OCC EXHIBIT NO. ______

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Suburban Natural Gas Company for an Increase in Gas Distribution Rates.	)))	Case No. 18-1205-GA-AIR
In the Matter of the Application of Suburban Natural Gas Company for Tariff Approval.	)))	Case No. 18-1206-GA-ATA
In the Matter of the Application of Suburban Natural Gas Company for Approval of Certain Accounting Authority.	)))	Case No. 18-1207-GA-AAM

DIRECT TESTIMONY
OF
DANIEL J. DUANN, Ph.D.

On Behalf of
The Office of the Ohio Consumers' Counsel
65 East State Street, 7th Floor
Columbus, Ohio 43215

March 8, 2019

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LIST OF ATTACHMENTS

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION.

A1. My name is Daniel J. Duann. My business address is 65 East State Street, 7th Floor, Columbus, Ohio, 43215-4213. I am the Assistant Director of Analytical Services with the Office of the Ohio Consumers' Counsel ("OCC").

Q2. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND.

A2. I joined OCC in January 2008 as a Senior Regulatory Analyst. I was promoted to the position of Principal Regulatory Analyst in November 2011 and to my current position in June 2018. My primary responsibility is to assist OCC by participating in proceedings before the Public Utilities Commission of Ohio ("PUCO"). These proceedings include rate cases, cost of capital, fuel adjustment clause, standard service offer, and other types of cases filed by Ohio's electric, gas, and water utilities.

Prior to joining OCC, I was a Utility Examiner II in the Forecasting Section of the Ohio Division of Energy, Ohio Department of Development from 1983 to 1985. The Forecasting Section was later transferred to the PUCO. From 1985 to 1986, I was an Economist with the Center of Health Policy Research at the American Medical Association in Chicago. In late 1986, I joined the Illinois Commerce Commission as a Senior Economist at its Policy Analysis and Research Division. From 1987 to 1995, I was employed as a Senior Institute Economist at the National Regulatory Research Institute

("NRRI") at The Ohio State University. NRRI has been a policy research center funded by the National Association of Regulatory Utility Commissioners and state public utilities commissions since 1976. NRRI is currently located in Washington, DC and is no longer a part of The Ohio State University. My work at NRRI involved research, authoring publications, and public services in many areas of utility regulation and energy policy. I was an independent consultant from 1996 to 2007.

I received my Ph.D. degree in Public Policy Analysis from the Wharton School, University of Pennsylvania in 1984. I also have an M.S. degree in Energy Management and Policy from the University of Pennsylvania, and an M.A. degree in Economics from the University of Kansas. I completed my undergraduate study in Business Administration at the National Taiwan University, Taiwan, Republic of China in 1977. I have been a Certified Rate of Return Analyst by the Society of Utility and Regulatory Financial Analysts since 2011.

Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY OR TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?

A3. Yes. I have submitted expert testimony or testified on behalf of the OCC before the PUCO in numerous cases. A list of these cases is included in Attachment DJD-1.

Q4. HAVE YOU PREVIOUSLY TESTIFIED BEFORE OTHER REGULATORY AGENCIES AND LEGISLATURES?

A4. Yes. I have testified before the Illinois Commerce Commission in 1987 regarding the proposed divestiture of three nuclear power plants by Commonwealth Edison Company. I also testified before the California State Legislature (specifically, the Senate Committee on Energy and Public Utilities) in 1989 regarding proposed legislation banning "sweetheart deals" between electric utilities and their non-regulated affiliates (SB 769).

Q5. HAVE YOU PREVIOUSLY PUBLISHED OR PRESENTED IN ACADEMIC JOURNALS, TRADE PUBLICATIONS, AND PROFESSIONAL CONFERENCES?

A5. Yes. I have published and presented in many academic journals, trade publications, and professional conferences on issues related to public utility regulation, energy policy, and alternative energy. These publications and presentations are listed in Attachment DJD-2.

II. PURPOSE AND RECOMMENDATION

Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A6. My testimony explains and supports three OCC Objections (OCC Objections 1 to 3) to the rate of return analysis in the Staff Report ("Staff Report") filed on February 6, 2019 in this proceeding.[1] My testimony will also explain and support OCC's recommendation

[1] PUCO Case No. 18-1205-GA-AIR, A report by the Staff of the Public Utilities Commission of Ohio (Feb. 6, 2019).

for a just and reasonable rate of return to be used in setting the rates for base distribution service and related riders.

