14 commercial and industrial customers, there is no indication of the time period it
15 would use for residential customers. Further, the Utility has not explained the
16 rationale for using six years for large customers, so I cannot determine whether
17 the same rationale would apply to residential customers.

18
19 More importantly, Duke was unable to provide a sample calculation of how the
20 new rider would work. In response to OCC Interrogatory No. 06-292, the Utility

² The following responses are included in Attachment SJR-6: Duke responses to OCC Interrogatory Nos. 06-289, 06-290, 06-292, 09-347, 09-348, and 09-351; and OCC Request to Produce Document Nos. 09-066 and 09-067.

1 stated it was developing a “new calculator for main extensions.” In OCC
2 Interrogatory No. 09-347, Duke stated that the “new tool has not yet been
3 developed” so it could not say if the new tariff would result in a higher or lower
4 customer contribution under different scenarios. Similarly, in OCC Request to
5 Produce Document No. 09-067, Duke was able to provide a calculation for a
6 hypothetical main extension under its existing tariff, but it could not provide a
7 comparable figure under its proposed new tariff because “the new NPV tool is not
8 yet developed.”

9
10 ***Q29. DO YOU KNOW HOW DUKE DEVELOPED ITS 8.13% DISCOUNT***
11 ***RATE?***

12 ***A29.*** It appears that Duke is using its after-tax weighted cost of capital, but Duke has
13 not explained why that would be the appropriate discount rate (instead of a short-
14 term debt rate, for example) to use for the investment of a few thousand dollars
15 for a customer line extension. This is particularly true for this type of investment
16 to serve individual residential customers. Interest rates on home mortgages and
17 equity lines of credit are near all-time lows, and are much lower than Duke’s
18 weighted cost of capital. It would be unreasonable to use a discount rate that
19 exceeds Duke’s incremental cost of capital (which would be its cost of short-term
20 debt), let alone the customer’s incremental cost of capital.

21
22 Moreover, I note that Duke’s parent company has a program known as Duke
23 Energy PremierNotes that borrows money from small investors at interest rates

1 ranging from 1.1% to 1.5% (rates effective as of Feb. 11, 2013).³ In my opinion,
2 these interest rates are a much more accurate reflection of Duke's incremental
3 cost to finance main extensions. If the changes to Rider X to use an NPV
4 approach are approved by the PUCO, therefore, I recommend that the discount
5 rate should be equal to the interest rate Duke pays to raise short-term capital from
6 small investors, which is currently no more than 1.5%.

7
8 ***Q30. PLEASE ASSUME HYPOTHETICALLY THAT DUKE'S PROPOSED***
9 ***8.13% DISCOUNT RATE IS REASONABLE. WHAT EFFECT WOULD***
10 ***THE TIME PERIOD OF THE ANALYSIS HAVE ON THE CUSTOMER***
11 ***CONTRIBUTION?***

12 ***A30.*** If I assume that Duke's proposed discount rate is reasonable, the time period of
13 the analysis remains extremely important. On Attachment SJR-7, I use the same
14 assumptions I used in my earlier example, but with an 8.13% discount rate. The
15 result is that if the NPV is calculated over five years, the customer would owe
16 Duke \$628 up front. If the analysis looks at six years, then the customer's
17 contribution decreases to \$417. And if the analysis is taken out to ten years, the
18 NPV analysis shows a positive result of \$269, so the customer would not need to
19 make any up-front payment to Duke.

³ <http://www.duke-energy.com/investors/individual-investors/premiernotes-investment.asp>, last accessed Feb. 19, 2013.

1 ***Q31. OTHER THAN THE PROBLEMS WITH THE NPV ANALYSIS, ARE***
2 ***THERE OTHER PROBLEMS WITH DUKE'S PROPOSED CHANGES IN***
3 ***RIDER X?***

4 ***A31.*** Yes. For an individual service installation, the tariff states that the customer's
5 deposit (that is, the up-front payment) "shall be eligible for a refund consistent
6 with the terms and conditions of the main extension contract entered into between
7 the Company and the customer." In response to OCC Request to Produce
8 Document No. 09-066 (included in Attachment SJR-6), Duke provided the form
9 of the contract that would be used. The contract form, however, does not indicate
10 under what conditions all or a portion of the deposit would be refunded to the
11 customer.

12
13 ***Q32. WHAT DO YOU RECOMMEND?***

14 ***A32.*** Because of all of these problems, I recommend the Commission reject Duke's
15 proposed changes in Rider X. The new main extension policy is not fully
16 developed and Duke cannot demonstrate that the results of applying the tariff
17 provisions would be reasonable and consistent with the public interest. Moreover,
18 it appears that critical pieces of information -- including the discount rate (and
19 how it would change over time), the time period for the NPV analysis, and the
20 conditions for receiving refunds of up-front payments -- are neither fully
21 developed nor reflected in the tariff. These provisions are too important to leave
22 to the Utility's discretion. They should be set forth in the main extension policy

1 contained in the tariff, and thus known to customers before any customer is
2 subject to these costs.

3
4 **Q33. SHOULD THE COMMISSION MAKE ANY CHANGES IN RIDER X AT**
5 **THIS TIME?**

6 **A33.** Yes, as I explained above, with the adoption of a more current residential rate
7 design based on SFV rates, the customer charge has become a larger percentage
8 of the revenues paid by most residential customers. Excluding customer charge
9 revenues from the calculation of minimum revenues under the current main
10 extension policy unjustifiably increases the financial burden on new customers.
11 New customers should not be required to pay substantially more for a main
12 extension solely because the PUCO changed the structure of Duke's residential
13 rates. I recommend, therefore, that Rider X should be modified to include all
14 base-rate revenues (customer charge revenues and distribution (per-Ccf)
15 revenues) in determining whether the customer meets its minimum-payment
16 obligation for a main extension. Specifically, I recommend the following changes
17 in paragraph 2(a) of the existing tariff language for Rider X (Sheet No. 62):

2. Other Extensions

(a) Individual Customer

The Company may extend a main in excess of one hundred (100) feet without charge to an individual customer whose monthly volume shall be in excess of the minimum use as specified within the applicable tariff under which service will be provided and the Company has existing adequate peak demand capabilities, as required by the customer. In the event the Company's applicable tariff does not contain a minimum use volume, then the monthly minimum bill, exclusive of ~~customer charges and~~ the cost of purchased gas, shall be one

←

and one-half percent (1.5%) of the cost of the main extension. The customer will be obligated to receive service for a minimum term which will allow the Company to recover the cost of the main extension. The customer shall be billed the minimum amount or volume for each month during the minimum term as specified in the agreement. In the event the customer terminates service prior to the expiration of the minimum term of service, the Company may charge the difference between the cost of the main extension and revenue received from the customer, exclusive of ~~customer charges and~~ the cost of purchased gas, as a termination charge. ←

1

2 **IV. COST-OF-SERVICE STUDY ISSUE: MANUFACTURED GAS PLANT**
3 **COSTS (OCC OBJECTION 29)**

4

5 ***Q34. DID DUKE PREPARE A COST-OF-SERVICE STUDY (“COSS”) TO***
6 ***ALLOCATE ITS REVENUE REQUIREMENT AMONG THE***
7 ***CUSTOMER CLASSES?***

8 **A34.** Yes. Duke’s COSS was filed as Schedule E-3.2, including the subparts in
9 Schedules E-3.2a through E-3.2j.

10

11 ***Q35. DOES THE STAFF REPORT PROPOSE ANY CHANGES IN DUKE’S***
12 ***COSS?***

13 **A35.** No. The Staff Report fully accepts Duke’s COSS.⁴

14

⁴ Staff Report at 23.

1 **Q36. DO YOU TAKE ISSUE WITH ANY ASPECTS OF THE COSS?**

2 **A36.** Yes, as summarized in OCC Objection 29, I disagree with the manner in which
3 Duke allocated costs associated with the clean-up of old manufactured gas plant
4 (“MGP”) locations. I understand that the recovery of these costs from customers
5 is a separate issue in this case (both the amount of such cost recovery and the time
6 period over which the costs should be recovered). I am not addressing the merits
7 of cost recovery,⁵ or the time period for cost recovery.⁶ I only address the proper
8 treatment in the COSS of any MGP costs, in the event the Commission finds any
9 MGP costs to be reasonable and lawful for collection from customers.

10

11 **Q37. WHAT WERE MANUFACTURED GAS PLANTS?**

12 **A37.** Manufactured Gas Plants (“MGP”) began appearing in the United States in the
13 early 1800s and in some cases continued to be used into the 1970s. As the name
14 implies, they manufactured gas (as well as other products). The gas was used for
15 illumination (gas lamps were common before electricity was introduced), and
16 eventually for many of the same purposes that natural gas is used for today, such
17 as cooking, heating, and industrial processes. Gas manufacturing used various
18 raw materials as the feedstock, including coal, oil, and in some cases blending
19 with natural gas to assure a consistent quality. The New York State Department

⁵ The merits of cost recovery for Manufactured Gas Plant is discussed in the testimony of OCC witnesses Bruce Hayes and James Campbell.

⁶ The merits of the time period for recovery of manufactured Gas Plant costs from customers is discussed in the testimony of OCC Witness Dave Effron.

1 of Environmental Conservation has published a concise history of gas
2 manufacturing which provides useful background on the plants.⁷
3

4 In other words, manufactured gas plants existed to produce gas that the Utility
5 could distribute to customers for their use.
6

7 ***Q38. HOW DID DUKE TREAT MGP COSTS IN THE COSS?***

8 ***A38.*** The first step in a COSS is to functionalize the costs. The functions in Duke's
9 COSS study are production, storage, and distribution. On Schedule E-3.2, page 9,
10 line 30, Duke shows the Amortization of MGP Deferred Expense in the amount of
11 \$21,777,806. It functionalized the cost using factor NP29. Factor NP29 is shown
12 on Schedule E-3.2, page 16, line 40, where it is described as a weighted net plant
13 ratio. Because nearly all of Duke's jurisdictional plant investment is for
14 distribution, Factor NP29 assigns 99.454% of cost to the distribution function and
15 only 0.546% to the production function. Thus, of the \$21,777,806 claimed by
16 Duke, it has functionalized \$118,907 as related to production and \$21,658,899 as
17 related to distribution.
18

⁷ New York State Department of Environmental Conservation, 2008. *New York State's Approach to the Remediation of Former Manufactured Gas Plant Sites*, available at <http://www.dec.ny.gov/docs/remediation_hudson_pdf/nysmgpprogram.pdf>, last accessed, Jan. 16, 2013.

1 ***Q39. IS THIS A PROPER WAY TO FUNCTIONALIZE COSTS ASSOCIATED***
2 ***WITH MGP CLEAN-UP?***

3 ***A39.*** No. As I explained above, MGP existed to produce gas. Any costs associated
4 with MGP should be functionalized 100% to the production function.
5 Importantly, this treatment would be consistent with how Duke allocates
6 production plant on its system. The COSS shows that Duke has approximately \$3
7 million in rate base associated with such plant. Schedule E-3.2, page 2, line 4
8 (gross plant in service), less page 3, line 3 (depreciation reserve). Duke assigns
9 100% of its existing production plant investment to the production function.

10
11 ***Q40. WHAT IS THE NEXT STEP IN THE COSS?***

12 ***A40.*** The next step is classification. In the classification step each functionalized cost
13 is assigned to one or more classifications. In Duke's COSS study, those
14 classifications are demand, commodity, and customer.

