*OCC EXHIBIT NO. ______*

**BEFORE**
**THE PUBLIC UTILITIES COMMISSION OF OHIO**

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| In the Matter of the Determination of the Existence of Significantly Excessive Earnings Test for 2017 Under the Electric Security Plans of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company. | ) ) ) ) ) ) | Case No. 18-0857-EL-UNC |

**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 43215-4213*


**October 16, 2018**

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## 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, alternative regulation, fuel adjustment clause, standard service offer, and other types of cases filed by Ohio's electric, gas, and water utilities.

Prior to join 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 Silver Spring, Maryland 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 a number of 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 a 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, authored, and presented in numerous 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.*** The purpose of my testimony is to explain and support a $42 million refund to customers for overearnings resulting from Ohio Edison's Electric Security Plan ("ESP"). In many aspects, the 2008 energy law authorizing ESPs favors utilities and disfavors consumers. The 2008 energy law allows electric utilities to collect excessive earnings from consumers, but protects consumers from *significantly excessive* earnings. My recommendations will protect Ohio Edison consumers from paying too high ESP rates that create significantly excessive earnings for the Utility.

***Q7. PLEASE SUMMARIZE YOUR RECOMMENDATION?***

***A7.*** Based on my review and analysis of the Application and testimonies filed by Ohio Edison and relevant material, I recommend (as explained fully later in my testimony) that the PUCO find that Ohio Edison had significantly excessive earnings in 2017 and order the Utility to refund approximately $42 million to its customers.[1]

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In making this recommendation, I rely upon the following conclusions:

(1) the so-called Distribution Modernization Rider ("Rider DMR") Revenue Net of Tax of $58,518,353[2] collected by Ohio Edison and recorded as net income (earnings) in 2017 should be considered as income for SEET purposes;

(2) the 2017 SEET Return on Equity ("ROE") calculated by Ohio Edison should be revised to 17.39% based on an

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[1] See Table 3 in later part of this testimony for the calculation of the refund.

[2] See Direct Testimony of Jason S. Petrik (May 15, 2018), Schedule JSP-2, Page 1 of 1, Line 3.

OCC-revised SEET Net Income of $184,838,588[3] and an OCC-revised Average Common Equity of $1,062,702,154[4];

(3) the PUCO should adopt a SEET ROE Threshold of 14.91% proposed by OCC,[5] instead of the 19.2% ROE threshold proposed by Ohio Edison[6];

***Q8. PLEASE EXPLAIN THE ANNUAL SEET REVIEW IN OHIO***

***A8.*** Traditionally, utilities were provided the opportunity to earn profits at a level determined to be reasonable for the utility to charge and for monopoly customers to pay. Under S.B. 221 (the 2008 energy law), an electric utility is allowed to charge Ohioans for profits in excess of that reasonable level. The 2008 energy law allows utilities to charge consumers for excessive profits, and only protects consumers from paying profits that are described as "significantly excessive."

It is my understanding that under the law if it is found that a utility has significantly excessive earnings resulting from its electric security plan, the excess earnings are to be returned to customers.[7] Furthermore, the annual profit

[3] $184,838,588 = $126,320,235 + $58,518,353. See Direct Testimony of Petrik, Schedule JSP-2, Page 1 of 1, Line 5 for the 2017 SEET Net Income of $126,320,235.

[4] See Attachment DJD-3, Line 16.

[5] 14.91% = 10.41% + 4.50% where 10.41% is the 2017 per-book average ROE of 25 publicly-traded companies in a comparable group and the 4.50% is an adder proposed by OCC in setting the SEET ROE threshold.

[6] See Direct Testimony of Joanne M. Savage (May 15, 2018) at 5.

[7] See R.C. 4928.143(F). Specifically, (if a utility's ESP resulted in "significantly excessive earnings," the PUCO "shall require the electric distribution utility to return to customers the amount of the excess by prospective adjustments").

review examines the totality ("in the aggregate") of the earnings of the electric distribution utility related to all the rates, riders, and conditions and terms of service approved in an ESP.[8] Any refund ordered by the PUCO is a result of the overall significantly excessive earnings of the electric utility.

## III. CALCULATION OF OHIO EDISON'S 2017 SEET-ADJUSTED NET INCOME, AVERAGE COMMON EQUITY, AND RETURN ON EQUITY

***Q9. WHAT IS OHIO EDISON'S 2017 PER-BOOK (OR GENERALLY ACCEPTED ACCOUNTING PRINCIPLES ("GAAP")) NET INCOME, AVERAGE COMMON EQUITY, AND RETURN ON EQUITY?***

***A9.*** According to the data provided by Ohio Edison, the per-book ("reported" or "GAAP") net income in 2017 was $262,924,574[9] and the per-book average common equity $1,156,051,263.[10] The 2017 per-book ROE for Ohio Edison, as calculated, was 22.74%.[11]

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[8] See R.C. 4928.143 (F). Specifically, (With regard to the provisions that are included in an electric security plan under this section, If the PUCO "finds that such adjustments, in the aggregate, did result in significantly excessive earnings").

[9] See Direct Testimony Petrik, Schedule JSP-2, Page 1 of 1, Line 1. The term "GAAP" used here refers to the "Generally Accepted Accounting Principles", which is commonly defined as a collection of commonly-followed accounting rules and standards for financial reporting in the United States.

[10] Id. Schedule JSP-3, Page 1 of 2, Line 1 and Page 2 of 2, Line 61. The average common equity is typically calculated as the average of the 2016 year-end common equity and the 2017 year-end common equity. $1,156,051,263 = ($1,124,183,742 + $1,187,918,784) / 2.

[11] 22.74% = $262,924,574 / $1,156,051,263.

***Q10. WHAT WERE THE ADJUSTMENTS MADE BY OHIO EDISON IN CALCULATING ITS 2017 SEET-ADJUSTED NET INCOME, AVERAGE COMMON EQUITY, AND RETURN ON EQUITY?***

***A10.*** For SEET purposes, the per-book net income and per-book common equity can be and have been adjusted to adequately reflect the net income and common equity resulting from an approved ESP. In its SEET Application, Ohio Edison proposed three adjustments to its per-book net income in calculating its 2017 SEET-adjusted net income. The three proposed adjustments were: the exclusion of Affiliate Company Earnings; the exclusion of Distribution Modernization Rider Revenue Net of Tax; and the exclusion of Special and Extraordinary Items After - Tax.[12] These net income adjustments for SEET purpose were identified and listed by month in Schedule JSP-3 of the Direct Testimony of Jason S. Petrik.

