

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

The Application of Duke Energy Kentucky, )  
Inc., for Approval to Amend Its Gas Main ) Case No. 2016-00298  
Extension Tariff Pursuant to 807 KAR 5:022, )  
Section 9(16)(d)l )

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**APPLICATION**

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Now comes Duke Energy Kentucky, Inc. (Duke Energy Kentucky or the Company) and requests approval to amend its tariff, specifically, KY.P.S.C. Gas No. 2, Second Revised Sheet No. 60, Rider X, Main Extension Policy (Rider X Tariff), to allow for an additional and alternative main extension policy through the use of a net present value (NPV) analysis tool that will provide a standard methodology to cost-justify gas main extensions for customers in excess of the 100 feet provided under 807 KAR 5:022, Section 9(16). The NPV tool is intended to make natural gas conversions and connections more affordable to customers in situations where the anticipated future use and likelihood of additional customer connections are factored into the calculation of a customer's cost or contribution in the overall construction cost for extension of gas mains.

Duke Energy Kentucky further moves the Commission, to the extent necessary, pursuant to 807 KAR 5:001, Section 22, for leave to deviate from and a waiver of the requirements of 807 KAR 5:022, Section 9(16).

In support of this Application, pursuant to Administrative Regulation 807 KAR 5:001, Duke Energy Kentucky submits the following:

## I. INTRODUCTION

1. Duke Energy Kentucky is an investor-owned utility engaged in the business of furnishing natural gas and electric services to various municipalities and unincorporated areas in Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in the Commonwealth of Kentucky.

2. Pursuant to 807 KAR 5:001, Section 14(1), Duke Energy Kentucky states that its business address is 139 East Fourth Street, Cincinnati, Ohio 45202, and that its local office in Kentucky is located at Duke Energy Envision Center, 4580 Olympic Boulevard, Erlanger, Kentucky 41018. The Company further states that its electronic mail address for purposes of this matter is [KYfilings@duke-energy.com](mailto:KYfilings@duke-energy.com).

3. Pursuant to 807 KAR 5:001, Section 14(2), Duke Energy Kentucky states that it was originally incorporated in the Commonwealth of Kentucky on March 20, 1901, and attests that it is currently in good standing in said Commonwealth.

## II. BACKGROUND

4. The Rider X Tariff is an existing gas tariff, most recently approved in Case No. 2009-00202,<sup>1</sup> and provides the terms and conditions for Duke Energy Kentucky's gas main extension policy consistent with 807 KAR 5:001, Section 14. Under the Rider X Tariff, a line extension for an individual customer is provided without charge where that extension is 100 feet or less. In situations where the extension would have to be longer than 100 feet, the current policy requires the total cost of the excess footage to be deposited with the Company based on the estimated cost per foot for main extensions.

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<sup>1</sup> *In the Matter of the Application of Duke Energy Kentucky, Inc. for an Adjustment of Rates*, Case No. 2009-00202, December 29, 2010 (Order).

5. In practice, the existing policy has, at times, prevented natural gas connections for residential customers along older residential neighborhood streets that wish to connect to an existing main but are not the most immediately adjacent property to the existing natural gas utility facilities and in excess of 100 feet from the existing natural gas main. Experience shows that when the first customer who generally wishes to establish natural gas service is hundreds or thousands of feet away from the Company's existing natural gas main, a significant upfront investment is required for the customer to establish natural gas service.

6. Under the current tariff, in order to connect, the potential customer wishing to have natural gas must either convince his neighbors to also convert at the same time or be willing and able to pay the entire main extension cost in excess of 100 feet to connect the gas main to his property. Inevitably, the nearby property owners are unwilling to convert all at that same time due to cost or because their own equipment (furnaces, water tanks, *etc.*) is still functioning well. Ironically, the neighbors would be willing to convert in the future when their own heating equipment begins to fail. Because the potential customer wishing to convert immediately cannot afford to pay the entire extension cost himself/herself, he or she will invest in other fuel sources and not connect natural gas. This scenario repeats itself over and over again as each subsequent neighbor comes into his or her own decision to consider a natural gas conversion. Others are not in a position to share in the conversion costs at the same time. And even if in the future those neighbors do decide to convert, the potential customer who originally wanted natural gas is likely unwilling to switch because he has already invested in other equipment.

7. To address this issue and make natural gas connections more affordable and attractive to customers, Duke Energy Kentucky requests to amend the language in its tariff to allow for the use of a NPV analysis tool to calculate construction cost for extension of gas mains

that will factor in and account for the likelihood of nearby property owners to switch in the future. In other words, the potential customer wishing to connect natural gas service will receive credit towards his or her customer contribution to connect service at the outset based upon the likelihood of additional customers to connect at the future, rather than having to pay the total cost to connect upfront and only receiving credit for connections up to ten years after the initial investment. The NPV tool will provide a standard and transparent process to provide an upfront credit towards the overall cost of the main extension to the potential customer(s) wishing to connect by way of a discounted NPV extension contribution that factors in future consumption, number and likelihood of additional nearby conversions based upon existing fuel sources (propane, fuel oil, electric, *etc.*) and actual cost to extend the gas main.

8. The Gas NPV model estimates the future cash flows of the project extension and discounts them into present value amounts using a discount rate that represents the project's weighted cost of capital as follows:

- A positive net present value indicates that the projected earnings generated by a project (in present dollars) exceeds the anticipated costs (also in present dollars).
- A negative net present value indicates that the projected earnings generated by a project (in present dollars) are less than the anticipated costs (also in present dollars).
- When the NPV=0, then the project will earn the discounted rate, or in this case, the approved rate of return from the most recent gas base rate case.

Based upon the Gas NPV Model results, the Company will then determine what, if any, customer contribution is necessary to cost justify the main extension desired by the potential



customer. A positive or zero NPV investment is cost justified and requires no additional customer contribution to extend the main. Any portion of the extension that is provided under the Gas NPV tool will be considered a capital cost to the Company as being a cost-effective investment to the Company's gas delivery system. Similarly, a negative NPV result means that the investment is not cost justified on its own and will require a customer(s) contribution<sup>1</sup> to justify the project (includes estimated revenues from current and future customers). If needed, the tool may be used to calculate C&I minimum usage requirement contracts.