15
16 ***Q41. HOW DID THE UTILITY CLASSIFY MGP COSTS IN ITS COSS?***

17 ***A41.*** The Utility's study classifies all production-related costs to the commodity
18 classification, including the small portion of MGP costs Duke treated as
19 production-related. See Schedule E-3.2a, page 9, line 30. Duke's COSS
20 classifies distribution-related MGP costs using a weighted plant ratio that treats
21 52.071% of the costs as demand-related and 47.929% of the costs as customer-
22 related (factor NP29 on Schedule E-3.2c, page 16, line 40).

1 The result is that Duke classifies the \$21,777,806 of MGP costs as being
2 \$11,278,005 demand-related, \$10,380,894 customer-related, and only \$118,907
3 commodity-related. See Schedules E-3.2c, page 9, line 30 and E-3.2a, page 9,
4 line 30.

5
6 ***Q42. IS THIS A REASONABLE WAY TO CLASSIFY MGP COSTS?***

7 ***A42.*** No. As I explained above, manufactured gas plants existed to produce gas and to
8 ensure a consistent quality of gas. All of the cost associated with such plants
9 should be treated as a commodity-related cost (the same way Duke treats its
10 existing production plant). There is absolutely no basis for assuming that almost
11 one-half of the cost is customer-related (which would mean that the cost is
12 incurred to serve a customer irrespective of the amount of gas used by the
13 customer). While there is a demand element to production plant, that is
14 recognized in the allocation of such costs to customer classes, as I explain below.

15
16 ***Q43. WHAT HAPPENS TO CLASSIFIED COSTS IN THE COSS?***

17 ***A43.*** The last step in a COSS is to allocate classified costs to customer classes.

18
19 ***Q44. WHAT IS THE RESULT IN DUKE'S COSS OF ALLOCATING MGP***
20 ***COSTS TO THE CUSTOMER CLASSES?***

21 ***A44.*** The results of the allocation step are shown on Duke's Schedule E-3.2f, page 9,
22 line 30. Duke allocates \$15,698,913 (72.1%) of MGP costs to the residential
23 class, \$1,741,790 (8.0%) to the small general service class, \$3,332,182 (15.3%) to

1 the large general service class, and \$1,004,921 (4.6%) to the interruptible
2 transportation class.

3

4 ***Q45. IS THIS ALLOCATION OF MGP COSTS TO THE CUSTOMER***
5 ***CLASSES CONSISTENT WITH PRINCIPLES OF COST CAUSATION?***

6 ***A45.*** No, it is not. As I have discussed, MGP costs are production-related expenses and
7 should have been allocated in the same manner as Duke's other production plant.
8 There is no rational basis for assuming that the residential class should be
9 responsible for 72% of MGP costs when the class uses less than 50% of the gas
10 on Duke's system. Approving this allocation is tantamount to approving a cost
11 subsidy in the amount of approximately \$1.7 million flowing from residential
12 customers to other customer classes, as I explain below.

13

14 ***Q46. HOW DOES DUKE ALLOCATE ITS OTHER PRODUCTION PLANT TO***
15 ***CUSTOMER CLASSES?***

16 ***A46.*** Duke uses allocator K205 to allocate production plant to the customer classes, as
17 shown on Schedule E-3.2b, page 2, line 2. This allocator is developed on
18 Schedule E-3.2b, page 15, lines 6-7. The production plant allocator is based on
19 the average and excess method, excluding interruptible transportation. This
20 methodology recognizes that production plant serves two needs: producing gas
21 and helping to meet peak system demands. Interruptible transportation customers
22 are excluded from this calculation because they do not contribute to system peaks

1 and (according to Duke) production plant would not be needed to serve their
2 loads.

3
4 **Q47. WHAT DO YOU RECOMMEND?**

5 **A47.** In the event that any MGP costs that are determined by the PUCO to be
6 reasonable and lawful for collection from customers, the MGP costs should be
7 functionalized as being solely production-related; classified as being solely
8 commodity-related; and allocated to customer classes using allocator K205
9 (average and excess excluding interruptible transportation). Under Duke's
10 claimed level of MGP costs (\$21,777,806), this would result in the following
11 customer class responsibilities: \$14,016,632 (64.4%) of MGP costs to the
12 residential class, \$1,637,473 (7.5%) to the small general service class, \$6,123,701
13 (28.1%) to the large general service class, and none to the interruptible
14 transportation class. I show the underlying calculations on Attachment SJR-8.
15 On that attachment I also show that the proper treatment of these costs would
16 reduce the Residential class's responsibility for these costs by \$1,682,281
17 compared to Duke's improper functionalization, classification, and allocation.

V. RESIDENTIAL RATE DESIGN (OCC OBJECTIONS 23 AND 24)

***Q48. HOW DOES DUKE PROPOSE TO RECOVER ANY INCREASE IN ITS
REVENUE REQUIREMENT FROM RESIDENTIAL CUSTOMERS?***

A48. Under the Utility's proposed revenue requirement, Duke proposes to increase the base rate residential customer charge from \$25.33 per month to \$33.03 per month. Offsetting this increase would be the resetting to zero of two riders that are charged on a per-customer basis, Rider AMRP and Rider AU. The costs associated with these riders would be rolled into base rates through increases in the customer charge. Combined these two riders increase the effective customer charge under present rates by \$7.70 per month, to a total of \$33.03. Duke Schedule E-4.1, page 2, lines 10-11, column J. Because the entire amount of the proposed increase comes from the two riders, in effect, Duke's proposed residential customer charge remains the same as it is under present rates.

In other words, Duke is proposing to recover the entire increase in its residential revenue requirement through its consumption charges. Those charges would roughly quadruple: the first 400 Ccf per month would increase from 3.2728¢ per ccf to 13.04768¢ per Ccf; and all usage in excess of 400 Ccf per month would increase from 9.7278¢ per Ccf to 38.90974¢ per Ccf. Those consumption charge increases would recover approximately \$20.6 million more from Duke's residential customers than they pay under present rates. Duke Schedule E-4.1, page 2, line 6, column M.

1 ***Q49. WHAT DOES THE STAFF RECOMMEND?***

2 ***A49.*** The Staff recommends approval of the Utility's proposed residential rate design.⁸

3

4 ***Q50. DO YOU DISAGREE WITH THE STAFF'S RECOMMENDED***

5 ***ADOPTION OF THE UTILITY'S PROPOSED RATE DESIGN?***

6 ***A50.*** I do not disagree with the bulk of the Staff's recommendation to adopt Duke's
7 proposed rate design.⁹ I disagree, however, with some of the statements made by
8 the Staff in support of that outcome. In particular, I disagree with the Staff's
9 unsupported assumptions and assertions about low-use, or non-heating, residential
10 customers. As summarized in OCC Objections 23 and 24, I also disagree with the
11 Staff's failure to recognize the important distinctions between heating and non-
12 heating customers in designing residential rates.

13

14 ***Q51. WHAT DOES THE STAFF REPORT SAY ABOUT LOW-USE, OR NON-***
15 ***HEATING, GAS CUSTOMERS?***

16 ***A51.*** The Staff Report makes several statements about non-heating customers and the
17 effect of SFV rates on those customers. Specifically, the Report states:

18 The distribution facilities required to serve a small
19 residence are most likely the same as those required to
20 serve a large residence. The distribution facilities required

⁸ Staff Report at 26-29.

⁹ This does not constitute an endorsement by me or OCC of the theory behind Duke's SFV rate design. Rather, for purposes of this case, OCC and I are not objecting to implementing any rate increase to the Residential class solely through increases in distribution (per Ccf) charges.

1 to serve a minimum number of gas appliances in a
2 residential unit are most likely the same as those required to
3 serve a residence with multiple gas appliances. (Staff
4 Report at 26.)

5 * * *

6 The biggest negative impact [from SFV rates] being that
7 the change from a primarily volume-based rate to a
8 primarily fixed charge rate often results in large price
9 increases to low use customers. (Staff Report at 27.)

10 * * *

11 It is apparent that there are a significant number of
12 residential and general service accounts that use such small
13 volumes of gas that it is likely that the usage is for
14 something other than space or water heating. Staff is very
15 mindful of these customers, but from a cost causation
16 viewpoint, these customers are no different than any other
17 customers. Staff recommends that the Applicant work with
18 these customers to notify them that, in the future, they may
19 see significant increases simply by taking limited service.
20 (Staff Report at 28.)

1 ***Q52. IS THE STAFF CORRECT THAT ADOPTING SFV RATES CAN***
2 ***CREATE A SIGNIFICANT NEGATIVE IMPACT ON LOW-USE***
3 ***CUSTOMERS?***

4 ***A52.*** Yes. Customers who use relatively small amounts of gas see dramatic rate
5 increases as a result of moving cost recovery from volume-based rates to fixed-
6 charge rates.

7

8 ***Q53. IS THE STAFF CORRECT THAT MOST LOW-USE CUSTOMERS HAVE***
9 ***MADE A CONSCIOUS DECISION NOT TO USE NATURAL GAS FOR***
10 ***SPACE HEATING AND WATER HEATING?***

11 ***A53.*** No, the Staff is not necessarily correct in this assumption. In my experience,
12 some (and in some cities many) non-heating gas customers live in multi-unit
13 buildings where heating (and often water heating) is provided centrally for all
14 residents and is included in the rent or maintenance fee. Individual gas usage
15 within a unit, such as for cooking or a fireplace, may be billed directly to the
16 tenant. Residents of such buildings, therefore, do not have the option to
17 significantly increase their use of natural gas; and they certainly do not have the
18 ability to use gas for space or water heating. Furthermore, to the extent their
19 landlord uses gas for space and/or water heating, over time, tenants will likely
20 seek increases in their rents which correspond with increases in the landlord's
21 charges to obtain these services from the Utility.

22

**Q54. WHAT HAPPENS TO SUCH CUSTOMERS WHEN THE GAS UTILITY'S
FIXED CHARGE BECOMES VERY HIGH?**

A54. A high fixed charge sends a financial message that encourages these types of low-volume users to stop using natural gas. Duke has experienced this in recent years. Duke's customer data show that the number of non-heating customers has declined consistently each year since 2008. Attached as Attachment SJR-9 is Duke's response to OCC Interrogatory No. 06-293 showing that the number of non-heating customers has declined from almost 20,000 in 2008 to about 17,000 in 2012: a loss of more than one out of every eight non-heating customers in just four years.

**Q55. DOES THE UTILITY'S SERVICE AREA HAVE VERY MANY HOUSING
UNITS IN MULTI-UNIT BUILDINGS?**

A55. Yes. I reviewed data for the city of Cincinnati from the U.S. Census Bureau's American Community Survey. Those data¹⁰ show that out of approximately 168,000 housing units in Cincinnati, approximately 79,000 (47%) were in buildings that had 3 or more housing units. More than 40,000 of those were in buildings with 10 or more units.

Not surprisingly, most homes in multi-unit buildings are occupied by renters. Of the 79,000 housing units in multi-unit buildings, approximately 53,600 were

¹⁰ See Attachment SJR-10.