The three net income adjustments (as reductions) were flowed through the monthly per-book common equity balance to calculate Ohio Edison's monthly SEET-adjusted common equity balances.[13] The 13-month average of these monthly SEET-adjusted common equity balances was then calculated and used to determine the SEET-adjusted return on equity.

[12] See Direct Testimony of Petrik, Schedule JSP-2, Page 1 of 1.

[13] See Direct Testimony of Petrik, Schedule JSP-3, Page 1 of 2 and Page 2 of 2.

***Q11. WHAT WERE THE 2017 SEET-ADJUSTED NET INCOME, AVERAGE COMMON EQUITY, AND RETURN ON EQUITY PROPOSED BY OHIO EDISON?***

***A11.*** By making the three net income adjustments identified above, Ohio Edison has calculated and proposed a 2017 SEET-adjusted net income of $126,320,235 and a 2017 SEET-adjusted average common equity of $1,072,702,232.[14] Ohio Edison, then, calculated and proposed a 2017 SEET-adjusted ROE of 11.8%.

However, there was an error in Ohio Edison's calculation of the 13-month Average Common Equity. By my own calculation, using the same data shown in Schedule JSP-3, the correct amount of the 13-month Average Common Equity should be $1,033,641,759.[15] Thus, a corrected SEET ROE, even accepting the same three adjustments proposed by Ohio Edison, would be 12.22%.[16]

My correction here does not mean that I support Ohio Edison's three adjustments after correction, or that I support using this SEET-adjusted ROE of 12.22% to determine if Ohio Edison had significantly excessive

[14] See Direct Testimony of Petrik, Schedule JSP-1, Page 1 of 1.

[15] See Attachment DJD-3, Line 16.

[16] 12.22% = $126,320,235 / $1,033,641,759.

earnings in 2017. I am merely pointing out an error in the Ohio Edison calculation and correcting the calculations for that error.

***Q12. DO YOU AGREE WITH THE THREE NET INCOME ADJUSTMENTS PROPOSED BY OHIO EDISON?***

***A12.*** No. I do not agree with Ohio Edison's proposed exclusion of Rider DMR Revenue Net of Tax, of approximately $58.5 million, from its per-book net income for SEET purpose. If this exclusion of Rider DMR Revenue Net of Tax is adopted, the protection of utility customers from paying unreasonable and excessive ESP rates, as intended by the General Assembly in enacting the annual SEET review, will be lost or significantly diluted.

***Q13. PLEASE EXPLAIN.***

***A13.*** The so-called Distribution Modernization Rider **i**s a provision of Ohio Edison's current ESP as approved by the PUCO. Under this rider, the Utility does not have to spend even one penny on distribution. Instead the Rider DMR revenues provide credit support for FirstEnergy Corp. OCC and others have appealed the PUCO 's approval of this charge to the Ohio Supreme Court. This Rider DMR revenue was collected by Ohio Edison from its customers in 2017 and has been authorized for at least two more years after 2017, with the potential for Ohio Edison to collect more in years four and five (2020 and 2021).

The Rider DMR revenue was recorded and recognized as net income by Ohio Edison in its 2017 financial statements. The collection of Rider DMR revenue was not a one-time or extraordinary event in 2017. It is real cash collected by Ohio Edison resulting directly from its electric security plan approved by the PUCO in Case No. 14-1297-EL-SSO. Based on my understanding of the SEET legislation and my experience as a regulatory economist, I do not see a valid reason not to consider this Rider DMR revenue of $58.5 million as part of Ohio Edison's 2017 net income for purposes of reviewing the profits of the Utility.

Specifically, if Rider DMR Revenues are excluded, then Ohio Edison's 2017 SEET-adjusted net income would be unreasonably and artificially reduced from approximately $184.8 million to $126.3 million. The resulting 2017 SEET ROE would also be unreasonably reduced from 17.39% to 11.80% (or 12.22% as I have corrected above). This would mean that any potential refund to customers would be gone.

***Q14. WHAT IS YOUR UNDERSTANDING OF THE PUCO'S DECISION REGARDING RIDER DMR REVENUE COLLECTION IN ITS ESP ORDER?***

***A14.*** I am aware that the PUCO, in approving the current ESP, did allow Ohio Edison to exclude Rider DMR revenues from earnings for SEET purposes. But the SEET test is an important consumer protection. It is meant to ensure the public that the ESPs are not setting electricity rates that are too high. The PUCO ruling thwarts a complete review of the utility's earnings under an ESP. It segregates out one portion of the Utility's ESP (the Rider DMR) and treats it differently from all other revenues collected under the utility's ESP. The PUCO has by its ruling deprived customers of refunds they may be otherwise entitled to under the law. This case shows the injustice of the PUCO's ruling in Ohio Edison's ESP decision.

I was advised by counsel that OCC has appealed this issue, among other things, to the Supreme Court of Ohio. It is also my understanding, as an experienced regulatory economist, that the PUCO can modify a prior order provided that the PUCO explains the reasons for the modification and that the new regulatory course is permissible.[17]

***Q15. WHAT WOULD BE OHIO EDISON'S 2017 SEET-ADJUSTED NET INCOME, AVERAGE COMMON EQUITY, AND RETURN ON EQUITY IF RIDER DMR REVENUE NET OF TAX WERE NOT EXCLUDED FOR SEET PURPOSE?***

***A15.*** Ohio Edison collected $58,518,353 net of tax through Rider DMR from its customers in 2017. If this Rider DMR revenue net of tax were not excluded from net income for SEET purpose, this amount of $58,518,353 would be added back to Ohio Edison's proposed 2017 SEET Net Income

[17] See Third Entry on Rehearing, PUCO Case 16-395-EL-SSO et al., (September 19, 2018) at 23.

of $126,320,235. The OCC-revised 2017 SEET Net Income for Ohio Edison would be $184,838,588.[18]

Similarly, by removing the flow through (i.e. reduction) of the monthly collection of DMR revenue net of tax from the monthly balance of SEET-adjusted common equity, the SEET-adjusted 13-month Average Common Equity of Ohio Edison would be revised upward to $1,062,702,154.[19] Based on the OCC-revised SEET Net Income and SEET Average Common Equity, the OCC-revised 2017 SEET ROE for Ohio Edison would be 17.39%.[20] The calculation of the different ROEs is summarized in Table 1.