9. The net result of this new process is that potential customers will continue to receive the minimum 100 feet of main extension at no charge, and could qualify for additional extension length at little to no charge based upon an established methodology. In other words, for extensions of 100 feet or less, there would be no change to the current Tariffed process. For extensions longer than 100 feet, Duke Energy Kentucky's proposal would allow an additional method by which the potential customer could receive a line extension that exceeds 100 feet at no charge or will be required to pay lesser amount for a line extension fee that is calculated as necessary to cost-justify the Company to fund the entire project. This NPV analysis of the construction cost to be incurred to extend service will factor the anticipated revenue to be received from an individual potential customer, and the likelihood of future service connections along the proposed extension, for a main extension in excess of 100 feet. The key inputs to the NPV calculation are as follows:

- NAICS/SIC Code of existing utility customers for expected revenue of new business customers.
- Estimated residential revenue per home from Duke Energy Kentucky revenue reports.

- Estimated customer conversion rates for main extensions.
- Pipe size.
- Estimated footage.
- Estimated costs of pipeline facilities.

10. Any customer contribution extension payment required and made when the NPV is negative, is eligible for a future refund due to subsequent connections under the existing plan.

11. For large commercial and industrial customers with process load (that is, load that is not related to space conditioning, lighting, service water heating, or ventilating or a building as it relates to human occupancy), Duke Energy Kentucky may require a minimum customer usage commitment for a defined period of time, not to exceed six years. If needed, the tool may be used to calculate C&I minimum usage requirement contracts. This allows flexibility in offering minimum usage and contract duration terms to accommodate the differing usage capabilities and preferences of business customers, while maintaining a consistent cost recovery requirement based on a NPV analysis.

12. Duke Energy Kentucky's parent, Duke Energy Ohio, Inc. (Duke Energy Ohio) received approval of a similar program in Case No. 12-1685-GA-AIR,<sup>2</sup> and has been utilizing the NPV tool for analysis of gas main extensions in Ohio for some time. The NPV tool has proved to be quite successful for making natural gas service connections affordable for residential, as well as commercial and industrial customers.

13. The Commission's approval of the Rider X Tariff amendment and extending infrastructure will facilitate natural gas growth in the Commonwealth of Kentucky and will benefit both Duke Energy Kentucky and its customers. With low gas prices versus propane and

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<sup>2</sup> *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in its Natural Gas Distribution Rates*, Case No. 12-1685-GA-AIR, et al., Opinion and Order (November 13, 2013).

oil, making natural gas main extensions more feasible and cost effective for the public, saves money for both residents and businesses. This methodology change simply seeks to take into account the probability of other future customers along the route converting to gas, without making the potential customer requesting gas service now to pay for the entire extension up front. In addition, every gas main installed and every additional cubic foot of gas utilized, adds to the tax base, so the Commonwealth of Kentucky benefits from the growth without having to pay for it with taxes, and in fact increases its tax base, by approving this work process change. Additionally, the greater the number of natural gas customers, the larger the customer base across which Duke Energy Kentucky's cost of service is allocated.

14. As such, Duke Energy Kentucky seeks Commission approval to amend its Rider X Tariff to include the use of the NPV analysis tool.

15. Exhibit 1 is a copy of the current redlined gas tariff sheet, Rider X, Main Extension Policy, KY.P.S.C. Electric No. 60, Second Revised Sheet No. 60.

16. Exhibit 2 is copy of the proposed gas tariff sheet, Rider X, Main Extension Policy, KY.P.S.C. Electric No. 60, Second Revised Sheet No. 60.

17. Exhibit 3 is a summary description of the proposed tariff change.

18. Exhibits 4 and 5 are the Direct Testimony of Duke Energy Kentucky Witnesses John A. Hill, Jr. and Jim Ziolkowski who support the NPV analysis tool and the Rider X Tariff.

### **III. REQUEST FOR APPROVAL AND WAIVERS**

19. The Commission has discretionary authority to approve Duke Energy Kentucky's proposed amendment to its Rider X, main extension policy. 807 KAR 5:022 Section 9(16)(d) provides that a utility is not prohibited from making extensions under different arrangements, providing such arrangements have been approved by the Commission.

20. Additionally, Duke Energy Kentucky's Rider X Tariff allows for extensions under different arrangements, permitted those arrangement have been approved by the Commission.

21. Duke Energy Kentucky respectfully requests that the Commission approve such an alternative arrangement by way of a standard tariffed offering that will be available to all customers on a comparable basis. Under the Rider X revision proposed, potential natural gas customers will, at a minimum, receive the current 100 feet as provided under the Commission's regulations. Those potential customers may be able to receive additional natural gas main extension length as can be justified under the NPV calculation, which will be applied in a non-discriminatory and consistent manner under the methodology once approved by the Commission. The formula to be used as part of the NPV tool calculation is contained in the tariff.

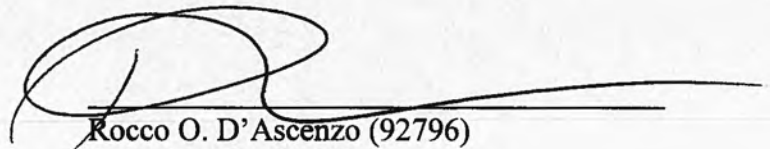
22. Duke Energy Kentucky is seeking any waivers the Commission may deem necessary to allow it to extend gas main beyond the 100 feet as set forth in 807 KAR 5:022, Section 9(16).



**WHEREFORE**, Duke Energy Kentucky respectfully requests that the Commission issue its Order approving the changes herein, and granting a deviation or waiver from the requirements set forth in 807 KAR 5:001, Section 9(16).