Q7. PLEASE SUMMARIZE YOUR RECOMMENDATION?

A7. I recommend that the PUCO adopt OCC's Objections 1 to 3 to the Staff Report. The PUCO should reject the Staff Report's recommended rate of return ("ROR") of 7.22% for Suburban Natural Gas Company ("Suburban") as unjust and unreasonable. I recommend that the PUCO adopt a cost of equity or a return on common equity ("ROE") for Suburban that is no higher than 9.59% and a rate of return that is no higher than 6.95% in order to protect its customers from paying unjust and unreasonable rates.

III. THE RATE OF RETURN ANALYSIS IN THE STAFF REPORT IS FLAWED AND UNREASONABLE

Q8. WHAT ARE THE REGULATORY PRINCIPLES COMMONLY USED IN SETTING A REASONABLE RATE OF RETURN FOR A REGULATED UTILITY SUCH AS SUBURBAN?

A8. Based on my experience and knowledge, the regulatory principles in setting a reasonable rate of return (and its associated components such as return on equity, cost of debt, and capital structure) for a regulated utility in the United States are well established and recognized. There is widespread agreement regarding these fundamental regulatory principles.

These fundamental regulatory principles, based on my understanding, are summarized here:

(1) The resulting rates (as set based on the authorized rate of return) paid by the customers of the regulated utility should be just and reasonable;

(2) The regulated utility should have funds available to continue its normal course of business;

(3) The regulated utility should have access to capital (both equity and debt) at a reasonable cost under current market conditions; and

(4) The shareholders of the regulated utility should be provided the opportunity (not a guarantee) to earn a fair (but not excessive) return on their invested capital in comparison to other investments available.

Q9. PLEASE SUMMARIZE THE RATE OF RETURN ANALYSIS IN THE STAFF REPORT.

A9. The PUCO Staff adopted the capital structure (52.25% debt and 47.75% equity) proposed by Suburban.[2] Staff also adopted the cost of debt (4.53%) proposed by Suburban.[3] The PUCO Staff believed, for various reasons, it was unable to use the traditional methods of Discounted Cash Flow ("DCF") or Capital Asset Pricing Model ("CAPM") to calculate

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[2] Staff Report at 16.

[3] Id.

the cost of equity of Suburban.[4] Instead, the PUCO Staff used "a simple 20-year average of the return on equities granted for gas distribution companies in the United States for companies with rate bases under $100 million" as the baseline mid-point return on equity (10.16%) for Suburban.[5] When applying this return on equity to the adopted capital structure and cost of debt discussed above, the resulting mid-point rate of return is 7.22%.[6] Staff also believed that a 50 basis point range of reasonableness was appropriate and recommended a range of rate of return of 6.72% to 7.72%.[7]

Q10. DO YOU HAVE ANY OBJECTION TO THE STAFF'S DECISION TO ADOPT THE CAPITAL STRUCTURE AND COST OF DEBT THAT SUBURBAN PROPOSED?

A10. No.

Q11. DO YOU HAVE ANY OBJECTION TO THE STAFF'S DECISION TO NOT APPLY THE DISCOUNTED CASH FLOW OR THE CAPITAL ASSET PRICING MODEL IN ESTIMATING THE COST OF EQUITY OF SUBURBAN?

A11. No. I do not object to the Staff's approach of not using the DCF or the CAPM in estimating the cost of equity of Suburban. However, I do not necessarily agree with the reasons cited by the Staff for doing so.[8]

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[4] Id.

[5] Staff Report at 16.

[6] Id.

[7] Id.

[8] *Id*.

Q12. PLEASE SUMMARIZE YOUR OBJECTIONS REGARDING THE RATE OF RETURN ANALYSIS IN THE STAFF REPORT.

A12. Even though I do not object to certain aspects of the rate of return analysis by the PUCO Staff, the rate of return analysis in the Staff Report is flawed, and the recommended rate of return is excessively high and unreasonable. Specifically, I object to the Staff Report's use of the 20-year average of the returns on equity granted for gas distribution companies in the United States with rate bases under $100 million as a proxy for Suburban's current cost of common equity. I also object to the Staff Report's recommended mid-point rate of return of 7.22%, which was derived from the excessively and unreasonably high ROE of 10.16%. Additionally, I object to the Staff Report's recommended rate of return range of 6.72% to 7.72%, which was incorrectly applied even using the Staff Report's own standard of a 50-basis point range of reasonableness.