**Table 1**

**Calculation of 2017 SEET-Adjusted ROEs.**

| | **Net Income** | **Average Common Equity** | **Return on Equity** |
|---|---|---|---|
| **2017 Per-Book** | $262,924,574 | $1,156,051,263 | 22.74% |
| **2017 SEET-Adjusted (by Ohio Edison)** | $126,320,235 | $1,072,702,232 | 11.80% |
| **Corrected 2017 SEET-Adjusted (by Ohio Edison)** | $126,320,235 | $1,033,641,759 | 12.22% |
| **Addition to Net Income for Not Excluding Rider DMR Revenues Net of Tax** | $58,518,353 | n. a. | n. a. |
| **2017 SEET-Adjusted (by OCC)** | $184,838,588 | $1,062,702,154 | 17.39% |

[18] $184,838,588 = $126,320,235 + $58,518,353.

[19] See Attachment DJD-3, Line 16.

[20] 17.39% = $184,838,588 / $1,062,702,154.

## IV. RECOMMENDATION ON OHIO EDISON'S 2017 SEET RETURN ON EQUITY THRESHOLD

***Q16. WHAT IS THE PURPOSE OF A SEET RETURN ON EQUITY ("ROE") THRESHOLD?***

***A16.*** A SEET ROE threshold is the benchmark used by the PUCO in determining if an electric utility, such as Ohio Edison, has significantly excessive earnings in comparison to other publicly-traded companies with similar business and financial risk. If an electric utility, operated under an approved ESP, has a SEET-adjusted ROE that is higher than the SEET ROE threshold, the electric utility is considered to have significantly excessive earnings in that year. That electric utility would be required to refund the amount of earnings above the SEET ROE threshold (grossed up to revenue collection) to its customers.

***Q17. WHAT HAVE BEEN THE METHODS USED BY THE PUCO IN SETTING THE SEET ROE THRESHOLD?***

***A17.*** The Ohio Revised Code does not specify a specific level of ROE as the SEET ROE threshold. The Ohio Revised Code does not prescribe one specific method or several methods in deciding the SEET ROE threshold, either. It is up to the PUCO to set the SEET ROE threshold for an electric utility through the annual SEET review or the ESP proceeding.

In order to implement the annual SEET review as required under the Ohio Revised Code, the PUCO in 2010 has developed a general framework and certain parameters regarding the requirements of the SEET Applications (including the SEET ROE Threshold) to be filed by Ohio electric utilities operating under an ESP.[21] But even with a general framework in place, the PUCO has adopted a variety of different approaches or methods in setting the SEET ROE thresholds in different SEET proceedings in the past.

For a majority of the SEET cases, the PUCO may simply choose or accept a specific level of ROE (such as 12% or 15%) as the SEET ROE thresholds when approving the ESP. In other cases, the SEET ROE thresholds were decided by the PUCO on a case-by-case basis through the annual SEET applications. Typically, the PUCO would first determine the average ROE earned by a comparable group of companies. Then, the PUCO would select an "allowance" or "adder" to be added to the average ROE in deciding the SEET ROE threshold.

The PUCO has generally applied three different approaches in deciding the "allowance" or the "adder" to the average ROE in deciding the annual SEET ROE Threshold. The ROE "adder" could be: (1) a specific number

[21] See PUCO Case No. 09-786-EL-UNC, Finding and Order (June 30, 2010).

such as the 200 basis points "adder" used in deciding the "Safe Harbor" ROE level[22]; (2) a specific percentage of the average ROE used in setting up the SEET ROE Threshold[23]; or (3) a statistics-based approach in selecting an "adder" as the product of a multiplier times the standard deviation of the ROEs earned by companies in the comparable group[24]. The PUCO has not determined in prior SEET proceedings that any one of the three approaches was preferred in deciding the SEET ROE Threshold.

***Q18. WHAT WERE THE TYPICAL SEET ROE THRESHOLDS ADOPTED BY THE PUCO IN THE PAST?***

***A18.*** Based on my understanding of the implementation of the ESPs and the annual SEET reviews for Ohio's major electric utilities, a large majority of the SEET ROE thresholds adopted by the PUCO were within the range of 12% to 15%. For a smaller number of electric utilities, the SEET ROE thresholds were in the range of 15% to 17%.

[22] See PUCO Case No. 09-786-EL-UNC, Finding and Order at 29.

[23] See PUCO Case No. 10-1261-EL-UNC, Opinion and Order (January 11, 2011) at 27.

[24] See PUCO Case No. 11-4571-EL-UNC, Opinion and Order (October 23, 2013) at 27.

***Q19. WHAT IS OHIO EDISON'S PROPOSED 2017 SEET RETURN ON EQUITY THRESHOLD?***

***A19.*** Ohio Edison proposed a SEET ROE Threshold of 19.2% in this proceeding.[25] This proposed ROE threshold is based on the adjusted (non-GAAP) net incomes (or "Net Profit") of comparable companies and the resulting average earned ROE of 12.3%, a standard deviation of 4.2% of the ROEs, and a multiplier of 1.64 (derived from a one-sided confidential level of 95%`) applicable to the standard deviation of the ROEs. The comparable companies selected by Ohio Edison are 26 publicly-traded companies included in the SPDR Select Sector Fund – Utility ("XLU") [26]. Two companies in the XLU, NRG (NRG Energy, Inc.) and AES (The AES Corporation), are excluded in Ohio Edison's analysis due to their non-recurring large impairment losses in 2017.[27]

It should be noted that the "Net Profit" used by Ohio Edison in calculating the average return on equity was not the per-book net income based on generally accepted accounting principles and standards. The "Net Profit" of all the 26 comparable companies were adjusted net incomes generated from Value Line Investment Analyzer.[28]

[25] See Direct Testimony of Joanne M. Savage (May 15, 2018) at 5.