1 rented, about 3,400 were owner-occupied, and the remaining 22,000 were
2 vacant.¹¹

3
4 Further, most renter-occupied housing units pay for at least some utilities.
5 Approximately 66,800 of the 77,200 renter-occupied units paid extra for at least
6 one utility service.¹² Finally, the majority of renter-occupied housing units heat
7 with natural gas. Of the 77,200 renter-occupied homes, 43,000 (56%) have
8 natural gas for space heating.¹³

9
10 ***Q56. WHAT DOES THIS DATA TELL YOU ABOUT THE***
11 ***REASONABLENESS OF STAFF'S ASSUMPTIONS ABOUT LOW-USE***
12 ***GAS CUSTOMERS?***

13 ***A56.*** The census data indicate that it is likely that Duke has thousands of gas customers
14 in multi-unit buildings, and that many of those customers do not pay directly for
15 heating. If natural gas already serves the building for centralized space or water
16 heating, then the incremental cost to serve an individual unit with gas for cooking
17 or other uses would be very small. This would undercut the Staff's assertion that
18 the basic infrastructure cost to serve a non-heating customer is the same as the
19 cost to serve a residential heating customer. In fact, it is highly likely that the cost

¹¹ See Attachment SJR-10.

¹² See Attachment SJR-10.

¹³ See Attachment SJR-10.

1 to serve a non-heating customer in a multi-unit building is much lower than the
2 cost to serve a heating customer in a single-family building.

3

4 ***Q57. ARE YOU FAMILIAR WITH ANY UTILITIES THAT HAVE***

5 ***COLLECTED REAL DATA ABOUT THESE COST DIFFERENCES?***

6 ***A57.*** Yes. For several years, I have been involved in cases for the Peoples Gas Light
7 and Coke Company which serves the city of Chicago, and its sister company,
8 North Shore Gas Company, that serve much of the surrounding area. As a result
9 of concerns raised about the impact of moving toward SFV pricing for those
10 utilities, the Illinois Commerce Commission required each of those utilities to
11 perform a cost-of-service study that separated the residential class into heating
12 and non-heating customers. The results of those cost of service studies were filed
13 in a rate case in 2012 (the case is still pending before the Illinois Commission).¹⁴

14

15 Those studies found that the cost to serve non-heating customers was significantly
16 lower than the cost to serve heating customers. In fact, the costs were so much
17 lower for non-heating customers that the utilities proposed reducing rates for non-
18 heating customers by nearly one-third compared to the SFV-type of rate that had
19 been adopted prior to separating the customer classes. Indeed, the Illinois
20 utilities' COSS witness recently filed rebuttal testimony in those cases that
21 concluded that under **present** (SFV-type) rates non-heating customers provided

¹⁴ North Shore Gas Company and the Peoples Gas Light and Coke Company, Ill. Commerce Commission Docket Nos. 12-0511 and 12-0512 (consolidated).

1 the utilities with rates of return of 82.77% (North Shore) and 63.69% (Peoples
2 Gas).¹⁵ Those returns compare to the overall system return of about 4% under
3 present rates, according to the utilities' analysis.

4

5 The result for Peoples Gas, which has thousands of non-heating customers, is that
6 it was collecting about \$32 million per year from non-heating customers, but the
7 cost to serve those customers was only about \$22 million.¹⁶

8

9 ***Q58. WHY IS THE COST TO SERVE NON-HEATING CUSTOMERS SO***
10 ***MUCH LESS THAN THE COST TO SERVE HEATING CUSTOMERS?***

11 ***A58.*** Non-heating customers have a very small contribution to utility peak demands. In
12 addition, when non-heating customers are located in multi-unit buildings, there
13 may be very low embedded costs to serve such customers (for example, 50
14 customers might be served from a single service line and regulator).

15

¹⁵ North Shore Gas Company and the Peoples Gas Light and Coke Company, Ill. Commerce Commission Docket Nos. 12-0511 and 12-0512 (consolidated), NS-PGL Ex. 33.0, Rebuttal Testimony of Joylyn C. Hoffman Malueg at. 11 and 13.

¹⁶ Id. at Ex. 33.9.

1 ***Q59. DO YOU KNOW HOW DUKE'S COST TO SERVE NON-HEATING***

2 ***CUSTOMERS COMPARES TO ITS COST TO SERVE HEATING***

3 ***CUSTOMERS?***

4 ***A59.*** I do not know for certain, but I have been able to estimate the difference in
5 Duke's cost to serve Residential heating and non-heating customers. In
6 discovery, Duke was asked to provide information that could be used to determine
7 the cost to serve non-heating customers. Attachment SJR-11 contains Duke's
8 responses to OCC Interrogatories No. 09-391 and 09-392 that requested
9 information for non-heating and heating customers. However, Duke was unable
10 to provide much of the information OCC requested. Duke was only able to
11 provide information about the consumption and peak demand requirements of
12 residential non-heating and heating customers.

13
14 I was able to use the limited information Duke provided to determine that it is
15 highly likely that it costs substantially less to serve non-heating customers than
16 heating customers in Duke's service area. Using only the data on consumption
17 and demand that Duke provided, I estimate that under Duke's proposed revenue
18 requirement, residential heating customers are providing about 62% of the cost of
19 service while non-heating customers are providing more than 80% of the cost of
20 service. That is, the average non-heating customer is providing a return to Duke
21 that is about one-third higher than the return provided by an average heating
22 customer. My analysis is attached as Attachment SJR-12.

Further, I would emphasize that these results are exceedingly conservative. They do not consider what are likely to be other substantial differences in the cost of service, including costs for meters, regulators, mains, and other facilities.

Q60. WHAT DO YOU CONCLUDE?

A60. I conclude it is highly likely that Duke's average cost to serve a non-heating customer is substantially lower than its average cost to serve a heating customer.

Q61. FROM THAT CONCLUSION, WHAT DO YOU RECOMMEND?

A61. I recommend that the Commission require Duke to separate its residential class into a heating class and a non-heating class at the conclusion of this case. I also recommend that Duke be required to perform a COSS reflecting those two classes in its next rate case.

For purposes of setting rates in this case, I recommend that the non-heating customer charge should remain equal to the existing base customer charge of \$25.33 per month. That is, for non-heating customers the base charge should not be increased by rolling in the AMRP and AU charges. The customer charge for heating customers should be modified as Duke recommends by rolling in the AMRP and AU charges. For purposes of this case, I recommend that Duke use the same consumption blocks and charges for both heating and non-heating customers. Those consumption charges would need to increase somewhat compared to Duke's proposal to recover the revenue that would not be recovered

1 from non-heating customers. I show that calculation, under Duke's proposed
2 revenue requirement, on Attachment SJR-13.

3
4 I would emphasize that this is simply an interim measure. I believe it is likely
5 that after a full COSS is performed it would be found that the existing customer
6 charge recovers more than the cost of service from non-heating customers. But
7 without the required data, I cannot perform such an analysis at this time. My
8 recommendation, therefore, is an interim measure to at least stop the customer
9 charge for non-heating customers from increasing even more than it has in recent
10 years.

11
12 **VI. CONCLUSION**

13
14 ***Q62. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?***

15 ***A62.*** Yes. However, I reserve the right to incorporate new information that may
16 subsequently become available through outstanding discovery or otherwise. I
17 also reserve the right to supplement my testimony in the event that PUCO Staff
18 fails to support the recommendations made in the Staff Report and/or changes any
19 of its positions made in the Staff Report.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the *Direct Testimony of Scott J. Rubin on Behalf of the Office of the Ohio Consumers' Counsel* was served on the persons stated below via electronic service this 25th day of February 2013.

/s/ Larry S. Sauer

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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.
20. "Serving the Customer," participant in panel discussion at the Annual Conference of the National Association of Water Companies, Williamsburg, VA. 1993.
21. "A Simple, Inexpensive, Quantitative Method to Assess the Viability of Small Water Systems," a speech to the Water Supply Symposium, New York Section of the American Water Works Association, Syracuse, NY. 1993.
22. * S.J. Rubin, "Are Water Rates Becoming Unaffordable?," *Journal American Water Works Association*, Vol. 86, No. 2 (February 1994), pages 79-86.
23. "Why Water Rates Will Double (If We're Lucky): Federal Drinking Water Policy and Its Effect on New England," a briefing for the New England Conference of Public Utilities Commissioners, Andover, MA. 1994.
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.
26. "Small System Viability: Assessment Methods and Implementation Issues," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, New York, NY. 1994.
27. S.J. Rubin, "How much should we spend to save a life?," *Seattle Journal of Commerce*, August 18, 1994 (Protecting the Environment Supplement), pages B-4 to B-5.

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

42. * E.T. Castillo, S.J. Rubin, S.K. Keefe, and R.S. Raucher, "Restructuring Small Systems," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 65-74.
43. * J.E. Cromwell III, S.J. Rubin, F.C. Marrocco, and M.E. Leevan, "Business Planning for Small System Capacity Development," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 47-57.
44. "Capacity Development – More than Viability Under a New Name," speaker at National Association of Regulatory Utility Commissioners Winter Meetings, Washington, DC. 1997.
45. * E. Castillo, S.K. Keefe, R.S. Raucher, and S.J. Rubin, *Small System Restructuring to Facilitate SDWA Compliance: An Analysis of Potential Feasibility* (AWWA Research Foundation, 1997).
46. H. Himmelberger, *et al.*, *Capacity Development Strategy Report for the Texas Natural Resource Conservation Commission* (Aug. 1997).
47. Briefing on Issues Affecting the Water Utility Industry, Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.
48. "Capacity Development in the Water Industry," speaker at the Annual Meeting of the National Association of Regulatory Utility Commissioners, Boston, MA. 1997.
49. "The Ticking Bomb: Competitive Electric Metering, Billing, and Collection," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.
50. Scott J. Rubin, "A Nationwide Look at the Affordability of Water Service," *Proceedings of the 1998 Annual Conference of the American Water Works Association*, Water Research, Vol. C, No. 3, pages 113-129 (American Water Works Association, 1998).
51. Scott J. Rubin, "30 Technology Tips in 30 Minutes," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 101-110 (Pa. Bar Institute, 1998).
52. Scott J. Rubin, "Effects of Electric and Gas Deregulation on the Water Industry," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 139-146 (Pa. Bar Institute, 1998).
53. Scott J. Rubin, *The Challenges and Changing Mission of Utility Consumer Advocates* (American Association of Retired Persons, 1999).
54. "Consumer Advocacy for the Future," speaker at the Age of Awareness Conference, Changes and Choices: Utilities in the New Millennium, Carlisle, PA. 1999.
55. Keynote Address, \$1 Energy Fund, Inc., Annual Membership Meeting, Monroeville, PA. 1999.
56. Scott J. Rubin, "Assessing the Effect of the Proposed Radon Rule on the Affordability of Water Service," prepared for the American Water Works Association. 1999.
57. Scott J. Rubin and Janice A. Beecher, The Impacts of Electric Restructuring on the Water and Wastewater Industry, *Proceedings of the Small Drinking Water and Wastewater Systems International Symposium and Technology Expo* (Phoenix, AZ 2000), pp. 66-75.