Q13. PLEASE EXPLAIN OCC OBJECTION 1.

A13. Staff proposes the use of a 20-year average of the returns on equity ("ROEs") granted to United States gas distribution companies with rate bases under $100 million. But that is neither a valid nor reasonable indicator for the *current* cost of common equity for Suburban. The average of the ROEs granted for regulated utilities over the last 20 years bears little, if any, relationship to the cost of equity of regulated utilities under current financial market and economic conditions. The yearly averages of the ROEs granted over the last 20 years have varied considerably, and the average ROE over such a long period of time will be a poor proxy of the current cost of equity for a regulated utility. For example, according to S&P Global Market Intelligence, the yearly average ROEs for gas utilities for the time period of 1998 to 2018 range from 11.51% (in 1998) to 9.54% (in 2016).[9]

Q14. DOES THE STAFF REPORT'S USE OF THE 20-YEAR AVERAGE ROE VIOLATE WELL-ESTABLISHED REGULATORY PRINCIPLES?

A14. Yes. The use of the simple 20-year average of ROEs granted for United States gas distribution companies as a proxy for the current cost of equity for Suburban violates the fundamental and well-established regulatory principles of setting rates of return based on current market conditions and business and financial risks facing the regulated utilities. Specifically, in the case of *Bluefield Water Works v. Public Service Comm'n,* 262 U.S. 679 (1923), the U.S. Supreme Court ruled that:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public **equal to that generally being made at the same time** and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economic management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. **A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally**. (emphasis added)

[9] See S&P Global Market Intelligence, *RRA Regulatory Focus Major Rate Case Decisions – January -December 2018* (January 31, 2019) at 7.

As discussed earlier, the ROEs granted over the 20-year period have varied with the changes in financial market and economic conditions. The 11.51% ROE granted in 1998 might have been reasonable at that time, but it would certainly be considered excessive and unreasonable in 2016 (when the yearly average ROE was only 9.54%), or in any other years after 2011 (when the yearly average ROEs fell below 10%).[10] Consequently, there is simply no rational basis for the Staff Report's proposal of equating the average of ROEs granted over the last 20 years to the current cost of equity for a regulated utility.

Q15. HAS THE PUCO OR ANY OTHER REGULATORY AGENCY USED AN AVERAGE OF RETURNS ON EQUITY GRANTED OVER THE LAST 20 YEARS IN SETTING THE ROE FOR A REGULATED GAS UTILITY?

A15. No. I am not aware of any such instances in Ohio or in any other jurisdiction.

Q16. HAS THE PUCO STAFF EVER USED THE 20-YEAR AVERAGE ROE AS THE RECOMMENDED ROE IN ITS STAFF REPORT FOR A GAS RATE CASE?

A16. No. Based on my review of the numerous Staff Reports of rate case proceedings in Ohio, I have not found any such instances.

[10] See S&P Global Market Intelligence, *RRA Regulatory Focus Major Rate Case Decisions – January -December 2018* (January 31, 2019) at 7.

Q17. ARE YOU AWARE OF ANY FINANCIAL ANALYST OR ECONOMIST WHO HAS PROPOSED OR USED A 20-YEAR AVERAGE ROE IN THE RATE OF RETURN ANALYSIS?

A17. No. I am not aware of any financial analyst or economist, other than those who prepared the Staff Report in this case, that has proposed or used the 20-year average ROE as a proxy for the current cost of equity.

Q18. DO YOU AGREE WITH THE STAFF REPORT'S ASSERTION THAT "USING THE $100 MILLION THRESHOLD SHOULD CAPTURE ANY SIZE PREMIUM THAT REGULATORS EMPLOYED IN GRANTING RETURN ON EQUITY"?

A18. No. As discussed earlier, using a simple 20-year average ROE as a proxy for the cost of equity under current market and economic conditions is unreasonable. Furthermore, even if such an approach were used, the Staff Report unreasonably and unnecessarily used a $100 million rate base threshold to select the companies for calculating the average ROE.