[26] SPDR is a short form name for a Standard & Poor's depositary receipt. It is an exchange-traded fund managed by State Street Global Advisors that tracks the performance of the Standard & Poor's 500 Index (S&P 500).

[27] See Direct Testimony of Savage at Schedule JMS-1, Page 1 of 1.

[28] Id.

***Q20. IS THIS SEET ROE THRESHOLD OF 19.2% REASONABLE IN DETERMINING IF OHIO EDISON HAD SIGNIFICANTLY EXCESSIVE EARNINGS IN 2017?***

***A20.*** No. This 19.2% SEET ROE threshold proposed by Ohio Edison is unreasonable. The PUCO should not adopt this ROE threshold to determine if Ohio Edison had significantly excessive earnings in 2017.

First, this 19.20% ROE threshold itself is exceedingly high and will not provide meaningful protection for utility customers from paying unreasonably high ESP rates. Second, the 12.3% average ROE used by Ohio Edison in deriving the 19.2% SEET ROE Threshold is overstated and unreasonable. Third, the statistics-based approach used by Ohio Edison tends to produce volatile and unreliable standard deviation of ROEs and consequently a SEET ROE threshold for the same electric utility. In response, I will propose and explain later in my testimony a reasonable SEET ROE Threshold of 14.91% to be used in determining if Ohio Edison had significantly excessive earnings in 2017.

***Q21. PLEASE EXPLAIN WHY THE PROPOSED SEET ROE THRESHOLD OF 19.20% ITSELF IS EXCEEDINGLY HIGH AND UNREASONABLE?***

***A21.*** This proposed SEET ROE Threshold of 19.20% itself is exceedingly high in many respects. First, the PUCO has not adopted any SEET ROE thresholds similar to such a high level of ROE. Second, only a few Ohio electric utilities have proposed such a high level of ROE in certain years in prior SEET applications and they have been rejected by the PUCO. Typically, the SEET ROE thresholds proposed by the electric utilities were lower than the 19.20% proposed by Ohio Edison. For example, in its 2016 SEET Application, Ohio Edison proposed a SEET ROE Threshold of 14.80% that was based on an average ROE of 10.20% with a standard deviation of 2.80% from the ROEs of the comparable group of companies.[29] Thirdly, the PUCO Staff has not proposed any SEET ROE Threshold comparable to 19.20% in the past. For example, for the period of 2012 to 2015, the PUCO Staff proposed SEET ROE Thresholds generally in the range of 14% to 15.50% for Ohio Power.

A comparison of the proposed SEET ROE Threshold with other ROE indicators would also show this 19.20 ROE Threshold is simply too high to be reasonable. For example, this SEET ROE Threshold of 19.20% is approximately 83% higher than Ohio Edison's currently authorized return on equity of 10.50% that was set in its most recent rate case ten year ago. The PUCO has explicitly indicated this authorized rate of return was one additional factor that should be considered in deciding if the utility had significantly excessive earnings in a given year.[30]

This proposed 19.20% SEET ROE Threshold would be even much higher (approximately 103.6% higher) in comparison to the average ROE of 9.43% for

[29] See PUCO Case No. 17-0993-EL-UNC, Direct Testimony of Joanne M. Savage, Schedule JMS-1, page 1 of 1.

[30] See PUCO Case No. 09-786-EL-UNC, Finding and Order at 29.

distribution-only electric utilities authorized nationwide in 2017.[31] This proposed SEET ROE Threshold of 19.20% is also approximately 84.4% higher than the 2017 weighted average per-book ROE (10.41%), as calculated by OCC, of the comparable group of 25 companies (excluding AES, NRG, and FirstEnergy Corporation that had significant write-offs or non-GAAP gains in 2017).

If such a high SEET ROE Threshold were adopted, the possibility of finding an electric utility earning a ROE higher than the SEET threshold ROE would be greatly diminished. The customers of the electric utility would be less likely to receive a refund or a credit for paying the very high rates under an approved ESP. In other words, the intended protection for customers associated with the annual SEET review will be reduced or eliminated.

***Q22. PLEASE EXPLAIN WHY THE AVERAGE ROE OF 12.30% USED BY OHIO EDISON IN DEVELOPING ITS SEET ROE THRESHOLD IS OVERSTATED AND UNREASONABLE?***

***A22.*** As discussed earlier, the 12.3% average ROE used by Ohio Edison in developing the SEET ROE Threshold of 19.20% was not based on the per-book (GAPP) net incomes of the comparable companies. Ohio Edison has included various adjustments (by using the Value Line Investment Analyzer) to the per-book net income in deriving the "Net Profit" figures. From the testimony and discovery

[31] See RRA Regulatory Focus: Major Rate Case Decisions 2017 (January 30, 2018) at 7.

responses provided by Ohio Edison, it was not clear what these adjustments consisted or if these adjustments were reasonable or justified.

In addition to using adjusted net incomes, Ohio Edison also excluded two companies (the AES Corporation and NRG Energy) with substantial losses due to impairment charges in 2017 from the comparable group (SPDR Select Sector Fund – Utility) in calculating the average ROE of 12.30%. There are certain advantages and disadvantages in using the adjusted net income figures and the removal of companies with substantial write-offs or other restructuring activities. In some circumstances, these adjustments and removal of certain companies may not be unreasonable. But my review and analysis indicated that the 12.3% average ROE proposed by Ohio Edison was indeed overstated and thus unreasonable to use in determining if Ohio Edison had significantly excessive earnings in 2017.

In evaluating the average ROE of 12.3% proposed by Ohio Edison, I have reviewed additional financial information of the 26 companies selected by Ohio Edison in its calculation. The additional information I reviewed was primarily the 2017 GAAP (per-book) net income and the adjusted (Non-GAAP) net income used by Ohio Power (another electric utility that is also required to file a 2017 SEET Application). The financial data of the 28 comparable companies, as compiled by Ohio Power, is included here as Attachment DJD-4. Based on this additional financial information, I have updated the financial summary data of the 26 companies selected by Ohio Edison. It is shown in Attachment DJD-5.