Respectfully submitted,

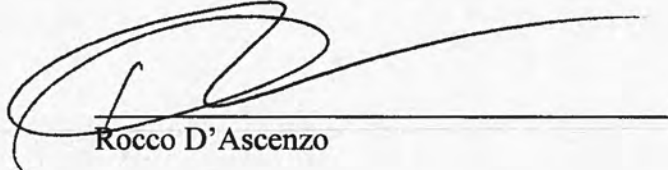
DUKE ENERGY KENTUCKY, INC.



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**CERTIFICATE OF SERVICE**

This is to certify that a copy of the foregoing Application of Duke Energy Kentucky, Inc. has been served via overnight mail to the following party on this 29<sup>th</sup> day of August, 2016 \_\_\_\_\_:

  
\_\_\_\_\_  
Rocco D'Ascenzo

Rebecca W. Goodman  
Executive Director  
Office of Rate Intervention  
Office of the Attorney General  
1024 Capital Center Drive, Suite 200  
Frankfort, Kentucky 40601-8204

Duke Energy Kentucky, Inc.  
4580 Olympic Blvd.  
60  
Erlanger, Kentucky 41018

KY.P.S.C. Gas No. 2  
Third Revised Sheet No. 60  
Cancelling and Superseding  
Second Revised Sheet No.

Page 1 of 2

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**RIDER X**  
**MAIN EXTENSION POLICY**

**AVAILABILITY**

Available in entire territory to which tariff Ky.P.S.C. Gas No. 2 applies.

**APPLICABILITY**

Applicable to gas service supplied in accordance with provisions of the appropriate rate currently in effect, from the nearest available distribution main when it is necessary to extend such main.

**EXTENSION PLAN**

1. Normal Extensions. An extension of one hundred (100) feet or less shall be made by the Company to an existing distribution main without charge for a prospective customer who shall apply for and contract to use service for one year or more.
2. Other Extensions. When an extension of the Company's main to serve an applicant amounts to more than one hundred (100) feet per customer, the Company may require the total cost of the excess footage in excess of one hundred (100) feet per customer to be deposited with the Company by the applicant based on the estimated cost per foot for main extensions.

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The applicant will be reimbursed under the following plan:

- (i) Each year for a period of up to but not exceeding ten (10) years, which begins on the effective date of the main extension contract, the Company shall refund to the customer, who paid for the excess footage, the cost of one hundred (100) feet of the extension in place for each additional customer connected during the year whose service line is directly connected to the extension installed, but in no case shall the total amount refunded, including the amount determined under paragraph (ii), exceed the amount paid to the Company.
- (ii) Each year for a period of up to but not exceeding ten (10) years, which begins on the effective date of the main extension contract, the Company shall refund to the customer who paid for the excess footage, an amount reflecting the positive impact of a subsequent connection or extension, by analyzing the estimated cost and corresponding revenues resulting from the subsequent connection or extension. This amount will be paid when the first customer is connected to the subsequent connection or extension.

(iii) The Company, at its sole discretion, may perform a net present value (NPV) analysis based upon the total construction costs for the entire length of the extension, and not just the costs of the extension in excess of 100 feet. The NPV analysis will take into account all volumetric base distribution revenues and fixed monthly charge revenues to be received from the customer. The NPV analysis will use 7.377% as the discount rate and, for residential

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Issued by authority of an Order of the Kentucky Public Service  
Commission dated \_\_\_\_\_  
in Case No. 2016-00298.

(N)

Issued: August 30, 2016  
Effective: October 1, 2016  
Issued by James P. Henning, President



Duke Energy Kentucky, Inc.  
4580 Olympic Blvd.  
60  
Erlanger, Kentucky 41018

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customers, it will assume a term of no less than ten (10) consecutive years. If the NPV calculation is positive or zero, the customer will not be charged for the construction costs. If the NPV calculation is negative, the customer must deposit with the Company an amount equal to the results of the NPV calculation, prior to construction taking place. Any such deposit shall be eligible for a refund consistent with the terms and conditions of the main extension contract entered into between the Company and the customer. Further, the customer must continue to receive gas service from the Company at the same service installation or premises in order to be eligible for a refund. Refunds shall not exceed the amount of the deposit and shall be limited to a period of ten (10) consecutive years following the effective date of the main extension contract.

For large commercial and industrial customers with process load, the Company may require a minimum customer usage commitment for a defined period or term not to exceed six (6) years.

(N)

3. An applicant desiring an extension to a proposed real estate subdivision may be required to pay the entire cost of the extension. Each year for a period of up to but not exceeding ten (10) years, which begins on the effective date of the main extension contract, the Company shall refund to the applicant, who paid for the extension, a sum equivalent to the cost of one hundred (100) feet of the extension installed for each additional customer connected during the year, but in no case shall the total amount refunded over the ten (10) year period exceed the amount paid to the Company. There shall be no refunds after the end of the said ten (10) year period.

#### EXTENSION PLAN (Contd.)

4. Nothing contained herein shall be construed to prohibit the Company from making extensions under different arrangements provided such arrangements have been approved by the Kentucky Public Service Commission.
5. Nothing contained herein shall be construed as to prohibit the Company from making, at its expense, greater extensions than herein prescribed, should its judgment so dictate, provided like free extensions are made to other customers under similar conditions.
6. Upon complaint to and investigation by the Kentucky Public Service Commission, the Company may be required to construct extensions greater than one hundred (100) feet upon a finding by the Commission that such extension is reasonable.

#### SERVICE REGULATIONS

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

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## RIDER X

### MAIN EXTENSION POLICY

#### AVAILABILITY

Available in entire territory to which tariff Ky.P.S.C. Gas No. 2 applies.

#### APPLICABILITY

Applicable to gas service supplied in accordance with provisions of the appropriate rate currently in effect, from the nearest available distribution main when it is necessary to extend such main.

#### EXTENSION PLAN

1. Normal Extensions. An extension of one hundred (100) feet or less shall be made by the Company to an existing distribution main without charge for a prospective customer who shall apply for and contract to use service for one year or more.
2. Other Extensions. When an extension of the Company's main to serve an applicant amounts to more than one hundred (100) feet per customer, the Company may require the total cost of the excess footage in excess of one hundred (100) feet per customer to be deposited with the Company by the applicant based on the estimated cost per foot for main extensions.