58. American Water Works Association, *Principles of Water Rates, Fees, and Charges, Manual M1 – Fifth Edition* (AWWA 2000), Member, Editorial Committee.
59. Janice A. Beecher and Scott J. Rubin, presentation on “Special Topics in Rate Design: Affordability” at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
60. Scott J. Rubin, “The Future of Drinking Water Regulation,” a speech at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
61. Janice A. Beecher and Scott J. Rubin, “Deregulation Impacts and Opportunities,” a presentation at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.
62. Scott J. Rubin, “Estimating the Effect of Different Arsenic Maximum Contaminant Levels on the Affordability of Water Service,” prepared for the American Water Works Association. 2000.
63. * Janice A. Beecher and Scott J. Rubin, *Deregulation! Impacts on the Water Industry*, American Water Works Association Research Foundation, Denver, CO. 2000.
64. Scott J. Rubin, Methods for Assessing, Evaluating, and Assisting Small Water Systems, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
65. Scott J. Rubin, Consumer Issues in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
66. “Be Utility Wise in a Restructured Utility Industry,” Keynote Address at Be UtilityWise Conference, Pittsburgh, PA. 2000.
67. Scott J. Rubin, Jason D. Sharp, and Todd S. Stewart, “The Wired Administrative Lawyer,” *5th Annual Administrative Law Symposium*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.
68. Scott J. Rubin, “Current Developments in the Water Industry,” *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.
69. Scott J. Rubin, “Viewpoint: Change Sickening Attitudes,” *Engineering News-Record*, Dec. 18, 2000.
70. Janice A. Beecher and Scott J. Rubin, “Ten Practices of Highly Effective Water Utilities,” *Opflow*, April 2001, pp. 1, 6-7, 16; reprinted in *Water and Wastes Digest*, December 2004, pp. 22-25.
71. Scott J. Rubin, “Pennsylvania Utilities: How Are Consumers, Workers, and Corporations Faring in the Deregulated Electricity, Gas, and Telephone Industries?” Keystone Research Center. 2001.
72. Scott J. Rubin, “Guest Perspective: A First Look at the Impact of Electric Deregulation on Pennsylvania,” *LEAP Letter*, May-June 2001, pp. 2-3.
73. Scott J. Rubin, Consumer Protection in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.
74. Scott J. Rubin, Impacts of Deregulation on the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.

75. Scott J. Rubin, "Economic Characteristics of Small Systems," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 7-22.
76. Scott J. Rubin, "Affordability of Water Service," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 23-42.
77. Scott J. Rubin, "Criteria to Assess the Affordability of Water Service," White Paper, National Rural Water Association, 2001.
78. Scott J. Rubin, Providing Affordable Water Service to Low-Income Families, presentation to Portland Water Bureau, Portland, OR. 2001.
79. Scott J. Rubin, Issues Relating to the Affordability and Sustainability of Rates for Water Service, presentation to the Water Utility Council of the American Water Works Association, New Orleans, LA. 2002.
80. Scott J. Rubin, The Utility Industries Compared – Water, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
81. Scott J. Rubin, Legal Perspective on Water Regulation, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
82. Scott J. Rubin, Regulatory Options for Water Utilities, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.
83. Scott J. Rubin, Overview of Small Water System Consolidation, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.
84. Scott J. Rubin, Defining Affordability and Low-Income Household Tradeoffs, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.
85. Scott J. Rubin, "Thinking Outside the Hearing Room," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2002.
86. Scott J. Rubin, "Update of Affordability Database," White Paper, National Rural Water Association. 2003.
87. Scott J. Rubin, *Understanding Telephone Penetration in Pennsylvania*, Council on Utility Choice, Harrisburg, PA. 2003.
88. Scott J. Rubin, *The Cost of Water and Wastewater Service in the United States*, National Rural Water Association, 2003.
89. Scott J. Rubin, What Price Safer Water? Presentation at Annual Conference of National Association of Regulatory Utility Commissioners, Atlanta, GA. 2003.
90. George M. Aman, III, Jeffrey P. Garton, Eric Petersen, and Scott J. Rubin, Challenges and Opportunities for Improving Water Supply Institutional Arrangements, *Water Law Conference*, Pennsylvania Bar Institute, Mechanicsburg, PA. 2004.

91. Scott J. Rubin, Serving Low-Income Water Customers. Presentation at American Water Works Association Annual Conference, Orlando, FL. 2004.
92. Scott J. Rubin, Thinking Outside the Bill: Serving Low-Income Water Customers. Presentation at National League of Cities Annual Congress of Cities, Indianapolis, IN. 2004.
93. Scott J. Rubin, Buying and Selling a Water System – Ratemaking Implications, *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2005.
94. *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*, American Water Works Association. 2005.
95. * Scott J. Rubin, "Census Data Shed Light on US Water and Wastewater Costs," *Journal American Water Works Association*, Vol. 97, No. 4 (April 2005), pages 99-110, reprinted in Maxwell, *The Business of Water: A Concise Overview of Challenges and Opportunities in the Water Market.*, American Water Works Association, Denver, CO. 2008.
96. Scott J. Rubin, Review of U.S. Environmental Protection Agency Notice Concerning Revision of National-Level Affordability Methodology, National Rural Water Association. 2006.
97. * Robert S. Raucher, et al., *Regional Solutions to Water Supply Provision*, American Water Works Association Research Foundation, Denver, CO. 2007.
98. Scott J. Rubin, Robert Raucher, and Megan Harrod, The Relationship Between Household Financial Distress and Health: Implications for Drinking Water Regulation, National Rural Water Association. 2007.
99. * John Cromwell and Scott Rubin, *Estimating Benefits of Regional Solutions for Water and Wastewater Service*, American Water Works Association Research Foundation, Denver, CO. 2008.
100. Scott J. Rubin, "Current State of the Water Industry and Stimulus Bill Overview," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 2009.
101. Scott J. Rubin, Best Practice in Customer Payment Assistance Programs, webcast presentation sponsored by Water Research Foundation. 2009.
102. * Scott J. Rubin, How Should We Regulate Small Water Utilities?, National Regulatory Research Institute. 2009.
103. * John Cromwell III, et al., *Best Practices in Customer Payment Assistance Programs*, Water Research Foundation, Denver, CO. 2010.
104. * Scott J. Rubin, What Does Water Really Cost? Rate Design Principles for an Era of Supply Shortages, Infrastructure Upgrades, and Enhanced Water Conservation, , National Regulatory Research Institute. 2010.
105. Scott J. Rubin and Christopher P.N. Woodcock, Teleseminar: Water Rate Design, National Regulatory Research Institute. 2010.
106. David Monie and Scott J. Rubin, Cost of Service Studies and Water Rate Design: A Debate on the Utility and Regulatory Perspectives, Meeting of New England Chapter of National Association of Water

Companies, Newport, RI. 2010.

107. * Scott J. Rubin, A Call for Water Utility Reliability Standards: Regulating Water Utilities' Infrastructure Programs to Achieve a Balance of Safety, Risk, and Cost, National Regulatory Research Institute. 2010.
108. * Raucher, Robert S.; Rubin, Scott J.; Crawford-Brown, Douglas; and Lawson, Megan M. "Benefit-Cost Analysis for Drinking Water Standards: Efficiency, Equity, and Affordability Considerations in Small Communities," *Journal of Benefit-Cost Analysis*: Vol. 2: Issue 1, Article 4. 2011.
109. Scott J. Rubin, A Call for Reliability Standards, *Journal American Water Works Association*, Vol. 103, No. 1 (Jan. 2011), pp. 22-24.
110. Scott J. Rubin, Current Topics in Water: Rate Design and Reliability. Presentation to the Water Committee of the National Association of Regulatory Utility Commissioners, Washington, DC. 2011.
111. Scott J. Rubin, Water Reliability and Resilience Standards, *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 2011.
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.
113. Scott J. Rubin, Evaluating Community Affordability in Storm Water Control Plans, *Flowing into the Future: Evolving Water Issues* (Pennsylvania Bar Institute). 2011.
114. Invited Participant, Summit on Declining Water Demand and Revenues, sponsored by The Alliance for Water Efficiency, Racine, WI. 2012.
115. *Scott J. Rubin, Structural Changes in the Water Utility Industry During the 2000s, *Journal American Water Works Association*, accepted for publication (expected in March 2013).
116. *Scott J. Rubin, Evaluating Violations of Drinking Water Regulations, *Journal American Water Works Association*, accepted for publication (expected in March 2013).

Testimony as an Expert Witness

1. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00922404. 1992. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate.
2. *Pa. Public Utility Commission v. Shenango Valley Water Co.*, Pa. Public Utility Commission, Docket R-00922420. 1992. Concerning cost allocation, on behalf of the Pa. Office of Consumer Advocate
3. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00922482. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate
4. *Pa. Public Utility Commission v. Colony Water Co.*, Pa. Public Utility Commission, Docket R-00922375. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate

5. *Pa. Public Utility Commission v. Dauphin Consolidated Water Supply Co. and General Waterworks of Pennsylvania, Inc.*, Pa. Public Utility Commission, Docket R-00932604. 1993. Concerning rate design and cost of service, on behalf of the Pa. Office of Consumer Advocate
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
7. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00932667. 1993. Concerning rate design and affordability of service, on behalf of the Pa. Office of Consumer Advocate
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.
18. *In the Matter of the Application of Citizens Utilities Company for a Hearing to Determine the Fair Value of its Properties for Ratemaking Purposes, to Fix a Just and Reasonable Rate of Return Thereon, and to Approve Rate Schedules Designed to Provide such Rate of Return*, Arizona Corporation Commission, Docket Nos. E-1032-95-417, *et al.* 1996. Concerning rate design, cost of service, and the price elasticity of water demand, on behalf of the Arizona Residential Utility Consumer Office.
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.
20. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-106-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
21. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-107-EL-EFC and 96-108-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
22. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-101-EL-EFC and 96-102-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
23. *An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company (Phase II)*, Kentucky Public Service Commission, Docket No. 93-434. 1997. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Public Service Litigation Branch.
24. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-103-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
25. *Bangor Hydro-Electric Company Petition for Temporary Rate Increase*, Maine Public Utilities Commission, Docket No. 97-201. 1997. Concerning the reasonableness of granting an electric utility's request for emergency rate relief, and related issues, on behalf of the Maine Public Advocate.
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.
38. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Dayton Power and Light Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 98-105-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
39. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 99-106-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
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.
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 Code 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.

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-322

REQUEST:

Concerning the tariff provision relating to Right-of-Way (Schedule E-2.1, pages 9-10), why has the Company proposed to replace the phrase: "or customers beyond the customer's property when such rights are limited to installations along dedicated streets and roads" with the phrase: "or across customer's property necessary or incidental to the supplying of service to other customers who are adjacent to or extend beyond the customer's property"?

RESPONSE:

The language with respect to the Right-of-Way (Schedule E-2.1, pages 9-10) is intended to clarify the current language, which as written, has resulted in various interpretations from customers. The Company believes that this language will be beneficial for the customer and Company, without adversely impacting the intent of the current language. The purpose of the change is to afford the Company the opportunity to access right-of-way across a customer's property where it is expedient and cost effective to do so, as opposed to being limited to along dedicated streets and roads. The best route to serve customers in a common area may not always be along dedicated street and road. This applies to gas lines and services that are needed to serve the area. The best and least cost route could be across a side yard, through the back of the property, etc. The purpose is to obtain reasonable and economic means to serve other neighboring properties and the community. Additionally, there are times when the Company's facilities may incidentally cross one customer's property in order to serve another. Such is the case where streets are widened or municipal right of ways are changed or power lines running from pole to pole may physically cross a person's property outside the road right of way due to curvature of the road itself. Often times, a municipal right of way may be determined from the center of the street, but, along curved roads it may be impractical or unsafe to locate a facility solely in the road right of way and it may be necessary to incidentally cross a private property.

PERSON RESPONSIBLE:

Rich Harrell/Legal

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-323

REQUEST:

Concerning the tariff provision relating to Right-of-Way (Schedule E-2.1, pages 9-10), the Company has proposed to replace the phrase: "or customers beyond the customer's property when such rights are limited to installations along dedicated streets and roads" with the phrase: "or across customer's property necessary or incidental to the supplying of service to other customers who are adjacent to or extend beyond the customer's property". Is it the Company intent to provide itself an easement or right-of-way across property that is not "limited to installations along dedicated streets and road" in order to serve another customer?