The first problem I identified regarding the 12.30% Average ROE proposed by Ohio Edison was that the total Net Profit (or adjusted net income) of those 26 comparable companies would be approximately $8.343 billion (or 26%) higher than the total per-book (or GAAP) net income. Ohio Edison's total Net Profit was also approximately $4.481 billion higher than the total adjusted net income calculated by Ohio Power. Because Ohio Edison was using an inflated figure of net income, it was no surprise that Ohio Edison's calculation would result in an average ROE of 12.26% (which was rounded-up to 12.30% by Ohio Edison) while the per-book average ROE was 9.72% for the same group of companies and 10.90% for the same group of companies using Ohio Power's adjusted net income data.

A second problem with Ohio Edison's average ROE calculation was the use of the per-book (GAAP) average common equity in combination with the non-GAAP net income. Because the adjusted (Non-GAAP) net income used by Ohio Edison was significantly higher than the per-book income, the average common equity used by Ohio Edison should also be adjusted upward to reflect the expected year-end increase in common equity. Ohio Edison has not made this required adjustment in average common equity. In other words, the numerator (Net Profit) of Ohio Edison's average ROE calculation has been adjusted upward while the denominator (Average Common Equity) has not been adjusted upward accordingly. The end result is an overstated average ROE of 12.30%.

The third problem with Ohio Edison's average ROE calculation is the inclusion of the FirstEnergy Corporation in the comparable group of companies. In calculating the average ROE, FirstEnergy should be removed from the comparable companies because of the occurrence of a non-GAAP adjustment of approximately $2.879 billion in 2017.[32] The inclusion of such a large amount of non-GAAP net income adjustment in calculating the average ROE of the comparable group will result in an overstated ROE. The financial summary of the 25 comparable companies (after the removal of FirstEnergy, AES and NRG) as proposed by OCC is shown in Attachment DJD-6.

In conclusion, due to the much higher adjusted net income figures used by Ohio Edison, the resulting average ROE of 12.26% (rounded-up to 12.3%) proposed by Ohio Edison) in this proceeding is unreliable and unreasonable. The use of this average ROE proposed by Ohio Edison would unreasonably increase the SEET ROE Threshold. Doing so would allow Ohio Edison to keep its significantly excessive earnings and not providing a refund to its customers.

[32] In 2017, FirstEnergy Corporation has a per-book loss of $1,724 million and an adjusted net income of $1,155 million according to the calculation by Ohio Edison. $2,879 million = $1,724 million + $1,155 million.

***Q23. PLEASE EXPLAIN WHY THE STATISTICS-BASED APPROACH OR METHOD USED BY OHIO EDISON IN THIS PROCEEDING IS UNREASONABLE AND SHOULD NOT BE USED IN SETTING THE SEET ROE THRESHOLD.***

***A23.*** The statistics-based approach of using the average ROE, the standard deviation of ROEs, and a multiplier to develop the SEET ROE Threshold has been proposed by the PUCO Staff and certain electric utilities in recent years. The PUCO has also considered and adopted the results of this statistics-based method regarding the SEET ROE thresholds in the past. But it has become increasingly clear that this statistics-based approach would lead to volatile and unreasonable results in the annual SEET review.

As discussed earlier, using essentially the same statistics-based approach of developing the SEET ROE Threshold, Ohio Edison proposed a SEET ROE Threshold of 14.80% for its 2016 SEET review[33] and a SEET ROE of 19.20% for its 2017 SEET review. It is not likely that the business and financial conditions facing Ohio Edison and the comparable group of companies would change so drastically within one year to justify this sudden and significant increase in the SEET ROE thresholds from 14.80% in 2016 to 19.20% in 2017.

[33] See PUCO Case 17-0993-EL-UNC, Direct Testimony of Joanne M. Savage (May 15, 2017) at 5.

The primary factor contributing to the volatility of the SEET ROE threshold from one year to another year or within the same year is the high volatility of the standard deviation of ROEs associated with the comparable companies. The extremely large volatility of the standard deviations of the ROEs was influenced by the net income figure selected (per-book or adjusted net income) and the exclusion or inclusion of one or a few companies with very large write-offs or adjustments in a particular year. The drastic variation of the standard deviations of the ROEs of the comparable companies in 2017 is shown in Table 2.

**Table 2**

**Standard Deviations of ROEs for the 2017 Comparable Companies**

| | No Exclusion of Comparable Companies | Exclusion of Two Companies(AES and NRG) | Exclusion of Three Companies (AES, NRG, and FirstEnergy) |
|---|---|---|---|
| SD based on Per-book Net Income | 50.72% | 11.84% | 8.35% |
| SD based on Adjusted Net Income (Ohio Edison) | n.a. | 4.15% | 3.64% |
| SD based on Adjusted Net Income (Ohio Power) | 12.42% | 2.89% | 2.50% |

There is no easy answer in controlling or reducing the high volatility of the standard deviation of the ROEs. Two approaches have been attempted and they turned out to be largely unsuccessful in controlling the volatility of the standard deviation. These approaches include the use of adjusted (Non-GAAP) net income and the removal of certain comparable companies with significant amounts of write-offs or non-GAAP gains. I believe the most reasonable approach at this time is to choose an alternative to the statistics-based method in setting the SEET ROE Threshold.

***Q24. WHAT IS YOUR PROPOSED 2017 SEET ROE THRESHOLD FOR OHIO EDISON?***

***A24.*** In this proceeding, I propose an SEET ROE Threshold of 14.91% to be adopted in determining if Ohio Edison has significantly excessive earnings in 2017. In other words, if Ohio Edison's earnings are above 14.91 %, they should be considered as significantly excessive, and earnings (profits) over this amount should be refunded to customers . This 14.91% ROE threshold is based on the OCC-calculated 2017 average per-book ROE of 10.41% of the 25 publicly-traded companies (excluding AES, NRG, and FirstEnergy) and a ROE "adder" of 450 basis point (4.50%) proposed by OCC. I believe this proposed ROE Threshold is reasonable and fair, and the PUCO should adopt this SEET ROE Threshold of 14.91%.

***Q25. PLEASE EXPLAIN YOUR SELECTION OF THE AVERAGE PER-BOOK ROE OF 10.41% IN RECOMMENDING THE 2017 SEET ROE THRESHOLD FOR OHIO EDISON?***

***A25.*** The first question in calculating the average ROE is the selection of the comparable companies. There are at least three companies (FirstEnergy Corporation, AES Corporation, and NRG Energy) in the comparable group with substantial write-offs or Non-GAPP gains in the comparable group such that they should be removed in calculating the average ROE. Some fluctuations in the net incomes and common equity of individual companies in a particular year can be expected. But it is clear to me that the 2017 per-book or adjusted net incomes of these three companies did not adequately reflect the results of the normal operation of those companies in the comparable group. More importantly, given the very large amounts of write-offs, non-GAAP gains, and possibly other accounting adjustments, the inclusion of these three companies would significantly distort the average ROE of the comparable group.