Q19. IS IT NECESSARY TO USE A SIZE PREMIUM FOR SMALL REGULATED UTILITIES?

A19. No. The so-called size premium, as used by certain financial analysts, typically refers to the theory that a small regulated utility should have a higher ROE because it is purportedly riskier to operate a small regulated utility than to operate a large regulated utility. However, I have not seen any empirical or theoretical evidence to suggest that operating small gas utilities is any riskier than operating larger gas utilities in general. The operational and financial risks of regulated utilities are affected by many other factors other than their size. Based on my experience and knowledge, there is no reason to apply the so-called size-premium to small regulated gas utilities.

Q20. HAS THE PUCO OR THE PUCO STAFF CONSIDERED OR GRANTED A SIZE PREMIUM IN SETTING THE RATES OF RETURN FOR REGULATED UTILITIES OR REGULATED GAS UTILITIES IN OHIO?

A20. No. Based on my review of and participation in numerous rate cases in the past, neither the PUCO Staff nor the PUCO has used or granted the so-called size premium in setting a rate of return. There is also no indication that other regulatory agencies generally consider or grant size-premiums in setting the ROEs of regulated gas utilities.

Q21. PLEASE EXPLAIN OCC OBJECTION 2.

A21. The Staff Report's recommended mid-point rate of return of 7.22% is excessive because it is derived from the unreasonably high 10.16% ROE recommended in the Staff Report.[11] As discussed earlier, the Staff Report's ROE recommendation of 10.16% is based on unreasonable methodologies and data used in the rate of return analysis. Thus, the proposed rate of return in the Staff Report is also unreasonably high and would result in Suburban's customers paying unjust and unreasonable rates.

[11] Staff Report at 16.

Q22. PLEASE EXPLAIN OCC OBJECTION 3.

A22. The Staff Report's recommended rate of return range of 6.72% to 7.72%[12] is unreasonable for three reasons. First, the 6.72% to 7.72% range is derived from the Staff Report's proposed mid-point rate of return of 7.22%, which, as I previously testified, is unreasonably high. Second, this proposed range actually reflects a range of reasonableness of 100 basis points (100 basis points = 7.72% - 6.72%), even though the Staff Report states that the range of reasonableness is 50 basis points.[13] Using a range of 100 basis points of reasonableness is inconsistent with the approximate 50 basis point range of reasonableness commonly recommended by the PUCO Staff in many previous rate cases where a range of reasonableness was proposed. The Staff Report did not provide any explanation for the doubling of the range of reasonableness for the rate of return in this case.

Third, if the highest rate of return in the range (7.72%) were adopted, it would reflect an ROE of 11.21% for Suburban based on the proposed capital structure and cost of debt.[14] Such a high ROE is clearly unjust and unreasonable under current market and economic conditions. Therefore, the 7.72% rate of return should be considered as outside the range of reasonableness, and the rate of return range of 6.72% to 7.72% is likewise unreasonable and should be rejected.

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[12] Staff Report at 16-17.

[13] Staff Report at 17.

[14] 11.21% = (7.72% - (4.53% * 0.5225)) /0.4775

IV. A RATE OF RETURN OF 6.95% IS REASONABLE AND FAIR FOR SUBURBAN'S CUSTOMERS AND SHAREHOLDERS

Q23. PLEASE EXPLAIN OCC'S RECOMMENDED RETURN ON EQUITY FOR SUBURBAN.

A23. Based on the OCC objections discussed above, and in the absence of a direct estimate of Suburban's ROE calculated through the Discounted Cash Flow and the Capital Asset Pricing Model analysis, I propose to use the average of the ROEs granted for gas distribution utilities nationwide in 2018 as the baseline ROE for Suburban in this proceeding. Based on the rate case data compiled by S&P Global Market Intelligence, the average ROE granted in 40 gas utilities' rate cases in 2018 nationwide was 9.59%.[15] In proposing a reasonable ROE for Suburban in this case, I also considered other factors such as the average ROE granted in each quarter of 2018 and 2017 nationwide, and the ROEs granted in recent rate cases or related proceedings by the PUCO. Based on my analyses, I conclude that 9.59% is a reasonable ROE for Suburban.

Q24. CAN YOU ELABORATE MORE ON WHY YOU USE THE MOST RECENT YEARLY AVERAGE ROE GRANTED AS A PROXY FOR ESTIMATING THE CURRENT ROE OF SUBURBAN?