The applicant will be reimbursed under the following plan:

- (i) Each year for a period of up to but not exceeding ten (10) years, which begins on the effective date of the main extension contract, the Company shall refund to the customer, who paid for the excess footage, the cost of one hundred (100) feet of the extension in place for each additional customer connected during the year whose service line is directly connected to the extension installed, but in no case shall the total amount refunded, including the amount determined under paragraph (ii), exceed the amount paid to the Company.
- (ii) Each year for a period of up to but not exceeding ten (10) years, which begins on the effective date of the main extension contract, the Company shall refund to the customer who paid for the excess footage, an amount reflecting the positive impact of a subsequent connection or extension, by analyzing the estimated cost and corresponding revenues resulting from the subsequent connection or extension. This amount will be paid when the first customer is connected to the subsequent connection or extension.
- (iii) The Company, at its sole discretion, may perform a net present value (NPV) analysis based upon the total construction costs for the entire length of the extension, and not just the costs of the extension in excess of 100 feet. The NPV analysis will take into account all volumetric base distribution revenues and fixed monthly charge revenues to be received from the customer. The NPV analysis will use 7.377% as the discount rate and, for residential

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Third Revised Sheet No. 60  
Cancelling and Superseding  
Second Revised Sheet No. 60  
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### **EXTENSION PLAN (Contd.)**

customers, it will assume a term of no less than ten (10) consecutive years. If the NPV calculation is positive or zero, the customer will not be charged for the construction costs. If the NPV calculation is negative, the customer must deposit with the Company an amount equal to the results of the NPV calculation, prior to construction taking place. Any such deposit shall be eligible for a refund consistent with the terms and conditions of the main extension contract entered into between the Company and the customer. Further, the customer must continue to receive gas service from the Company at the same service installation or premises in order to be eligible for a refund. Refunds shall not exceed the amount of the deposit and shall be limited to a period of ten (10) consecutive years following the effective date of the main extension contract.

For large commercial and industrial customers with process load, the Company may require a minimum customer usage commitment for a defined period or term not to exceed six (6) years.

3. An applicant desiring an extension to a proposed real estate subdivision may be required to pay the entire cost of the extension. Each year for a period of up to but not exceeding ten (10) years, which begins on the effective date of the main extension contract, the Company shall refund to the applicant, who paid for the extension, a sum equivalent to the cost of one hundred (100) feet of the extension installed for each additional customer connected during the year, but in no case shall the total amount refunded over the ten (10) year period exceed the amount paid to the Company. There shall be no refunds after the end of the said ten (10) year period.
4. Nothing contained herein shall be construed to prohibit the Company from making extensions under different arrangements provided such arrangements have been approved by the Kentucky Public Service Commission.
5. Nothing contained herein shall be construed as to prohibit the Company from making, at its expense, greater extensions than herein prescribed, should its judgment so dictate, provided like free extensions are made to other customers under similar conditions.
6. Upon complaint to and investigation by the Kentucky Public Service Commission, the Company may be required to construct extensions greater than one hundred (100) feet upon a finding by the Commission that such extension is reasonable.

### **SERVICE REGULATIONS**

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

Issued by authority of an Order of the Kentucky Public Service  
Commission dated \_\_\_\_\_ in Case No. 2016-00298.

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Effective: October 1, 2016  
Issued by James P. Henning, President

**SUMMARY DESCRIPTION OF PROPOSED TARIFF CHANGE**

**Rider X, Main Extension Policy**

### Description of the Proposed Tariff Change

Duke Energy Kentucky proposes to modify Ky P.S.C. Gas No. 2 Second Revised Sheet No. 60, Rider X, Main Extension Policy to allow for the use of a net present value analysis tool to calculate construction costs for extension of gas mains that will factor in and provide credit for the likelihood of nearby property owners to switch in the future. The section of the aforementioned tariff entitled Extension Plan will be changed to add language that allows for a Net Present Value (NPV) analysis for gas main extensions longer than one hundred feet. Specifically, the additional text in the amended section will state as follows:

(iii) The Company, at its sole discretion, may perform a net present value (NPV) analysis based upon the total construction costs for the entire length of the extension, and not just the costs of the extension in excess of 100 feet. The NPV analysis will take into account all volumetric base distribution revenues and fixed monthly charge revenues to be received from the customer. The NPV analysis will use 7.377% as the discount rate and, for residential customers, it will assume a term of no less than ten (10) consecutive years. If the NPV calculation is positive or zero, the customer will not be charged for the construction costs. If the NPV calculation is negative, the customer must deposit with the Company an amount equal to the results of the NPV calculation, prior to construction taking place. Any such deposit shall be eligible for a refund consistent with the terms and conditions of the main extension contract entered into between the Company and the customer. Further, the customer must continue to receive gas service from the Company at the same service installation or premises in order to be eligible for a refund. Refunds shall not exceed the amount of the deposit and shall be limited to a period of ten (10) consecutive years following the effective date of the main extension contract.

For large commercial and industrial customers with process load, the Company may require a minimum customer usage commitment for a defined period or term not to exceed six (6) years.

The purpose of this change to Rider X is to make natural gas connections more affordable to customers by reducing the upfront customer investment requirement. To the extent the Company's customer base grows, fixed system costs will be allocated among more customers, thus mitigating the rate impacts of system fixed costs.



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Extension Tariff Pursuant to 807 KAR ) Case No. 2016-00298  
5:022, Section 9(16)(d) )

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**DIRECT TESTIMONY OF**

**JOHN A. HILL, JR.**

**ON BEHALF OF**

**DUKE ENERGY KENTUCKY, INC.**

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August 29, 2016

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**I. INTRODUCTION AND PURPOSE**

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

2 A. My name is John A. Hill, Jr., and my business address is 139 East Fourth Street,  
3 Cincinnati, Ohio 45202.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by the Duke Energy Business Services LLC (DEBS) as Director,  
6 Integrity Management, Engineering and Growth for Duke Energy Kentucky, Inc.,  
7 (Duke Energy Kentucky or Company) and Duke Energy Ohio, Inc. (Duke Energy  
8 Ohio). DEBS provides various administrative and other services to Duke Energy  
9 Kentucky and other affiliated companies of Duke Energy Corporation (Duke  
10 Energy).