The next question is if the calculation of an average ROE should be based on per-book (GAAP) net income or Non-GAAP net income. It turned out that, once the three companies (AES, NRG, and FirstEnergy) are removed from the comparable group of companies, the difference between these two net income measurements might not be that significant. For my comparable group of 25 companies, the average per-book ROE was 10.41% and the average adjusted-income ROE (using

Ohio Power's data) was 10.77%.[34] The detailed analysis is shown in Attachment DJD-6.

Consequently, for transparency and consistency purpose, I recommend the use of an average ROE of 10.41% based on the per-book (GAAP) net income data of the 25 comparable companies. The use of the per-book net income data may result in a higher standard deviation of ROEs than the case of using the adjusted income data. But this is not a concern now because I do not propose the use of a statistics-based method (the one using a standard deviation of ROEs and a multiplier to derive an "adder" to the average ROE) in developing the SEET ROE Threshold.

***Q26. PLEASE EXPLAIN YOUR SELECTION OF THE 450 BASIS POINTS "ALLOWANCE" OR "ADDER" IN RECOMMENDING THE 2017 SEET ROE THRESHOLD FOR OHIO EDISON?***

***A26.*** As discussed earlier, it is increasingly clear that a statistics-based method would lead to volatile and unreasonable results in setting the SEET ROE Threshold. There should be an alternative in developing the "allowance" or "adder" to be added to the average ROE in developing a reasonable SEET ROE Threshold. For consistency and simplicity, I recommend the use of a numeric "adder" or "allowance".

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[34] See Attachment DJD-6.

I believe an "adder" of 400 basis points to 500 basis points to the average ROE is reasonable. This recommendation is based in part on the PUCO's prior decision on the "adder" of 200 basis points for the Safe Harbor ROE. By doubling the magnitude of the "adder" used for setting the Safe Harbor ROE (considered as a "backstop" for the SEET ROE test), the resulting SEET ROE threshold would provide a sufficient and fair 'headroom" for Ohio's electric utilities to increase their net income without being found to be "significantly excessive"). At the same time, this proposed "adder" of 400 to 500 basis points will still adequately protect utility customers from paying unreasonably high ESP rates.

My recommendation here is also a recognition that this proposed "adder" of 450 basis points (the midpoint of the range of 400 to 500 basis points) is likely to result in a SEET ROE Threshold in the range of 12% to 15% (depending on the average ROEs in a particular year), which is similar to that adopted by the PUCO in the past. In conclusion, I recommend an "adder" of 450 basis points to the average per-book ROE of 10.41% of the comparable companies in setting the SEET ROE Threshold applicable to the 2017 SEET review of Ohio Edison.

## V. PROPOSED REFUND TO OHIO EDISON'S CUSTOMERS

***Q27. DID OHIO EDISON HAVE SIGNIFICANTLY EXCESSIVE EARNINGS AS A RESULT OF THE ELECTRIC SECURITY PLAN RATES PAID BY CUSTOMERS IN 2017?***

***A27.*** Yes. Ohio Edison did have significantly excessive earnings in 2017 because it had a SEET-adjusted ROE of 17.39%, which exceeded the OCC-proposed SEET ROE Threshold of 14.91%. Furthermore, this SEET-adjusted ROE of 17.39% is approximately 66% higher than Ohio Edison's currently authorized ROE of 10.50%. Similarly, this SEET-adjusted ROE of 17.39% is approximately 67% higher than the 2017 weighted average per-book ROE (10.41%) I have calculated for a comparable group of 25 companies without significant restructuring activities and write-offs in 2017.

***Q28. HOW MUCH MONEY SHOULD BE RETURNED TO OHIO EDISON'S CUSTOMERS BASED ON THE SIGNIFICANTLY EXCESSIVE EARNINGS MADE BY OHIO EDISON IN 2017?***

***A28.*** My calculation indicates that Ohio Edison should refund its customers approximately $42 million for its significantly excessive earnings in 2017. As discussed earlier, if OCC's proposal of including the Rider DMR Revenue Net of Tax is adopted, Ohio Edison would have a SEET-adjusted net income of $184,838,588 and an average SEET-adjusted common equity of $1,062,702,154 in 2017. The allowed earnings for Ohio Edison at the OCC-proposed SEET ROE

Threshold of 14.91% would be $158,448,891.[35] A comparison of Ohio Edison's SEET-adjusted net income with the allowed earnings indicates that Ohio Edison would have excessive earnings of $26,389,697 in 2017.[36] The pre-tax revenue collection that should be returned to customers, using a gross-up factor of 1.5939732 approved in the last rate case, would be $42,064,470.[37] This is the amount of money that should be returned to customers through either a refund or a credit on their bills. The calculation of the refund to customers is summarized in Table 3.

**Table 3**

**Calculation of Refund to Ohio Edison's Customers**

| | | |
|---|---|---|
| SEET-adjusted Net Income | (1) | $184,838,588 |
| SEET-adjusted Average Equity | (2) | $1,062,702,154 |
| SEET ROE Threshold | (3) | 14.91% |
| Allowed Net Income at ROE Threshold | (4) = (2) * (3) | $158,448,891 |
| Excessive Net Income | (5) = (1) – (4) | $26,389,697 |
| Tax Gross-up Factor | (6) | 1.5939732 |
| Pre-tax Revenue To Be Refunded to Customers | (7) = (5) * (6) | $42,064,470 |

[35] $158,448,891 = $1,062,702,154 * 0.1491.

[36] $26,389,697 = $184,838,588 – $158,448,891.

[37] $42,064,470 = $26,389,697 * 1.5939732.