RESPONSE: Yes, where there is a miniscule, di minimus, or negligible impact on the property of a customer. In many cases the extension of a service to a neighboring home or business can be done from existing services or mains, but requires crossing a neighboring property with incidental impact. In most cases clearances to install facilities exist because of normal property line setbacks and community ordinances that limit property owners building placement. For example, the crossing of the corner of a yard to a service point on a neighboring home or business can be done without restricting the normal use of the property owner. The Company has encountered several instances where it became necessary, in order to serve one customer, to locate facilities in such a manner as to encroach upon a miniscule, di minimus, or negligible amount of another customer's property. And, in some instances, the property owner has refused access. In such an instance, the only option the Company has is to exercise its rights to eminent domain, which is neither timely nor beneficial to the Company or its customers on several fronts. In the interest of efficiency and public policy, it is reasonable, as a condition of service, for the Company, in order to provide service to all customers, to be able to incidentally encroach upon individual property so to serve another.

PERSON RESPONSIBLE: Legal

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-324

REQUEST:

If the Company response to OCC Interrogatory No. 323 is affirmative, why does the Company believe this change is required for the Company to serve the public?

RESPONSE:

See response to OCC-INT-09-323.

PERSON RESPONSIBLE: Legal

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-325

REQUEST:

Concerning the tariff provision relating to Right-of-Way (Schedule E-2.1, pages 9-10), the Company has proposed to replace the phrase: "or customers beyond the customer's property when such rights are limited to installations along dedicated streets and roads" with the phrase: "or across customer's property necessary or incidental to the supplying of service to other customers who are adjacent to or extend beyond the customer's property". Is it the intent of the Company, by the above-quoted language, to require a customer to give the Company an easement or right-of-way at no cost to the Company and without compensation to the customer whose land is being crossed, even if the easement or right-of-way is being used to serve another customer who is not "along dedicated streets and road"?

RESPONSE: The extension of a service that already exists across a property often is the most efficient way to continue service to adjacent homes and businesses. This efficiency reduces cost to all rate payers. Other benefits include limiting additional facilities that will be needed and that, over the years, will be subject to normal maintenance and weather impacts. For example, in rear lot situations, the best way to serve new homes or businesses adjacent to an existing property owner is by continuing the service and not going back out to the road. These types of blanket right of ways have been used by many utilities across the country to control cost and reduce redundant facilities. The Company is not seeking to require an easement or right-of-way for no compensation in all instances. There have been many instances when a customer takes the position that once it has received service, it has no obligation to assist in any manner the provision of service to other customers. The Company routinely compensates land owners for real property when crossing their property; however, there are times when a disinterested land owner is simply refuses access leaving the Company with no alternative by to initiate condemnation proceedings for an incidentally encroachment. Thus, if customers were obligated, as a condition of receiving their serve to provide a right-of-way, then the threat of condemnation would not be used as frequently as it is, and the customer may be more amenable to a compensated right-of-way. Thus, the compensation is not the issue. This issue is with customers that take the position that they have no obligation to assist, where reasonably possible, with the rights of other customers to receive service as well.

PERSON RESPONSIBLE: Rich Harrell/Legal

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-326

REQUEST:

If the response to OCC Interrogatory No. 325 is affirmative, why does the Company believe this change is required for the Company to serve the public?

RESPONSE: It provides benefits to the public in terms of cost, expediency, and aesthetics.

PERSON RESPONSIBLE: Rich Harrell

- **FENCES:** Vinyl, wood and/or chain link fences are permitted within the right-of-way if:
 1. Duke Energy gives prior written consent;
 2. they follow the property line;
 3. they cross the right-of-way at an angle not less than 90 degrees to the pipeline;
 4. an adequately sized gate is installed in each fence crossing for periodic patrol and maintenance access and;
 5. no fence post is installed closer than 5 feet to the pipeline.
- **ROADS/DRIVEWAYS:** Concrete, asphalt, gravel and/or dirt roads, driveways, and pathways are NOT permitted within the right-of-way without prior written consent of Duke Energy.
- **OTHER IMPROVEMENTS:** Sports courts (basketball, tennis, etc.), concrete patios or other hard-surface improvements are NOT permitted within the right-of-way without prior written consent of Duke Energy.
- **LANDSCAPE:** Do NOT plant trees or high shrubs on the right-of-way.
- **OTHER UTILITIES:** Other utilities may be installed within the right-of-way, with property owners consent, in accordance with applicable federal and state laws and regulations. Duke Energy holds the safe operation and integrity of its facilities with the highest priority. Therefore, prior written consent must be obtained from Duke Energy to construct/install a proposed utility parallel within or crossing perpendicular to a Duke Energy easement, provided the utilities do not interfere with the pipeline.
- **COVER:** A minimum of 3 feet, but not more than 6 feet of cover must be maintained over the pipeline. Any exceptions to this policy or changes to the ground contour on the right-of-way require Duke Energy's prior written consent.
- **STORAGE:** Do NOT build, store or place anything on or near the right-of-way without first contacting the appropriate One Call Agency or Duke Energy.

- **EXCAVATING:** Do NOT dig, tunnel or bore without first contacting the appropriate One Call State Agency.

LANDOWNER OBLIGATION

It is important that each individual landowner consult Duke Energy before using the right-of-way for any purpose. Failure to do so may result in serious hazard or breach of the right-of-way agreement.

If any of these requirements and/or obligations are violated, Duke Energy will pursue available remedies under all applicable local, state and federal laws.

DAMAGE PREVENTION / ONE-CALL REQUIREMENTS

Excavation activities are the leading cause of pipeline accidents. To help prevent serious personal injury and damage to underground facilities, you must call your state's one-call number at least two business days before you do any digging – it's the law. There is no charge for the service, and the call is toll free at **811** or:

Ohio Utilities Protection Service, Inc.
800-362-2764

Kentucky 811
800-752-6007

AVAILABILITY OF LIST OF PIPELINE OPERATORS

For a list of natural gas or propane pipeline operators in your area, visit the National Pipeline Mapping System at www.npms.phmsa.dot.gov.

HOW TO GET ADDITIONAL INFORMATION

For more information on natural gas pipeline safety, or the use, location and size of the right-of-way, please call Duke Energy at **800-544-6900**. Or, visit our website at www.duke-energy.com/safety.

Duke Energy

Natural Gas Pipeline Safety and Right-of-Way Use Guide



Because you live or work near a Duke Energy natural gas pipeline or facility, please read this brochure. It has been prepared to help you identify natural gas pipelines, their rights-of-way and associated facilities and to learn about important natural gas safety information. We encourage you to share this information with others, especially if you have tenants or employees who live or work near a natural gas pipeline.

Pipelines have the best safety record of all major transportation systems. Duke Energy's natural gas transmission pipelines and facilities are designed, installed, operated and maintained according to the government's safety requirements. Duke Energy employees work hard to keep natural gas transmission pipelines safe and reliable. They are routinely monitored and inspected for leakage, corrosion, right-of-way encroachment and safe operating pressure.

This guide provides information about Duke Energy natural gas pipeline rights-of-way and the types and conditions of uses permitted on them to help enhance public safety. This guide also provides helpful information to landowners with existing rights-of-way on their property, as well as realtors, planners, engineers, land surveyors, government agencies and others involved in land development.

IDENTIFYING NATURAL GAS PIPELINES

High pressure natural gas pipelines are designated by above-ground markers to provide an indication of presence, commodity (i.e. natural gas, etc.), approximate location and important contact information. Natural gas pipelines are typically located in rights-of-way that are clear of trees, buildings or other structures except for pipeline markers.

- Pipelines may not follow a straight line between adjacent markers.

- Markers are generally yellow and white in color with black lettering.
- Markers are placed near pipelines, but not necessarily directly on top of them
- Markers cannot be relied on to provide information on the depth or number of pipelines in the area

If you find that a marker has been damaged or is missing, please call Duke Energy at 800-634-4300.

NATURAL GAS FACT

Natural gas is lighter than air, therefore, if natural gas escapes from a pipeline, it will rise into the atmosphere and dissipate.

SIGNS OF A NATURAL GAS LEAK

- A distinctive sulfur-like odor. This odor is added to natural gas so you can detect even small amounts of gas escaping
- Blowing or hissing sound
- Dust blowing from a hole in the ground
- Continuous bubbling in wet or flooded areas
- Dead or discolored vegetation in an otherwise green area
- Flames, if a leak has ignited
- Dry spot in moist earth

WHAT TO DO IF YOU SUSPECT A NATURAL GAS LEAK

Personal safety should be your first concern:

- Alert others and leave the area immediately – heading upwind
- Abandon any equipment being used in the area
- Eliminate potential sources of ignition. Sparks from motor vehicles, electrical switches, phones, open flames, lit cigarettes, pagers, and two-way radios can be dangerous

In the unlikely event of a natural gas pipeline emergency or if you observe any unusual or suspicious activity near

natural gas pipeline facilities:

From a safe location, call Duke Energy toll free at 800-634-4300 and 9-1-1.

IF YOU SUSPECT A LEAK, DO NOT:

- DO NOT try to determine the location of the leak
- DO NOT try to stop the leak or operate any pipeline valves
- DO NOT use any mechanical or electrical tools or devices in the area of the leak or suspected leak
- DO NOT use anything in the area of the leak or suspected leak that may create a spark, including a cell phone
- DO NOT attempt to extinguish a natural gas fire

DEFINING RIGHTS-OF-WAY

Pipeline rights-of-way are parcels of land of various widths in which pipelines are installed. Duke Energy acquires rights-of-way to provide service to its customers and to allow pipelines to be permanently located on public and private land. Rights-of-way and easements are generally formalized by a written agreement and recorded against property titles. A change in property ownership does NOT alter these right-of-way agreements.

In order to obtain access to our pipeline and facilities, the right-of-way is usually mowed and cleared of trees, high shrubs and other obstructions on an annual basis.

USE OF RIGHTS-OF-WAY

The following describes the rules regarding the most common activities within right-of-way boundaries:

- **STRUCTURES:** Above-ground structures, such as buildings and storage sheds and brick, concrete or block fences and walls are NOT permitted within the right-of-way without prior written consent of Duke Energy.

Duke Energy Ohio
139 East Fourth Street
Cincinnati, Ohio 45202

Attachment SJR-4
P.U.C.O. Gas No. 18 Page 1 of 2
Sheet No. 30.13
Cancels and Supersedes
Sheet No. 30.12
Page 1 of 2

RATE RS

RESIDENTIAL SERVICE

APPLICABILITY

Applicable to gas service required for residential purposes when supplied at one point of delivery where distribution mains are adjacent to the premises to be served.

NET MONTHLY BILL

The Net Monthly Bill is determined as follows:
All delivered gas is billed in units of 100 cubic feet (CCF).

Customer Charge per month \$6.00

Plus the applicable charge per month as set forth on Sheet
No. 65, Rider AMRP, Accelerated Main Replacement Program

Plus a charge for
All CCF delivered at \$0.18591 per CCF

Plus, all delivered gas shall be subject to an adjustment per CCF as set forth on:

Sheet No. 63, Rider PIPP, Percentage of Income Payment Plan.

Sheet No. 68, Rider STR, State Tax Rider.