11 **Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND  
12 AND PROFESSIONAL EXPERIENCE.**

13 A. I graduated from the University of Cincinnati with a Bachelor of Science in Civil  
14 & Environmental Engineering and later obtained an MBA from the University of  
15 Kentucky. In 1996, I obtained my license as a Professional Engineer in the  
16 Commonwealth of Kentucky and, by reciprocity, later in the State of Ohio. I  
17 started my career as an engineering consultant focused mainly on completing  
18 geotechnical and environmental projects for various companies and public  
19 agencies. I then worked for an investor-owned water utility, overseeing new  
20 development and pipeline extension projects as well as asset mapping/records. I  
21 joined Cinergy Corp. in 2001 and held various management/leadership positions

1 in Electric Generation and Environmental, Health & Safety and, in 2010, joined  
2 the Gas Engineering Department as Director of Engineering.

3 **Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AS DIRECTOR,  
4 INTEGRITY MANAGEMENT, ENGINEERING AND GROWTH.**

5 A. As Director, Integrity Management, Engineering and Growth, I oversee multiple  
6 engineering disciplines (Civil, Mechanical, Electrical/Controls, and Corrosion)  
7 and technical functions responsible for gas pipeline activities such as design,  
8 system monitoring, system design, meter/regulator design, integrity management  
9 and corrosion services. I also provide planning and oversight related to business  
10 development and customer growth as well as overall responsibility for the capital  
11 budget. In addition, I represent Gas Operations on Corporate and Industry  
12 initiatives/committees. I also provide subject matter expertise for Duke Energy  
13 Kentucky and Duke Energy Ohio's integrity management programs.

14 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE KENTUCKY  
15 PUBLIC SERVICE COMMISSION?**

16 A. Yes. I have testified before the Kentucky Public Service Commission  
17 (Commission) on several occasions, most recently as part of the Company's  
18 Application for Approval of a Certificate of Public Convenience and Necessity  
19 (CPCN) to implement an Accelerated Service Line Replacement Program in Case  
20 No. 2015-00210.

21 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS  
22 PROCEEDING?**



1 A. The purpose of my testimony is to describe and support the Company's  
2 application for waiver and its proposal to amend its Gas Main Extension Tariff,  
3 Rider X, to implement an alternative tool for the Company to use to calculate the  
4 level of customer contribution necessary to extend the Company's natural gas  
5 main and connect a new service. This new tool, which the Company refers to as a  
6 net present value (NPV) calculation will allow the Company to take additional  
7 factors into consideration than what is presently available to determine how much  
8 a customer must contribute upfront to extend the Company's natural gas main  
9 (Gas NPV Tool) and provide the customer with natural gas service.

## II. GAS MAIN EXTENSION PROPOSAL

10 **Q. PLEASE DESCRIBE DUKE ENERGY KENTUCKY'S CURRENT RIDER**  
11 **X TARIFF.**

12 A. The Rider X Tariff is the Company's existing gas main extension tariff and was  
13 most recently approved in Case No. 2009-00202. Rider X provides the terms and  
14 conditions for Duke Energy Kentucky's gas main extension policy consistent with  
15 807 KAR 5:001, Section 14. Under the current Rider X Tariff, a line extension  
16 for an individual potential customer is provided without charge where that  
17 extension is 100 feet or less. In situations where the extension would have to be  
18 longer than 100 feet, the Company requires the total cost of the excess footage to  
19 be deposited with the Company based on the estimated cost per foot for main  
20 extensions. In those situations where a potential customer pays for an extension  
21 and future customers benefit from that initial extension and connect a new  
22 service, for a period of up to ten years, the Company will refund a pro-rata portion

1 of the initial customer's investment. This policy has been in place for many years,  
2 but in practice, is becoming a barrier to affordable natural gas service connections  
3 for many customers.

4 **Q. PLEASE EXPLAIN WHY THAT MAIN EXTENSION POLICY IS NO**  
5 **LONGER SUFFICIENT.**

6 A. In practice, the existing policy has, at times, prevented natural gas connections for  
7 a residential customer living along older residential neighborhood streets that  
8 wish to connect to natural gas service but are located far in excess of 100 feet  
9 from the existing natural gas main. These potential customers have not been able  
10 to afford the upfront cost of a per foot charge to extend the Company's natural gas  
11 main and are unable to convince neighbors to join in the investment at that time.  
12 Experience shows that the first potential customer along a path that doesn't  
13 presently have natural gas service but who wishes to establish natural gas service  
14 is hundreds or thousands of feet away from the Company's existing natural gas  
15 main. Even though the potential customer will receive the first 100 feet of the  
16 extension at no charge, and is eligible for partial refunds over a ten-year period as  
17 other customers connect in the future, extending the main to provide that initial  
18 service still requires a significant upfront investment for the potential customer to  
19 establish natural gas service.

20 Under the current tariff, in order to connect, the potential customer  
21 wishing to have natural gas must either convince his neighbors to also convert at  
22 the same time or pay the entire cost in excess of 100 feet to run the main to his or  
23 her property. Inevitably, the nearby property owners are unwilling to convert all at

1 that same time due to funds or because their own equipment (furnaces, water  
2 tanks, *etc.*) are still functioning well. Ironically, those neighbors would be more  
3 willing to convert in the future when their own heating equipment begins to fail.  
4 But the potential customer wishing to convert immediately cannot afford to pay  
5 the entire extension cost himself/herself. This results in the potential customer  
6 desiring a natural gas conversion to decline natural gas service and elect to invest  
7 in current or other fuel sources. And even if in the future the other neighbors do  
8 decide to convert, the potential customer that initially wanted natural gas is then  
9 unable to switch because he or she has already invested in other equipment.