***Q29. IS THIS PROPOSED REFUND OF $42 MILLION TO OHIO EDISON'S CUSTOMERS A REDUCTION IN THE AMOUNT OF RIDER DMR REVENUE COLLECTION AUTHORIZED UNDER THE ESP?***

***A29.*** No. This proposed refund of $42 million to customers from the 2017 SEET review has nothing to do with a reduction of the collection of Rider DMR revenue. As discussed earlier, any refund to customers resulting from the 2017 SEET review is the result from an overall level of significantly excessive earnings by Ohio Edison in 2017 under an approved ESP. The annual SEET review does not examine the earnings of any individual provision (such as Rider DMR) of an ESP. The SEET refund to customers is a return of money collected for the overall excessive earnings, not the return of excessive earnings associated with any individual rate or rider. There is no such thing as a refund of earnings specifically from Rider DMR revenue.

***Q30. DOES THIS CONCLUDE YOUR TESTIMONY?***

***A30.*** Yes. But I reserve the right to supplement my testimony in the event that additional testimony is filed, or if new information or data in connection with this proceeding becomes available.

## CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of Daniel J. Duann, Ph.D. on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission to the persons listed below on this 16th day of October 2018.

*/s/ William J. Michael*
William J. Michael
Assistant Consumers' Counsel

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**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 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 (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.**

## Journal Articles

***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.

## Research Reports and Presentations

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

Ninth NARUC Biennial Regulatory Information Conference, The 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).

## ATTACHMENT DJD-3

### Calculation of 13-month Average Common Equity

| Line | Month | Per-book Common Equity by Ohio Edison | SEET-adjusted Common Equity by Ohio Edison | Cumulative Rider DMR Revenue Net of Tax | SEET-adjusted Common Equity by OCC |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | **Dec-16** | $1,124,183,742 | $1,109,136,880 | $0 | $1,109,136,880 |
| 3 | **Jan-17** | $1,092,201,072 | $1,068,353,456 | $4,790,480 | $1,073,143,936 |
| 4 | **Feb-17** | $1,107,599,996 | $1,074,615,532 | $9,718,610 | $1,084,334,142 |
| 5 | **Mar-17** | $1,080,516,400 | $1,037,142,848 | $14,680,646 | $1,051,823,494 |
| 6 | **Apr-17** | $1,095,285,668 | $1,043,633,101 | $18,898,929 | $1,062,532,030 |
| 7 | **May-17** | $1,109,101,368 | $1,050,712,661 | $23,398,499 | $1,074,111,160 |
| 8 | **Jun-17** | $1,083,781,244 | $1,016,109,363 | $28,473,217 | $1,044,582,580 |
| 9 | **Jul-17** | $1,114,862,879 | $1,035,895,616 | $34,037,679 | $1,069,933,295 |
| 10 | **Aug-17** | $1,139,545,984 | $1,051,006,152 | $39,287,267 | $1,090,293,419 |
| 11 | **Sep-17** | $1,059,398,697 | $962,558,415 | $44,035,883 | $1,006,594,298 |
| 12 | **Oct-17** | $1,075,647,522 | $970,525,816 | $48,644,404 | $1,019,170,220 |
| 13 | **Nov-17** | $1,095,680,249 | $981,385,439 | $53,301,173 | $1,034,686,612 |
| 14 | **Dec-17** | $1,187,918,784 | $1,036,267,583 | $58,518,353 | $1,094,785,936 |
| 15 | | | | | |
| 16 | 13-month Average | **$1,105,055,662** | **$1,033,641,759** | | **$1,062,702,154** |

**Source: Direct Testimony of Petrik, Schedule JSP-3.**

# ATTACHMENT DJD-4

## Financial Summary of 28 Companies in SPDR Select Sector Fund - Utility Used By Ohio Power (PUCO Case No. 18-0989-EL-UNC)

**Return on Equity Analysis**
**Year Ended December 31, 2017**
**($ in millions)**

| Company | Symbol | 2017 GAAP Income | Adjustments | 2017 Non-GAAP Income (AEP) | 2017 Equity | 2016 Equity | Average Equity | GAAP ROE | NON-GAAP ROE |
|---|---|---|---|---|---|---|---|---|---|
| NextEra | NEE | 5,378 | (1,619) | 3,759 | 28,208 | 24,341 | 26,275 | 20.47% | 14.31% |
| Duke | DUK | 3,059 | (22) | 3,037 | 41,737 | 41,033 | 41,385 | 7.39% | 7.34% |
| Southern | SO | 842 | 2,051 | 2,893 | 24,167 | 24,758 | 24,463 | 3.44% | 11.83% |
| Dominion | D | 2,999 | (851) | 2,148 | 17,142 | 14,605 | 15,874 | 18.89% | 13.53% |
| Exelon | EXC | 3,770 | (771) | 2,999 | 29,857 | 25,837 | 27,847 | 13.54% | 10.77% |
| AEP | AEP | 1,913 | (109) | 1,803 | 18,287 | 17,397 | 17,842 | 10.72% | 10.11% |
| PG&E | PCG | 1,646 | 147 | 1,793 | 19,220 | 17,940 | 18,580 | 8.86% | 9.65% |
| Sempra | SRE | 256 | 870 | 1,126 | 12,670 | 12,951 | 12,811 | 2.00% | 8.79% |
| Edison International | EIX | 565 | 914 | 1,479 | 11,671 | 11,996 | 11,834 | 4.77% | 12.50% |
| PPL Corporation | PPL | 1,128 | 321 | 1,449 | 10,761 | 9,899 | 10,330 | 10.92% | 14.03% |
| Consolidated Edison | ED | 1,525 | (259) | 1,266 | 15,418 | 14,298 | 14,858 | 10.26% | 8.52% |
| Public Service Enterpr | PEG | 1,574 | (168) | 1,406 | 13,847 | 13,130 | 13,489 | 11.67% | 10.42% |
| Xcel Energy Inc | XEL | 1,148 | 23 | 1,171 | 11,455 | 11,021 | 11,238 | 10.22% | 10.42% |
| WEC Energy Group In | WEC | 1,204 | (207) | 997 | 9,461 | 8,930 | 9,196 | 13.09% | 10.84% |
| DTE Energy Company | DTE | 1,134 | (100) | 1,034 | 9,512 | 9,011 | 9,262 | 12.24% | 11.16% |
| Eversource Energy | ES | 988 | 0 | 988 | 11,086 | 10,712 | 10,899 | 9.07% | 9.07% |
| FirstEnergy | FE | (1,724) | 2,691 | 967 | 3,925 | 6,241 | 5,083 | -33.92% | 19.02% |
| Entergy Corporation | ETR | 412 | 889 | 1,300 | 7,993 | 8,082 | 8,038 | 5.12% | 16.18% |
| American Water Work | AWK | 426 | 11 | 437 | 5,385 | 5,218 | 5,302 | 8.04% | 8.24% |
| Ameren Corporation | AEE | 523 | 154 | 677 | 7,184 | 7,103 | 7,144 | 7.32% | 9.48% |
| CMS Energy Corporat | CMS | 460 | 148 | 608 | 4,441 | 4,253 | 4,347 | 10.58% | 13.99% |
| CenterPointEnergy Inc | CNP | 1,792 | (1,113) | 679 | 4,688 | 3,460 | 4,074 | 43.99% | 16.67% |
| SCANA Corporation | SCG | (119) | 720 | 601 | 5,255 | 5,725 | 5,490 | -2.17% | 10.95% |
| Pinnacle West Capital | PNW | 488 | 0 | 488 | 5,007 | 4,804 | 4,905 | 9.95% | 9.95% |
| Alliant Energy Corpor | LNT | 457 | (18) | 439 | 4,182 | 3,862 | 4,022 | 11.37% | 10.92% |
| AES Corporation | AES | (1,161) | 1,762 | 601 | 2,465 | 2,794 | 2,630 | -44.15% | 22.86% |
| NiSource Inc | NI | 129 | 161 | 290 | 4,320 | 4,071 | 4,196 | 3.06% | 6.90% |
| NRG Energy | NRG | (2,153) | 1,709 | (444) | (346) | 2,041 | 848 | -254.04% | -52.39% |
| | | $ 28,658 | $ 7,333 | $ 35,991 | $ 338,998 | $ 325,513 | $ 332,255 | -2.40% | 9.50% |