A24. Yes. As discussed earlier, one of the fundamental principles in setting a reasonable ROE for a regulated utility is to set it so that an ordinary investor can earn a return from

[15] See S&P Global Market Intelligence, *RRA Regulatory Focus Major Rate Case Decisions – January -December 2018* (January 31, 2019) at 7.

investing in the regulated utility comparable to the returns he or she would expect to earn from other investments with similar risk. If a comparable ROE is authorized by the regulatory agency, the regulated utility has an opportunity to attract capital on reasonable terms, to maintain its financial integrity, and to have funds available to conduct its normal business of providing utility services. In this regard, the average ROE authorized nationwide in the most recent year can be used as a reasonable proxy for the opportunity cost to an investor (or owner) of Suburban. At the same time, the average ROE authorized in the most recent year can also be considered a useful "yardstick" in determining if an ROE is reasonable for Suburban's consumers to pay.

In addition, some financial analysts have advocated for the use of the authorized ROEs of comparable utilities in setting a reasonable ROE for a regulated utility.[16] Therefore, in setting a reasonable ROE for Suburban in this proceeding, the PUCO may properly consider the average of ROEs and rates of return approved in rate cases for distribution-only gas utilities in other jurisdictions.

The use of the average ROE granted in the most recent year is not the only way of estimating the ROE of a regulated utility. In certain instances, the use of a comparable group of companies and the application of the DCF or the CAPM analysis to directly estimate the ROE of a regulated utility is still considered by some financial analysts to be the preferred approach. However, in this proceeding, both Suburban and the PUCO Staff

[16] PUCO Case No. 12-1682-EL-AIR *et al.*, Supplemental Direct Testimony of Roger A. Morin at 3.

decided not to use the DCF or the CAPM analysis to directly estimate Suburban's ROE. It would be difficult to compare the results of a direct ROE estimate obtained in my analysis with the results of the Staff Report and Suburban's Application. I instead used the 2018 average ROE for gas utilities nationwide as the baseline ROE for Suburban in this proceeding. My approach is reasonable and should be adopted by the PUCO.

Q25. PLEASE EXPLAIN OCC'S RECOMMENDED RATE OF RETURN FOR SUBURBAN.

A25. If OCC's proposed ROE were adopted and applied to the capital structure (52.25% debt and 47.75% equity) and cost of debt (4.53%), the overall rate of return for Suburban would be 6.95%.

6.95% = (0.5225 * 4.53%) + (0.4775 * 9.59%).

This 6.95% is OCC's recommended rate of return for Suburban in this proceeding.

V. CONCLUSION

Q26. PLEASE SUMMARIZE YOUR RECOMMENDATION.

A26. I recommend the PUCO adopt OCC's Objections and proposed adjustments regarding the rate of return analysis in the Staff Report. The PUCO should set an after-tax rate of return of no higher than 6.95% and a ROE of no higher than 9.59% for Suburban.

Q27. DOES THIS CONCLUDE YOUR TESTIMONY?

A27. Yes. However, I reserve the right to supplement my testimony if additional testimony is filed, or if new information or data in connection with this proceeding becomes available.

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing *Direct Testimony of Daniel J. Duann, Ph.D. on behalf of the Office of the Ohio Consumers' Counsel* has been served upon those persons listed below via electronic service this 8th day of March 2019.

/s/ Christopher Healey
Christopher Healey
Counsel of Record

SERVICE LIST

robert.eubanks@ohioattorneygeneral.gov
werner.margard@ohioattorneygeneral.gov
cmooney@opae.org

Attorney Examiners:
Sarah.parrot@puc.state.oh.us
Anna.sanyal@puc.state.oh.us

bojko@carpenterlipps.com
see@carpenterlipps.com
dressel@carpenterlipps.com

Daniel J. Duann, Ph.D.
List of Testimonies Filed Before PUCO

1. *Application of The Dayton Power and Light Company for Approval of Its Electric Security Plan*, Case No. 08-1094-EL-SSO (January 26, 2009).

2. *Application of Ohio American Water Company to Increase Its Rates for Water and Sewer Service Provided to Its Entire Service Area*, Case No. 09-391-WS-AIR (January 4,2010).