10 **Q. DOES THE COMPANY'S RIDER X AND THE COMMISSION'S**  
11 **REGULATION SUPPORT ADDITIONAL STRUCTURES FOR**  
12 **CUSTOMERS' WISHING TO ESTABLISH NATURAL GAS SERVICE**  
13 **AND EXTEND NATURAL GAS MAINS?**

14 **A.** Yes, but not in a specific or defined manner. Both the regulation and the  
15 Company's tariff allow for the potential for different structures if approved by the  
16 Commission. In order to provide an alternative structure that is fair, transparent,  
17 and can be applied in a comparable and nondiscriminatory manner, Duke Energy  
18 Kentucky is proposing to amend its current tariff to implement such an alternative  
19 structure and make it available to all customers. The Company believes this is an  
20 optimal time and cost-efficient solution as opposed to approaching the  
21 Commission with numerous one-off special contracts, or doing nothing and  
22 having Kentucky residents continue to pay for higher-cost fuels.

1 **Q. PLEASE EXPLAIN THE COMPANY'S PROPOSAL TO AMEND ITS**  
2 **RIDER X TARIFF.**

3 A. To address this issue and make natural gas connections more affordable and  
4 attractive to customers on a non-discriminatory and comparable basis, Duke  
5 Energy Kentucky is proposing to amend its Rider X to implement an alternative  
6 to the standard 100 foot free, customer pays the remainder process that exists  
7 today. The proposed Gas NPV Tool will provide a transparent and standard way  
8 to analyze and calculate construction costs for the extension of gas mains that will  
9 factor in and provide credit for the likelihood of nearby property owners to  
10 connect natural gas in the future. Rather than potentially getting paid back over a  
11 ten-year future timeframe, the Gas NPV Tool makes the initial natural gas  
12 connection more affordable by providing the potential natural gas customer an  
13 upfront credit towards the overall customer contribution portion of the cost of a  
14 gas main extension based upon several factors including: 1) future natural gas  
15 consumption; 2) number and likelihood of additional nearby future conversions  
16 based upon existing fuel sources (propane, fuel oil, electric, *etc.*); and 3) actual  
17 cost to extend the gas main.

18 The Gas NPV Tool and changes to the Company's Rider X are included in  
19 Exhibit 1 to the Company's Application and are supported by Duke Energy  
20 Kentucky witness, Mr. Ziolkowski.

21 **Q. PLEASE EXPLAIN HOW THE GAS NPV TOOL CALCULATION**  
22 **WORKS.**



1 A. The Gas NPV model estimates the future cash flows of the project extension  
2 using key inputs and discounts them into present value amounts using a discount  
3 rate that represents the project's weighted cost of capital as follows:

4 ○ A positive net present value indicates that the projected earnings  
5 generated by a project (in present dollars) exceeds the anticipated costs  
6 (also in present dollars).

7 ○ A negative net present value indicates that the projected earnings  
8 generated by a project (in present dollars) are less than the anticipated  
9 costs (also in present dollars).

10 ○ When the NPV=0, then the project will earn the discounted rate, or in  
11 this case, the approved rate of return from the most recent gas base rate  
12 case.

13 Based upon the Gas NPV Model results, the Company will then determine  
14 what, if any, customer contribution is necessary to cost justify the main extension  
15 desired by the potential customer. A positive or zero NPV investment is cost  
16 justified and requires no additional customer contribution to extend the main.  
17 Similarly, a negative NPV result means that the investment is not cost justified on  
18 its own and will require a customer(s) contribution<sup>1</sup> to justify the project (includes  
19 estimated revenues from current and future customers). If needed, the tool may be  
20 used to calculate C&I minimum usage requirement contracts.

21 **Q. PLEASE DESCRIBE THE KEY INPUTS TO THE GAS NPV TOOL**  
22 **CALCULATION.**

23 A. The key inputs to the NPV calculation are as follows:

- 1           ○ NAICS/SIC Code of existing utility customers for expected revenue of
- 2                   new business customers;
- 3           ○ Estimated residential revenue per home from Duke Energy Kentucky
- 4                   revenue reports;
- 5           ○ Estimated customer conversion rates for main extensions;
- 6           ○ Pipe size;
- 7           ○ Estimate footage; and
- 8           ○ Estimated costs of pipeline facilities.

9           For a main extension in excess of 100 feet, the Gas NPV Tool will be used to  
10           analyze the construction cost to be incurred to extend service, and factors in the  
11           anticipated future revenue from the individual potential customer once connected,  
12           and the likelihood of future service connections along the proposed extension, to  
13           determine a reasonable initial customer contribution investment, if one is  
14           necessary.

15   **Q.   WILL THE NPV CALCULATION RESULT IN A POTENTIAL**  
16           **CUSTOMER PAYING MORE TO EXTEND THE COMPANY'S GAS**  
17           **MAIN TO ESTABLISH SERVICE?**

18   **A.**   No. In fact, the intent is just the opposite. The net result of this new process is that  
19           potential customers will continue to receive the minimum 100 feet of main  
20           extension at no charge, and could even qualify for additional extension length at a  
21           reduced or no additional charge. In other words, for extensions of 100 feet or less,  
22           there would be no change to the current tariffed process. For extensions longer  
23           than 100 feet, Duke Energy Kentucky's proposal would allow an additional

1 method by which the potential customer could receive a line extension in excess  
2 of 100 feet at a lesser or no charge, by advancing credit for future connections  
3 upfront, providing the new extension is cost-justified under the NPV Tool.

4 **Q. ARE YOU AWARE OF ANY OTHER NATURAL GAS UTILITIES USING**  
5 **THE SAME OR A SIMILAR NPV CALCULATION TO JUSTIFY MAIN**  
6 **EXTENSIONS?**

7 A. Yes. Duke Energy Kentucky's parent, Duke Energy Ohio, Inc., has been using a  
8 nearly identical analysis process. This methodology has proven to provide greater  
9 access for customers wishing to establish natural gas service by making it more  
10 affordable.