Sheet No. 71, Rider GCRR, Gas Cost Recovery Rate.

Sheet No. 76, Rider CCCR, Contract Commitment Cost Recovery Rider.

EXCISE TAX RIDER

The net monthly bill shall be adjusted by application of the percent specified on Sheet No. 64, Rider ETR, Ohio Excise Tax Liability Rider, except that finance charges are excluded in the computation of the net bill.

The monthly minimum bill shall be the monthly Customer Charge and applicable charge under Rider AMRP shown above, plus the percentage specified in Rider ETR, Sheet No. 64, Ohio Excise Tax Liability Rider.

LATE PAYMENT CHARGE

Payment of the total amount due must be received in the Company's office by the due date shown on the bill. When not so paid, an additional amount equal to one and one-half percent (1.5%) of the unpaid balance is due and payable. However, this provision is not applicable to:

- (1) customers actively enrolled on the Percentage of Income Payment Plan (PIPP) pursuant to Rule 4901:1-18-04(B), Ohio Administrative Code;
- (2) the unpaid account balances of those customers being backbilled in accordance with Section 4933.28 Ohio Revised Code; and

Filed pursuant to an Order dated March 29, 2006 in Case No. 06-407-GE-ATA before the Public Utilities Commission of Ohio.

Issued: March 31, 2006

Issued by Sandra P. Meyer, President

Effective: April 3, 2006

Duke Energy Ohio
139 East Fourth Street
Cincinnati, Ohio 45202

Attachment SJR-4
P.U.C.O. Gas No. 18 Page 2 of 2
Sheet No. 30.13
Cancels and Supersedes
Sheet No. 30.12
Page 2 of 2

LATE PAYMENT CHARGE (Contd.)

- (3) the unpaid account balances of those customers on other Commission approved deferred payment plans or the Budget Billing Plan, except that a late payment charge may be assessed on any deferred payment plan or Budget Billing Plan amount not timely paid.

At a residential customer's request, the Company will waive a late payment charge where the current charge is the only late payment charge levied in the most recent twelve month period.

SERVICE REGULATIONS

The supplying of, and billing for, service and all conditions applying thereto, are subject to the jurisdiction of the Public Utilities Commission of Ohio and to Company's Service Regulations currently in effect, as filed with the Public Utilities Commission of Ohio, as provided by law.

Filed pursuant to an Order dated March 29, 2006 in Case No. 06-407-GE-ATA before the Public Utilities Commission of Ohio.

Issued: March 31, 2006

Issued by Sandra P. Meyer, President

Effective: April 3, 2006

Duke Energy Ohio, Inc.
Gas Rate Case
Case No. 12-1685-GA-AIR, et al.

Examples of Net Present Value Calculations

Cost of main extension: \$ 2,000.00
Annual revenues: \$ 336.69

Example 1: Net present value: 10% discount rate for 5 years

Months	Gross Value	Discount Factor	Discounted Value
0	\$ (2,000.00)	1.0000	\$ (2,000.00)
1-12	336.69	0.9487	319.42
13-24	336.69	0.8538	287.47
25-36	336.69	0.7684	258.71
37-48	336.69	0.6916	232.85
48-60	336.69	0.6224	209.56
Total	\$ (316.55)		\$ (691.99)

Example 2: Net present value: 5% discount rate for 10 years

Months	Gross Value	Discount Factor	Discounted Value
0	\$ (2,000.00)	1.0000	\$ (2,000.00)
1-12	336.69	0.9747	328.17
13-24	336.69	0.9259	311.74
25-36	336.69	0.8796	296.15
37-48	336.69	0.8357	281.37
48-60	336.69	0.7939	267.30
61-72	336.69	0.7542	253.93
73-84	336.69	0.7165	241.24
85-96	336.69	0.6807	229.18
97-108	336.69	0.6466	217.70
109-120	336.69	0.6143	206.83
	\$ 1,366.90		\$ 633.61

Note: The discount factors are calculated at the midpoint of year

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Sixth Set of Interrogatories
Date Received: September 28, 2012

OCC-INT-06-289

REQUEST:

Does the Company intend to impose any limitations on the amount or length of the main extension that is provided at no cost to the consumer if the net present value ("NPV") is positive?

RESPONSE:

The Company does not intend to impose a limitation on the length of the main extension provided to a customer at no cost if the NPV is positive. However, the acceptance will be based on budgetary constraints.

PERSON RESPONSIBLE: Gary J. Hebbeler

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Sixth Set of Interrogatories
Date Received: September 28, 2012

OCC-INT-06-290

REQUEST:

Referring to the response to OCC Interrogatory No. 289, if the NPV is negative, will the Company still provide 100 feet of main extension at no additional charge to the customer?

RESPONSE:

The company will provide a minimum of 100 feet of main extension at no charge to the customer regardless of whether the NPV is positive or negative.

PERSON RESPONSIBLE: Gary J. Hebbeler

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Sixth Set of Interrogatories
Date Received: September 28, 2012

OCC-INT-06-292

REQUEST:

Can the Company provide an example of how the NPV calculations will be performed for an individual residential customer requesting a main extension of 250 feet?

RESPONSE:

An NPV calculator is currently in development for main extensions other than joint trench subdivision extensions. The NPV calculator currently used for subdivisions is based on a 5 year staggered build out of the homes. When using the subdivision NPV for a single structure you receive 0 credit for the first year. Due to the staggered build out, you do not get a true representation of an NPV calculation for a main extension to a new structure that will be ready for gas once the main extension is finished. You also do not get a true representation of an NPV calculation for a main extension runs to an existing structure. Therefore, we are currently developing a new calculator for main extensions only. The tool will include a hurdle rate, cost of extension and number of years for payback. If the NPV is positive, the customer will receive a free extension. If the PV is negative, the customer will pay the difference according to the tariff.

PERSON RESPONSIBLE: Gary J. Hebbeler

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-347

REQUEST:

Concerning the Company's proposed changes to Rider X (Schedule E-2.1, pages 124-126):

- a. Please explain why the Company is proposing to change the method by which the deposit amount is determined;
- b. Will the new method of determining the deposit result in higher or lower levels of deposits for typical residential main extension projects;
- c. Why is the NPV analysis performed on the entire cost of the extension and not just the extension in excess of 100 feet;
- d. What discount rate will be used in the NPV analysis;
- e. How will the Company determine the "minimum customer usage commitment" and the "defined period of time" for that commitment for large commercial and industrial customers with process load; and
- f. Are the refund terms and conditions of the main extension contract standard terms or will be they separately negotiated with each applicant?

RESPONSE:

- a. The proposed changes seek to clarify that customers living at different locations, such as in new or existing subdivisions, or on approach mains, will have pertinent cost factors applied in the same manner.
- b. Since the new tool has not yet been developed, it is unknown for certain if the deposit requirement would be higher or lower, or if the answer will be consistently higher or lower in different scenarios. In any event, the outcome will be based on actual cost, revenue and other factors, applied consistently.
- c. The NPV calculator will be used for all main extensions over 100 feet in length. The NPV calculator will be run for the entire length of the main extension. The NPV

calculator will take into account the customers predicted load in order to provide them a comparable length of main. The NPV calculator will be designed as to ensure that one customer will always receive a minimum of 100 feet at no cost.

- d. 8.13%.
- e. The “minimum customer usage commitment” will be determined in consultation with the customer, based a level with which they are comfortable given their usage expectations. The usage level will equate to a bill amount, and we will compute the “defined period of time”, up to six years, as is necessary for the customer bill total to equate to the cost of the extension. The six year provision is approximately 5 months longer than the current provision stating a minimum bill of 1.5% of the cost, which equates to a 66 2/3 months.
- f. They will be standard terms unless it is a large commercial/ industrial customer with process load.

PERSON RESPONSIBLE: Gary J. Hebbeler

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-348

REQUEST:

Referring to the Company response to OCC Interrogatory No. 347(C) and (D) in the NPV analysis, will the revenues to be received from customers be limited to distribution revenues or will it include gas commodity revenues?

RESPONSE:

In the NPV analysis, the revenues will be limited to distribution revenues and will exclude gas commodity revenues.

PERSON RESPONSIBLE: James E. Ziolkowski

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-351

REQUEST:

Referring to the Testimony of Gary Hebbeler at page 28, where he refers to the change in Rider X as proposing “an additional method by which the customer could receive a line extension at no charge.” Is the proposed change in Rider X an additional method to calculate the customer contribution for extensions over 100 feet, or is it a replacement of the existing method for extensions over 100 feet?

RESPONSE:

The proposed change in Rider X is a replacement of the existing method for extensions over 100 feet.

PERSON RESPONSIBLE: Gary J. Hebbeler

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set Production of Documents
Date Received: November 6, 2012

OCC-POD-09-066 SUPPLEMENTAL

REQUEST:

Please provide a sample copy of the main extension contract referred to for Rider X (Schedule E-2.1, page 124), including the types of refund provisions the Company will use for different types of extensions.

RESPONSE:

Please see Supplemental OCC-POD-09-66 Attachment.

PERSON RESPONSIBLE: Gary J. Hebbeler

Select Agreement Type _____

This **GAS MAIN EXTENSION AGREEMENT** ("**Agreement**"), is entered into this _____ day of _____, _____ ("**Effective Date**"), by and between Duke Energy Ohio, Inc. hereinafter called "**COMPANY**" and customer name, located at customer's mailing street address, City of _____, County of Select County, State of Select State, hereinafter called "**CUSTOMER**" (individually as the "**Party**" and collectively, as the "**Parties**".)

WITNESSETH:

WHEREAS, the CUSTOMER desires a gas main extension and, the COMPANY agrees to install a gas main extension in accordance with the terms and conditions below.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt, adequacy and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. In consideration of payment of _____ Dollars and no Cents (\$ _____) to COMPANY by CUSTOMER, and the granting by CUSTOMER or others to COMPANY necessary easements and/or rights-of-way at no cost to COMPANY, the COMPANY agrees to extend its gas main a distance of approximately _____ feet at _____, City of _____, County of Select County, in the [State of Ohio](#) per Drawing # _____. If any portion of the extension is located on property not owned by CUSTOMER, or if this Agreement is assigned, transferred, sold or otherwise conveyed to a third party for whatever reason by CUSTOMER, without the written consent of COMPANY, whereby CUSTOMER fails to comply with its responsibilities and obligations hereunder, including CUSTOMER'S obligation of payment to COMPANY, CUSTOMER shall be solely responsible for any and all costs and expenses associated with COMPANY'S costs as the result of the CUSTOMER'S failure to comply and any and all costs incurred by COMPANY for the enforcement of this Agreement, including but not limited to attorneys' fees, filing fees and court costs, and the procurement of the appropriate easements and rights-of-way from property owners prior to the COMPANY'S commencement of construction. If said easements and rights-of-way are not granted to COMPANY, COMPANY has the right, at its sole discretion, to terminate this Agreement with no further liability to CUSTOMER, nor shall COMPANY'S termination of this Agreement pursuant to this Paragraph 1 be considered a breach of this Agreement in any manner hereof. CUSTOMER shall be responsible for any costs and expenses incurred by COMPANY in the performance of its duties hereunder prior to the termination of the Agreement. If COMPANY facilities are located or installed on CUSTOMER'S property, or property owned by CUSTOMER at the time of the execution of this Agreement and CUSTOMER fails to grant, or cause to be granted or conveyed, an easement for said facilities, CUSTOMER shall defend, indemnify and hold harmless COMPANY for any and all costs associated with CUSTOMER'S failure to grant or convey said easements or applicable rights-of-way to COMPANY pursuant to this Agreement, including but not limited to the costs and expenses incurred by COMPANY for the procurement of the applicable rights-of-way from any third party. CUSTOMER'S sale of the property that is the subject of this Agreement does in no manner relieve CUSTOMER of its obligations herein, including its financial obligations to COMPANY pursuant to this Agreement.
2. CUSTOMER shall pay the full amount specified in Paragraph 1 upon receipt of invoice.
3. This Agreement shall be effective on the Effective Date set forth herein above and terminate ten (10) years from the date following the commencement of construction ("**Term**"). The COMPANY will provide written notice to the CUSTOMER with respect to the commencement of the construction date and such construction date will be used in accordance with this Agreement. The CUSTOMER shall be entitled to a refund as set forth below in this Paragraph 3 ("**Refund**") provided that the following three (3) conditions have been met to COMPANY'S satisfaction: (i) Payment by CUSTOMER has been made to and received by COMPANY; (ii) construction has commenced; and (iii) CUSTOMER

requests any Refund prior to the expiration of the Term. All three conditions shall be satisfied in order for the CUSTOMER to receive a Refund from COMPANY. If any one condition is not satisfied, CUSTOMER shall not receive, and COMPANY shall not be obligated or in breach of this Agreement for withholding, the Refund. The CUSTOMER shall waive any right to Refunds not received by CUSTOMER within the Term, i.e., any Refunds not obtained by CUSTOMER prior to the expiration of the 10-year period shall become the property of COMPANY, with no exceptions. The maximum amount of Refund available to CUSTOMER shall in no manner exceed the Payment made by CUSTOMER in accordance with this Agreement.