3. *Application of Aqua Ohio, Inc. for Authority to Increase its Rates and Charges in its Masury Division*, Case No. 09-560-WW-AIR (February 22, 2010).

4. *Application of Aqua Ohio, Inc. for Authority to increase its Rates and Charges in its Lake Erie Division*, Case No. 09-1044-WW-AIR (June 21, 2010).

5. *In the Matter of the Fuel Adjustment Clauses for Columbus Southern Power Company and AEP Company*, Case Nos. 09-872-EL-FAC and 09-873-EL-FAC (August 16, 2010).

6. *In the Matter of the Application of Columbus Southern Power Company for Approval of an Electric Security Plan; an Amendment to its Corporate Separation Plan; and the Sale or Transfer of Certain Generating Asset (Remand)*, Case Nos. 08-917-EL-SSO et al (June 30, 2011).

7. *In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of Tariffs to Modify and further Accelerate its Pipeline Infrastructure Replacement Program and to Recover the Associated Costs et al.*, Case Nos. 11-2401-GA-ALT and 08-169-GA-ALT (July 15, 2011).

8. *In the Matter of the Application of Columbus Southern Power Company and AEP Company for Authority to Establish a Standard Service Offer Pursuant to 4928.143, Ohio Rev. Code in the Form of an Electric Security Plan (ESP)*, Case Nos. 11-346-EL-SSO, et al (July 25, 2011).

9. *In the Matter of the Application of Columbus Southern Power Company and AEP Company for Authority to Merge and Related Approval (ESP Stipulation)*, Case Nos. 10-2376-EL-UNC, et al (September 27, 2011).

10. *In the Matter of the 2010 Annual Filing of Columbus Southern Power Company and AEP Company Required by Rule 4901:1-35-10, Ohio Administrative Code*, Case Nos. 11-4571-EL-UNC and 11-4572-EL-UNC (October 12, 2011).

11. *In the Matter of the Application of Ohio American Water Company to Increase Its Rates for Water and Sewer Service Provided to Its Entire Service Area*, Case No. 11-4161-WS-AIR (March 1, 2012).

12. *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to 4928.143, Ohio Rev. Code in the Form of an Electric Security Plan (Modified ESP),* Case Nos. 11-346-EL-SSO, et al (May 4, 2012).

13. *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company For Authority to Establish a Standard Service Offer Pursuant to R.C. § 4928.143 in the Form Of an Electric Security Plan,* Case No. 12-1230-EL-SSO (May 21, 2012).

14. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates, et al.* Case Nos. 12-1682-EL-AIR (February 19, 2013).

15. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Gas Rates,* Case Nos. 12-1685-GA-AIR, et al (February 25, 2013).

16. *In the Matter of the Application of Dayton Power & Light Company for Authority to Establish a Standard Service Offer in the Form Of an Electric Security Plan Pursuant to R.C. 4928.143*, Case No. 12-426-EL-SSO et al. (March 1, 2013).

17. *In the Matter of the Application of The Dayton Power and Light Company for Authority to Recover of Certain Storm-related Service Restoration Costs,* Case Nos. 12-3062-EL-RDR, et al. (January 31, 2014).

18. *In the Matter of the Application of The Dayton Power and Light Company for Authority to Recover of Certain Storm-related Service Restoration Costs,* Case Nos. 12-3062-EL-RDR, et al. (May 23, 2014).

19. *In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates and Charges for Its Waterworks Service,* Case No. 13-2124-WW-AIR (August 4, 2014).

20. *In the Matter of the Application Seeking Approval of AEP Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Ride,* Case No. 14-1693-EL-RDR, et al. (September 11, 2015).

21. *In the matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan Pursuant to R.C. 4929.05, Revised Code, for an Accelerated Service Line Replacement Program*, Case No. 14-1622-GA-ALT (November 6, 2015).

22. *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.141 in the Form of an Electric Security Plan,* Case No. 14-1297-EL-SSO (June 22, 2016).

23. *In the Matter of the Application of Ohio Power Company for Administration of the Significantly Excessive Earnings Test for 2014 under Section 4928.143 (F), Revised Code, and Rule 4901:1-35-10, Ohio Administrative Code,* Case No. 16-1105-El-UNC (August 15, 2016).