11 **Q. HAS THE COMPANY EXPERIENCED ANY POTENTIAL NATURAL**  
12 **GAS CUSTOMERS DECIDE TO DECLINE NATURAL GAS SERVICE**  
13 **BECAUSE OF THE CURRENT TARIFFED PROCESS?**

14 A. Yes. Duke Energy Kentucky has had numerous inquiries by customers who wish  
15 to connect to natural gas service in order to meet their overall energy needs and  
16 better manage costs. The existing tariff extension policy has made such  
17 connections difficult for those customers to afford to connect resulting in many  
18 customers ultimately declining the investment.

19 **Q. PLEASE EXPLAIN WHAT WAIVERS DUKE ENERGY KENTUCKY IS**  
20 **REQUESTING IN THIS PROCEEDING.**

21 A. Duke Energy Kentucky is seeking a waiver of 807 KAR 5:022, Section 9(16),  
22 which contains the current policy where customers receive the initial 100 feet of  
23 an extension for free and must pay the remainder of the extension costs. While

1 admittedly, this regulation allows the Company to provide extensions as a special  
2 contract arrangement under different terms with the Commission's approval, the  
3 Company wishes to establish an alternative tariffed policy as a standard offering  
4 to customers, which, as I understand, may require a waiver of the standard 100  
5 feet extension provided by rule.

**III. CONCLUSION**

- 6 **Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**  
7 **A. Yes.**





**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

The Application of Duke Energy Kentucky, )  
Inc., for Approval to Amend Its Gas Main )  
Extension Tariff Pursuant to 807 KAR ) Case No. 2016-00298  
5:022, Section 9(16)(d) )

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**DIRECT TESTIMONY OF**  
**JAMES E. ZIOLKOWSKI**  
**ON BEHALF OF**  
**DUKE ENERGY KENTUCKY, INC.**

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August 29, 2016

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**I. INTRODUCTION AND PURPOSE**

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

A. My name is James E. Ziolkowski, and my business address is 139 East Fourth Street, Cincinnati, Ohio 45202.

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

A. I am employed by Duke Energy Business Services LLC (DEBS) as Director Rates & Regulatory Planning. DEBS provides various administrative and other services to Duke Energy Kentucky, Inc., (Duke Energy Kentucky) and other affiliated companies of Duke Energy Corporation (Duke Energy).

**Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.**

A. I received a Bachelor of Science degree in Mechanical Engineering from the U.S. Naval Academy in 1979 and a Master of Business Administration degree from Miami University in 1988. I am also a licensed Professional Engineer in the state of Ohio. I received certification as a Chartered Industrial Gas Consultant in 1994 from the Institute of Gas Technology and the American Gas Association. I have attended the EUCI Cost of Service seminar.

After graduating from the Naval Academy, I attended the Naval Nuclear Power School and other follow-on schools. I served as a nuclear-trained officer on various ships in the U.S. Navy through 1986. From 1988 through 1990, I worked for Mobil Oil Corporation as a Marine Marketing Representative in the New York City area.

I joined The Cincinnati Gas & Electric Company (now Duke Energy

1 Ohio) in 1990 as a Product Applications Engineer, in which capacity I designed  
2 and managed some of Duke Energy Ohio's demand side management programs,  
3 including Energy Audits and Interruptible Rates. From 1996 until 1998, I was an  
4 Account Engineer and worked with large customers to resolve various service-  
5 related issues, particularly in the areas of billing, metering, and demand  
6 management. In 1998, I joined the Rate Department, where I focused on rate  
7 design and tariff administration. I was significantly involved with the unbundling  
8 and design of Duke Energy Ohio's retail electric rates. I was appointed to my  
9 current position in January 2013.

10 **Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AS DIRECTOR,**  
11 **RATES & REGULATORY PLANNING.**

12 A. As Director Rates & Regulatory Planning, I am responsible for cost of service  
13 studies, tariff administration, billing, and revenue reporting issues in Ohio and  
14 Kentucky. I also prepare filings to modify charges and terms in Duke Energy  
15 Ohio, Inc.'s (Duke Energy Ohio) and Duke Energy Kentucky's retail tariffs and  
16 develop rates for new services. During major rate cases, I prepare the cost of  
17 service study and assist with the design of the new base rates. Additionally, I  
18 frequently work with Duke Energy Ohio's and Duke Energy Kentucky's customer  
19 contact and billing personnel to answer rate-related questions, and to apply the  
20 retail tariffs to specific situations. Occasionally, I meet with customers and  
21 Company representatives to explain rates or provide rate training. I also prepare  
22 reports that are required by regulatory authorities.

1 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE KENTUCKY**  
2 **PUBLIC SERVICE COMMISSION?**

3 A. Yes. I last provided testimony on behalf of the Company in Case No. 2009-00202,  
4 Duke Energy Kentucky's last base natural gas rate proceeding.

5 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**  
6 **PROCEEDING?**

7 A. The purpose of my testimony is to describe the history of Duke Energy  
8 Kentucky's current Gas Main Extension tariff and the Company's proposed  
9 changes to the tariff. I will also discuss how the proposed changes to Rider X will  
10 impact gas rate base and retail gas rates. Finally, I sponsor Exhibits 1, 2 and 3 to  
11 the Company's Application.

## II. GAS MAIN EXTENSION PROPOSAL

12 **Q. PLEASE DESCRIBE DUKE ENERGY KENTUCKY'S CURRENT RIDER**  
13 **X TARIFF.**

14 A. Rider X, Main Extension Policy, Second Revised Sheet No. 60, describes Duke  
15 Energy Kentucky's current gas main extension policy.

16 **Q. PLEASE SUMMARIZE THIS POLICY AS IT EXISTS TODAY.**

17 A. The current policy is simply that any customer wishing to establish natural gas  
18 service that will require the Company to extend an existing natural gas main will  
19 have to pay any and all costs required to extend the natural gas main in excess of  
20 the first 100 feet of the extension.

21 **Q. PLEASE DESCRIBE THE PROPOSED CHANGES TO RIDER X.**



1 A. The proposed change to Rider X is to provide an additional rationale for line  
2 extensions to make natural gas connections more affordable to potential  
3 customers. The new rationale is in the form of a calculation that factors in other  
4 potential extensions and usage to justify an extension on a future revenue basis  
5 discounted to a net present value (NPV Tool). The NPV Tool is then used to  
6 determine what, if any, customer contribution is necessary to revenue-justify the  
7 gas main extension. The Company's proposed changes to its Rider X tariff are  
8 contained in Exhibit 1 to the Company's Application.