4. CUSTOMER agrees to provide COMPANY with an address plat or listing of addresses which covers the above described gas main extension or immediately upon its availability from the governmental agency responsible for assigning house numbers or other pertinent information. CUSTOMER shall bear any costs associated with or incurred by COMPANY resulting from CUSTOMER'S failure to comply herewith.

5. COMPANY shall be excused from entire or part performance hereof to the extent such performance is prevented by force majeure. The term force majeure shall include, but not be limited to, acts of God, acts of public enemy, insurrection, riots, strikes, labor disputes, fires, explosions, floods, breakdowns of or damage to plants, equipment, or facilities, acts or orders of regulatory, civil or military authorities, fuel shortages, or other causes of a similar or dissimilar nature beyond the reasonable control of COMPANY. Such excuses from performance shall continue until such preventive cause is eliminated or ceases to exist. COMPANY shall use reasonable efforts to eliminate such cause as promptly as possible, the CUSTOMER recognizing, however, that the settlement of any strike or other labor dispute shall be solely within the discretion of the COMPANY.

6. The Parties recognize and agree that, subsequent to the execution of this Agreement, [The Public Utilities Commission of Ohio \(PUCO\)](#) or another body lawfully empowered to do so, may impose restrictions on the COMPANY'S ability to supply natural gas to new customers (whether or not a gas main is adjacent to the property for which gas service is requested). The Parties agree to be bound by such restrictions.

7. The Parties also agree to be bound by any future determination by, [The Public Utilities Commission of Ohio \(PUCO\)](#) or another body lawfully empowered to do so, that would have an effect on the method of refunding the Payment as set forth in Paragraph 3 herein above.

8. CUSTOMER shall be liable for all damages or injuries occurring to persons or property that are caused by its negligence, intentional acts or omissions, wanton and willful conduct, or its failure to comply with the terms and conditions of this Agreement. Further, CUSTOMER hereby agrees to indemnify, defend and hold harmless COMPANY during the period of any applicable statute of limitation from and against any and all actions or causes of action, claims, demands, liabilities, losses, damages or expenses of whatever kind or nature, including attorneys' fees, which COMPANY may suffer or incur by reason of bodily injury, including death, to any person or persons, or by reason of damage or destruction of any property, including the loss of use, profits, business or operations thereof, arising out of or is in any way connected with any work, act or omission performed of in accordance with this Agreement or which COMPANY may sustain or incur in conjunction with any litigation, investigation, or other expenditures incident thereto, including any suit instituted to enforce the obligations of this provision of indemnity or any other provision of this Agreement except to the extent the same is due to the negligence of COMPANY.

9. CUSTOMER shall release, exculpate and hold harmless and shall reimburse COMPANY, its agents and employees from and for all claims, losses, damages, costs, and expenses, including attorneys' fees, arising or alleged to arise, in whole or in part, from injury to CUSTOMER, its representatives, employees or subcontractors, including death or damage to their property, including the loss of use thereof, arising or alleged to arise out of or in any way connected with any work or acts performed as a result of this Agreement by CUSTOMER or the agents, employees or subcontractors of CUSTOMER, except to the extent caused by the negligence of COMPANY, its agents or employees.

10. This Agreement: (a) is the entire agreement between the Parties and there are no other oral or written representation, conditions or agreements relating to this Agreement, which are not specifically incorporated herein; (b) may not be waived, with the exception of Paragraphs 6 and 7 herein, amended or extended except by a written amendment executed by both Parties; and (c) is binding upon and inures to the benefit of each of the Parties and their permitted successors and assigns. Neither Party's failure to insist upon the other Party's strict performance of any provision of this Agreement or failure to promptly exercise any right available in connection with this Agreement shall constitute a waiver of any provision or an amendment to this Agreement. This Agreement may be executed in separate counterparts, each of which will be deemed an original, but which together will constitute one and the same instrument. If any clause, provision or section of this Agreement is ruled invalid by any court of competent jurisdiction, the invalidity of such clause, provision, or section shall not affect any of the remaining provisions hereof. Both Parties warrant and represent that the execution and performance of this Agreement will not cause it to violate any laws, ordinances, covenants, or provisions, of any mortgage, lease, or other agreement binding on it, and both Parties shall be responsible respectively for any failure to comply with this provision herewith. Both Parties have had the opportunity to review this Agreement with counsel and therefore neither Party shall be construed as the "drafter" of this Agreement. This Agreement shall not be assigned by CUSTOMER without the written consent of COMPANY. The CUSTOMER shall remain obligated to the terms and conditions of this Agreement in the event of any permitted assignment or transfer of this Agreement by CUSTOMER, unless CUSTOMER obtains the written agreement of any subsequent third party operating pursuant to this Agreement, e.g., assignee, purchaser, lessee, to abide by the terms and conditions of this Agreement. Only upon the tender of said written agreement demonstrating a third party's acceptance of the terms and conditions of this Agreement by said third party shall CUSTOMER be relieved of any obligations and duties hereunder, including the Payment.
11. This Agreement constitutes an offer and shall be void, at the sole option of the COMPANY, if not signed by CUSTOMER and received by COMPANY on or before the (Type the Day day of Select Month, Select year).
12. This Agreement shall be governed by and construed under the laws of the [State of Ohio](#) without reference to the conflict of law principles thereof.
13. The Parties agree that facsimile signatures on this Agreement may be deemed as original signatures and as such this Agreement, with facsimile signatures, may be deemed as an original for purposes of enforcement and construction.
14. The CUSTOMER'S obligations pursuant to Paragraphs 10 & 11 of this Agreement shall survive the termination or expiration hereof.

IN WITNESS WHEREOF, the Parties have caused their duly authorized agents to execute this Agreement which shall be effective as set forth herein.

	Duke Energy Ohio, Inc.
By: Customer Contact Name & Title	By: Select Supervisor:, Supervisor
_____	_____
Customer Signature	Distribution Design
Customer mailing address	
City, State Zip	
Customer Phone Number	

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set Production of Documents
Date Received: November 6, 2012

OCC-POD-09-067

REQUEST:

Please provide a sample NPV calculation for a hypothetical residential subdivision with 20 new customers who are expected to use natural gas for space heating and 3,000 feet of gas main, under the existing Rider X calculation method and the proposed new Rider X calculation method.

RESPONSE: Some assumptions would need to be added to the above scenario for the existing Rider X tool. For example purposes, assuming (a) a new joint trench subdivision, (b) no approach main is needed, (c) no pressure regulating station is needed, (d) and 4" pipe would be used, a customer deposit of \$8,699 is necessary. Since the new NPV tool is not yet developed, a calculation using it cannot be made.

PERSON RESPONSIBLE: Gary J. Hebbeler

Duke Energy Ohio, Inc.
Gas Rate Case
Case No. 12-1685-GA-AIR, et al.

Example of Net Present Value Calculations Using 8.13% Discount Rate

Cost of main extension: \$ 2,000.00
Annual revenues: \$ 336.69

Months	Gross Value	Discount Factor	Discounted Value	Cumulative Discounted Value
0	\$ (2,000.00)	1.0000	\$ (2,000.00)	\$ (2,000.00)
1-12	336.69	0.9585	322.72	(1,677.28)
13-24	336.69	0.8806	296.49	(1,380.79)
25-36	336.69	0.8090	272.38	(1,108.41)
37-48	336.69	0.7432	250.23	(858.18)
48-60	336.69	0.6828	229.89	(628.29)
61-72	336.69	0.6273	211.21	(417.08)
73-84	336.69	0.5763	194.03	(223.05)
85-96	336.69	0.5294	178.24	(44.81)
97-108	336.69	0.4864	163.77	118.96
109-120	336.69	0.4468	150.43	269.39
	<u>\$ 1,366.90</u>		<u>\$ 269.39</u>	

Note: The discount factors are calculated at the midpoint of year

Duke Energy Ohio, Inc.
Gas Rate Case
Case No. 12-1685-GA-AIR, et al.

Allocation of Manufactured Gas Plant (MGP) Costs

Functionalization of MGP Costs

	Duke	OCC	Difference
Production	\$ 118,907	\$ 21,777,806	\$ 21,658,899
Storage	-	-	-
Distribution	21,658,899	-	(21,658,899)
Total	\$ 21,777,806	\$ 21,777,806	\$ -

Source: Duke Sch. E-3.2, p. 9, l. 30

Classification of MGP Costs

	Duke	OCC	Difference
Demand	\$ 11,278,005	\$ -	\$ (11,278,005)
Commodity	118,907	21,777,806	21,658,899
Customer	10,380,894	-	(10,380,894)
Total	\$ 21,777,806	\$ 21,777,806	\$ -

Source: Duke Sch. E-3.2a, p. 9, l. 30 and Sch. E-3.2c, p. 9, l. 30

Allocation of MGP Costs

	Duke	OCC(a)	Difference
Residential	\$ 15,698,913	\$ 14,016,632	\$ (1,682,281)
Small GS	\$ 1,741,790	\$ 1,637,473	(104,317)
Large GS	3,332,182	6,123,701	2,791,519
Interruptible	1,004,921	-	(1,004,921)
Total	\$ 21,777,806	\$ 21,777,806	\$ -

Source: Duke Sch. E-3.2f, p. 9, l. 30

Note (a): OCC allocation

	Factor K205	Cost
Residential	0.64362	\$ 14,016,632
Small GS	0.07519	1,637,473
Large GS	0.28119	6,123,701
Interruptible	-	-
Total	1.00000	\$ 21,777,806

Source for K205 for Production Commodity: Duke Sch. E-3.2b, p. 15, l. 5-6

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Sixth Set of Interrogatories
Date Received: September 28, 2012

OCC-INT-06-293

REQUEST:

For each of the last five years, how many non-heating residential customers were served by the Company?