24. *In the Matter of the Application of Ohio Power Company for Administration of the Significantly Excessive Earnings Test for 2014 under Section 4928.143 (F), Revised Code*, *and Rule 4901:1-35-10, Ohio Administrative Code,* Case No. 16-1105-El-UNC (September 19, 2016).

25. *In the Matter of the Application of Aqua Ohio, Inc. for Authority to Increase Its Rates and Charges for Its Waterworks Service.* Case No. 16-0997-WW-AIR (December 19, 2016).

26. *In the Matter of the Application of Ohio Power Company for Administration of the Significantly Excessive Earnings Test for 2016 Under Section 4928.143(F), Revised Code*, *and Rule 4901:1-35-10, Ohio Administrative Code,* Case No. 17-1230-EL-UNC (January 12, 2018).

27. *In the Matter of the Annual Application of Duke Energy Ohio, Inc., for an Adjustment to Rider AMRP Rates.* Case No. 17-2318-GA-AIR (April 5, 2018).

28. *In the Matter of the Application of the Dayton Power and Light Company for an Increase in Electric Distribution Rates.* Case No. 15-1380-EL-AIR (April 11, 2018).

29. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Distribution Rates.* Case No. 17-0032-EL-AIR et al., (June 25, 2018).

Selected Publications of Daniel J. Duann, Ph.D.

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Regulation: The Cato Review of Business &. Government, "Turning up the Heat in the Natural Gas Industry," Vol. 19, 1996, (with Kenneth W. Costello).

Managerial and Decision Economics, "Designing a Preferred Bidding Procedure for Securing Electric Generating Capacity," Vol. 12, 1991.

The Journal of Energy and Development, "Direct Gas Purchases by Local Distribution Companies: Supply Reliability and Cost Implications," Vol. 14,1989.

Public Utilities Fortnightly, "Alternative Searching and Maximum Benefit in Electric Least-Cost Planning," December 21,1989.

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The National Regulatory Research Institute, **Pricing Local Distribution Services in A Competitive Market**, 1995.

Ninth NARUC Biennial Regulatory Information Conference, Ohio State University, **The Unbundling and Restructuring of Local Distribution Services in the Post-636 Gas Market,** 1994.

The National Regulatory Research Institute, **A Survey of Recent State Initiatives on EPACT and FERC Order 636**, 1994 (with Belle Chen).

The National Regulatory Research Institute, **Restructuring Local Distribution Services: Possibilities and Limitations**, 1994.

The National Regulatory Research Institute, **The FERC Restructuring Rule: Implications for Local Distribution Companies and State Public Utilities Commissions**, 1993.

The National Regulatory Research Institute, **A Synopsis of the Energy Policy Act of 1992: New Tasks for State Public Utility Commissions**, 1993.

International Symposium on Energy, Environment & Information Management, Argonne National Laboratory, **Natural Gas Vehicles: Barriers, Potentials, and Government Policies**, 1992.

The National Regulatory Research Institute, **Natural Gas Vehicles and the Role of State**

Public Service Commissions, 1992 (with Youssef Hegazy).

The National Regulatory Research Institute, **Incentive Regulation for Local Gas Distribution Companies under Changing Industry Structure**, 1991 (with Mohammad Harunuzzaman, Kenneth W. Costello, and Sung-Bong Cho).

The National Regulatory Research Institute, **Discussion Papers on Competitive Bidding And Transmission Access and Pricing issues in the Context of Integrated Resource Planning**, 1990 (with Robert E. Bums, Kenneth Rose, Kevin Kelly, and Narayan Rau).

The National Regulatory Research Institute, **Gas Storage: Strategy, Regulation, and Some Competitive Implications**, 1990 (with Peter A. Nagler, Mohammad Harunuzzaman, and Govindarajan lyyuni).

The National Regulatory Research Institute, **State Gas Transportation Policies: An Evaluation of Approaches**, 1989 (with Robert E. Bums and Peter A. Nagler).

The National Regulatory Research Institute, **Direct Gas Purchases by Gas Distribution Companies: Supply Reliability and Cost Implications**, 1989, (with Robert E. Bums and Peter A. Nagler).

The National Regulatory Research Institute, **Competitive Bidding for Electric Generating Capacity: Application and Implementation**, 1988 (with Robert E. Bums, Douglas N. Jones, and Mark Eifert).