9 **Q. DESCRIBE THE NPV TOOL.**

10 A. The proposed Gas NPV Tool calculates the Net Present Value of a gas main  
11 extension. It takes into account the likelihood of nearby property owners to  
12 connect natural gas in the future. The Gas NPV Tool makes the initial natural gas  
13 connection more affordable by providing an upfront credit (versus the current  
14 process with an after-the-fact credit) towards the overall customer contribution  
15 portion of the cost of a gas main extension based upon several factors including:  
16 1) future natural gas consumption; 2) number and likelihood of additional nearby  
17 future conversions based upon existing fuel sources (propane, fuel oil, electric,  
18 etc.); and 3) actual cost to extend the gas main. No up-front payments are  
19 required by the requesting customer if the NPV of the project is zero or positive,  
20 taking into account future revenues and the project cost.

21 **Q. WHAT DISCOUNT RATE WILL BE USED IN THE NPV TOOL?**

22 A. The Company proposes to use the weighted average cost of capital (WACC)  
23 resulting from its most recent gas base case as the discount rate in the NPV tool.

1 The WACC from Case No. 2009-00202, the Company's most recent gas base rate  
2 case, is 7.377%.

3 **Q. HOW DOES THE TOOL WORK? PLEASE PROVIDE A**  
4 **HYPOTHETICAL CALCULATION.**

5 A. As mentioned by Company witness John Hill, the key inputs to the NPV calculation  
6 are as follows:

- 7 ○ NAICS/SIC Code of existing utility customers for expected revenue of
- 8 new business customers;
- 9 ○ Estimated residential revenue per home from Duke Energy Kentucky
- 10 revenue reports;
- 11 ○ Estimated customer conversion rates for main extensions;
- 12 ○ Pipe size;
- 13 ○ Estimated footage;
- 14 ○ Estimated cost of pipeline facilities.

15 To perform an analysis, the model user enters customer and project on the  
16 "Model" tab such as Name, Address, Project ID, and current year. In this  
17 example, I will assume that one residential customer requests natural gas service,  
18 and an eight hundred foot main extension is required to serve the customer.  
19 Under the current tariff, the customer would need to pay the cost of the extension  
20 in excess of 100 feet. This amounts to about \$30,000.

21 Assume that ten propane-served houses could potentially tie into the main  
22 at some point in the future. Under the proposed Rider X, the requesting customer  
23 would not have to make an up-front payment, because the NPV of the main

1 extension, including the ten other houses, would be \$2,200. The Company would  
2 extend the gas main at its cost, and at some point in the future the propane-served  
3 houses would likely connect to the main. In the long run, the main would be cost-  
4 justified. The revenues from the eleven customers taking service from the  
5 extension would help to cover the Company's fixed costs and potentially delay  
6 the need for a base rate increase.

7 **Q. HOW WILL CUSTOMER CONTRIBUTIONS BE TREATED UNDER**  
8 **THE PROPOSED REVISIONS TO RIDER X?**

9 A. Any customer contribution that is required to revenue justify the length of the gas  
10 main extension will be accounted for as a customer aid in construction, the same  
11 manner as a customer contribution is treated today. The goal is simply to reduce  
12 the necessary upfront customer contribution that is required for extensions that are  
13 greater than 100 feet in a way that is transparent, just, reasonable, and consistent.

14 **Q. HOW WILL THE PROPOSED CHANGE TO RIDER X AFFECT RETAIL**  
15 **BASE RATES?**

16 A. The change to Rider X will not immediately affect retail base rates. In a future  
17 rate case, new base rates will be established by the Commission consistent with  
18 normal ratemaking principles. Gas mains that are revenue justified and installed  
19 under Rider X will be included in rate base, subject to normal review of the  
20 Commission.

21 **Q. WHY IS USING THE NPV TOOL TO REVENUE JUSTIFY GAS MAIN**  
22 **EXTENSIONS IN EXCESS OF 100 FEET REASONABLE?**

1 A. As I previously stated, the purpose of the Rider X revision is to make natural gas  
2 connections more affordable to customer by reducing the upfront customer  
3 investment requirement. To the extent the Company's customer base grows, so  
4 too will the allocation of system costs among all customers grow. In simple math,  
5 the greater the number of customers in a class, the lesser the cost per customer, all  
6 else being equal.

7 **Q. PLEASE DESCRIBE THE THREE EXHIBITS THAT YOU ARE**  
8 **SUPPORTING.**

9 A. Exhibit 1 is a copy of the current Rider X showing the proposed changes in a  
10 redlined or tracked changes format. Exhibit 2 is a proposed final or "clean" copy  
11 of the Rider X. Exhibit 3 is a narrative summary of the changes being proposed to  
12 the Rider X.

### **III. CONCLUSION**

13 **Q. WERE EXHIBITS 1, 2, AND 3 PREPARED BY YOU OR UNDER YOUR**  
14 **DIRECTION AND SUPERVISION?**

15 A. Yes.

16 **Q. IS THE INFORMATION CONTAINED IN THOSE SCHEDULES**  
17 **ACCURATE TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?**

18 A. Yes.

19 **Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

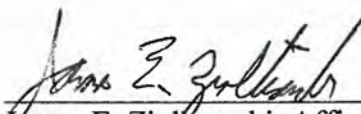
20 A. Yes.



**VERIFICATION**

**STATE OF OHIO** )  
 ) **SS:**  
**COUNTY OF HAMILTON** )

The undersigned, James E. Ziolkowski, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing testimony and they are true and correct to the best of his knowledge, information, and belief.

  
James E. Ziolkowski, Affiant

Subscribed and sworn to before me by James E. Ziolkowski on this 29<sup>th</sup> day of August, 2016.

**ADELE M. FRISCH**  
Notary Public, State of Ohio  
My Commission Expires 01-05-2019

  
NOTARY PUBLIC

My Commission Expires: 1/5/2019