RESPONSE:

Following are the number of non-heating residential gas accounts for each year whose billing system primary use code indicated that heating was not the primary use:

2008: 19,825
2009: 19,422
2010: 18,826
2011: 18,024
2012: 17,217

PERSON RESPONSIBLE: James E. Ziolkowski

B25024

UNITS IN STRUCTURE

Universe: Housing units

2007-2011 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

	Cincinnati city, Ohio	
	Estimate	Margin of Error
Total:	167,914	+/-1,305
1, detached	63,521	+/-1,209
1, attached	7,980	+/-590
2	16,978	+/-907
3 or 4	20,757	+/-975
5 to 9	16,774	+/-895
10 to 19	18,549	+/-948
20 to 49	9,690	+/-601
50 or more	13,233	+/-725
Mobile home	311	+/-137
Boat, RV, van, etc.	121	+/-88

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2007-2011 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2007-2011 American Community Survey

Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
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7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

B25032

TENURE BY UNITS IN STRUCTURE

Universe: Occupied housing units

2007-2011 American Community Survey 5-Year Estimates

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	Cincinnati city, Ohio	
	Estimate	Margin of Error
Total:	131,892	+/-1,295
Owner-occupied housing units:	54,659	+/-1,024
1, detached	45,646	+/-916
1, attached	2,370	+/-272
2	3,157	+/-379
3 or 4	1,040	+/-186
5 to 9	431	+/-112
10 to 19	353	+/-123
20 to 49	517	+/-97
50 or more	1,025	+/-170
Mobile home	99	+/-42
Boat, RV, van, etc.	21	+/-26
Renter-occupied housing units:	77,233	+/-1,254
1, detached	10,342	+/-729
1, attached	4,343	+/-470
2	8,705	+/-696
3 or 4	13,175	+/-850
5 to 9	10,545	+/-694
10 to 19	13,422	+/-812
20 to 49	6,720	+/-496
50 or more	9,732	+/-537
Mobile home	149	+/-80
Boat, RV, van, etc.	100	+/-86

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2007-2011 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census

Explanation of Symbols:

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B25069

INCLUSION OF UTILITIES IN RENT

Universe: Renter-occupied housing units

2007-2011 American Community Survey 5-Year Estimates

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Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

	Cincinnati city, Ohio	
	Estimate	Margin of Error
Total:	77,233	+/-1,254
Pay extra for one or more utilities	66,831	+/-1,217
No extra payment for any utilities	10,402	+/-599

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2007-2011 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2007-2011 American Community Survey

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B25117

TENURE BY HOUSE HEATING FUEL

Universe: Occupied housing units

2007-2011 American Community Survey 5-Year Estimates

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Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

	Cincinnati city, Ohio	
	Estimate	Margin of Error
Total:	131,892	+/-1,295
Owner occupied:	54,659	+/-1,024
Utility gas	48,510	+/-982
Bottled, tank, or LP gas	432	+/-123
Electricity	5,138	+/-373
Fuel oil, kerosene, etc.	235	+/-85
Coal or coke	0	+/-89
Wood	108	+/-80
Solar energy	0	+/-89
Other fuel	112	+/-61
No fuel used	124	+/-72
Renter occupied:	77,233	+/-1,254
Utility gas	43,017	+/-1,377
Bottled, tank, or LP gas	707	+/-179
Electricity	30,875	+/-978
Fuel oil, kerosene, etc.	317	+/-119
Coal or coke	10	+/-15
Wood	9	+/-14
Solar energy	38	+/-39
Other fuel	1,216	+/-268
No fuel used	1,044	+/-181

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

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Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-391

REQUEST:

For calendar year 2011, what were the following values for residential non-heating customers?

- a. Annual usage (Mcf);
- b. Usage by month (Mcf) for each month of the year;
- c. Annual jurisdictional sales (Mcf), that is, excluding Rate RFT sales from annual usage;
- d. Average number of customers;
- e. Number of owned non-AMR meters;
- f. Number of leased non-AMR meters;
- g. Number of owned AMR meters;
- h. Number of leased AMR meters;
- i. Number of customers without house regulators; and
- j. Uncollectible accounts expense

RESPONSE:

- a. 429,560 MCF

b.

Row Labels	Sum of MCF
01/01/2011	91,408
02/01/2011	75,711
03/01/2011	57,834
04/01/2011	36,647
05/01/2011	23,198
06/01/2011	14,246
07/01/2011	11,622
08/01/2011	9,981
09/01/2011	11,230
10/01/2011	16,135
11/01/2011	29,816
12/01/2011	51,733
Grand Total	429,560

- c. 306,161 MCF
- d. 18,024
- e. Data is not available
- f. Data is not available
- g. Data is not available
- h. Data is not available
- i. Data is not available
- j. Data is not available

PERSON RESPONSIBLE: James E. Ziolkowski

Duke Energy Ohio
Case No. 12-1685-GA-AIR
OCC Ninth Set of Interrogatories
Date Received: November 6, 2012

OCC-INT-09-392

REQUEST:

For calendar year 2011, what were the following values for residential heating customers?

- a. Annual usage (Mcf);
- b. Usage by month (Mcf) for each month of the year
- c. Annual jurisdictional sales (Mcf) (that is, excluding Rate RFT sales from annual usage);
- d. Average number of customers;
- e. Number of owned non-AMR meters;
- f. Number of leased non-AMR meters;
- g. Number of owned AMR meters;
- h. Number of leased AMR meters;
- i. Number of customers without house regulators; and
- j. Uncollectible accounts expense?

RESPONSE:

- a. 29,871,015 MCF

b. Usage by month (Mcf) for each month of the year

Row Labels	Sum of MCF
01/01/2011	6,917,185
02/01/2011	5,889,277
03/01/2011	4,271,358
04/01/2011	2,651,896
05/01/2011	1,355,664
06/01/2011	747,500
07/01/2011	542,888
08/01/2011	472,033
09/01/2011	530,964
10/01/2011	859,221
11/01/2011	1,985,511
12/01/2011	3,647,520
Grand Total	29,871,015

- c. 19,323,784 MCF
- d. 360,636
- e. Data is not available.
- f. Data is not available.
- g. Data is not available.
- h. Data is not available.
- i. Data is not available.
- j. Data is not available.

PERSON RESPONSIBLE: James E. Ziolkowski

Duke Energy Ohio, Inc.
Gas Rate Case
Case No. 12-1685-GA-AIR, et al.

Estimating the Difference in the Cost of Service for Residential Heating and Non-Heating Customers

Elements of Residential Cost of Service (Duke Sch. E-3.2g, p. 1), excluding MGP costs

Commodity	\$ 4,979,470
Demand	71,295,900
Customer	<u>124,931,517</u>
Total	\$ 201,206,887

Step 1: Allocate Commodity cost based on annual usage (mcf) in 2011

	Usage	Ratio	Commodity Cost
Heating(a)	29,871,015	0.9858	\$ 4,908,762
Non-Heating(b)	<u>429,560</u>	<u>0.0142</u>	<u>70,708</u>
Total	30,300,575	1.0000	\$ 4,979,470

Step 2: Allocate Demand cost based on average and excess using peak month (Jan. 2011)

	Avg. Month	Peak Month	Excess	Excess Ratio	Avg. Ratio	Combined	Cost of Service
Heating(a)	2,489,251	6,917,185	4,427,934	0.9876	0.9858	0.9867	\$ 70,347,665
Non-Heating(b)	<u>35,797</u>	<u>91,408</u>	<u>55,611</u>	<u>0.0124</u>	<u>0.0142</u>	<u>0.0133</u>	<u>948,235</u>
Total	2,525,048	7,008,593	4,483,545	1.0000	1.0000	1.0000	\$ 71,295,900

Step 3: Separate Customer cost between revenue-based and customer-based costs

Total Customer cost \$ 124,931,517

Revenue-Based (Uncollectibles, Interest on Customer Deposits)

Uncollectibles	\$ 2,332,742	Workpaper SJR-1
Interest on cust. Deposits	<u>234,286</u>	Sch. E-3.2e, p.8, l.42
Total	\$ 2,567,028	

Customer-Based cost \$ 122,364,489

Allocate Revenue-Based Customer Cost Based on Revenues Under Present Rates

	Present Rate		
	Revenue	Ratio	Cost
Heating	\$ 120,466,711	0.9556	\$ 2,453,052
Non-Heating	<u>5,594,511</u>	<u>0.0444</u>	<u>113,976</u>
Total	\$ 126,061,222	1.0000	\$ 2,567,028

Allocate Customer cost based on average number of customers (2011)

	Customers	Ratio	Cost
Heating(a)	360,636	0.9524	\$ 116,539,940
Non-Heating(b)	<u>18,024</u>	<u>0.0476</u>	<u>5,824,550</u>
Total	378,660	1.0000	\$ 122,364,489

Step 4: Total Estimated Cost of Service

	Heating	Non-Heating	Total
Commodity	\$ 4,908,762	\$ 70,708	\$ 4,979,470
Demand	70,347,665	948,235	71,295,900
Customer	<u>118,992,991</u>	<u>5,938,526</u>	<u>124,931,517</u>
Total Cost of Service	\$ 194,249,417	\$ 6,957,470	\$ 201,206,887

Compare to Revenues Under Existing Rates, Excluding Riders

	Rate	Heating		Non-Heating	
		Units	Revenue	Units	Revenue
Fixed Delivery	\$ 25.33	4,296,538	\$ 108,831,308	214,734	\$ 5,439,212
First 400 ccf	\$ 0.32728	31,486,084	10,304,766	474,515	155,299
Over 400 ccf	\$ 0.97278	1,367,871	1,330,638	-	-
Total			\$ 120,466,711		\$ 5,594,511

% of cost of service		62.0%	80.4%
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(a) OCC-INT-09-392

(b) OCC-INT-09-391

Duke Energy Ohio, Inc.
Gas Rate Case
Case No. 12-1685-GA-AIR, et al.

**Sample Rate Design for Residential Heating and Non-Heating Customers
Using Duke's Proposed Revenue Requirement**
(Ratse RS and RFT Combined)

		Duke Proposed		OCC Proposed	
	Units	Rate	Revenue	Rate	Revenue
Heating Customers					
Customer charge	4,296,538	\$ 33.03	\$ 141,914,650	\$ 33.03	\$ 141,914,650
1st 400 ccf per month	31,486,084	\$ 1.304768	41,082,035	\$ 1.356502	42,710,936
Over 400 ccf per month	1,367,871	\$ 3.890974	5,322,350	\$ 3.890974	5,322,350
Subtotal			\$ 188,319,035		\$ 189,947,936
Non-Heating Customers					
Customer charge	214,734	\$ 33.03	\$ 7,092,664	\$ 25.33	\$ 5,439,212
1st 400 ccf per month	474,515	\$ 1.304768	619,132	\$ 1.356502	643,681
Over 400 ccf per month	-	\$ 3.890974	-	\$ 3.890974	-
Subtotal			\$ 7,711,796		\$ 6,082,893
Total			\$ 196,030,831		\$ 196,030,829

Note: Billing units from Attachment SJR-12 (see also WP SJR-2)

This foregoing document was electronically filed with the Public Utilities

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Case No(s). 12-1685-GA-AIR, 12-1686-GA-ATA, 12-1687-GA-ALT, 12-1688-GA-AAM

Summary: Testimony Direct Testimony of Scott J. Rubin on Behalf of the Office of the Ohio Consumers' Counsel electronically filed by Patti Mallarnee on behalf of Sauer, Larry S.