| | | |
|---|---|---|
| Weighted Average | 8.63% | 10.83% |
| Unweighted Average | -2.40% | 9.50% |
| Safe Harbor | 10.63% | 12.83% |
| Standard Deviation | 50.72% | 12.42% |
| Standard Deviation Multiplier (95% Confidence) | 1.64 | 1.64 |
| SEET Treshold | 91.80% | 31.20% |

**Source: PUCO Case No. 19-0989-EL-UNC, Discovery Response to OCC RPD-01-005 (August 23, 2018).**

# ATTACHMENT DJD-5

## Financial Summary of 26 Companies in SPDR Select Sector Fund (Excluding AES and NRG)

**Return on Equity Analysis**
**Year Ended December 31, 2017**
**($ in millions)**

| Company | Symbol | 2017 GAAP Income | 2017 Non-GAAP Income (By Ohio Edison) | 2017 Non-GAAP Income (By Ohio Power) | 2017 Equity | 2016 Equity | Average Equity | GAAP ROE | NON-GAAP ROE (By Ohio Edison) | NON-GAAP ROE (By Ohio Power) |
|---|---|---|---|---|---|---|---|---|---|---|
| NextEra | NEE | 5,378 | 4,893 | 3,759 | 28,208 | 24,341 | 26,275 | 20.47% | 18.62% | 14.31% |
| Duke | DUK | 3,059 | 2,963 | 3,037 | 41,737 | 41,033 | 41,385 | 7.39% | 7.16% | 7.34% |
| Southern | SO | 842 | 3,100 | 2,893 | 24,167 | 24,758 | 24,463 | 3.44% | 12.67% | 11.83% |
| Dominion | D | 2,999 | 3,352 | 2,148 | 17,142 | 14,605 | 15,874 | 18.89% | 21.12% | 13.53% |
| AEP | AEP | 1,913 | 1,783 | 1,803 | 18,287 | 17,397 | 17,842 | 10.72% | 9.99% | 10.11% |
| Exelon | EXC | 3,770 | 4,279 | 2,999 | 29,857 | 25,837 | 27,847 | 13.54% | 15.37% | 10.77% |
| PG&E | PCG | 1,646 | 1,807 | 1,793 | 19,220 | 17,940 | 18,580 | 8.86% | 9.73% | 9.65% |
| PPL Corporation | PPL | 1,128 | 1,385 | 1,449 | 10,761 | 9,899 | 10,330 | 10.92% | 13.41% | 14.03% |
| Sempra | SRE | 256 | 1,169 | 1,126 | 12,670 | 12,951 | 12,811 | 2.00% | 9.13% | 8.79% |
| Public Service Enterprise Group | PEG | 1,574 | 2,245 | 1,406 | 13,847 | 13,130 | 13,489 | 11.67% | 16.64% | 10.42% |
| Edison International | EIX | 565 | 1,603 | 1,479 | 11,671 | 11,996 | 11,834 | 4.77% | 13.55% | 12.50% |
| Consolidated Edison | ED | 1,525 | 1,266 | 1,266 | 15,418 | 14,298 | 14,858 | 10.26% | 8.52% | 8.52% |
| Xcel Energy Inc | XEL | 1,148 | 1,171 | 1,171 | 11,455 | 11,021 | 11,238 | 10.22% | 10.42% | 10.42% |
| WEC Energy Group Inc | WEC | 1,204 | 998 | 997 | 9,461 | 8,930 | 9,196 | 13.09% | 10.85% | 10.84% |
| Eversource Energy | ES | 988 | 996 | 988 | 11,086 | 10,712 | 10,899 | 9.07% | 9.14% | 9.07% |
| DTE Energy Company | DTE | 1,134 | 1,029 | 1,034 | 9,512 | 9,011 | 9,262 | 12.24% | 11.11% | 11.16% |
| FirstEnergy | FE | (1,724) | 1,155 | 967 | 3,925 | 6,241 | 5,083 | -33.92% | 22.72% | 19.02% |
| Entergy Corporation | ETR | 412 | 951 | 1,300 | 7,993 | 8,082 | 8,037 | 5.12% | 11.83% | 16.18% |
| American Water Works Company | AWK | 426 | 535 | 437 | 5,385 | 5,218 | 5,302 | 8.04% | 10.09% | 8.24% |
| Ameren Corporation | AEE | 523 | 683 | 677 | 7,184 | 7,103 | 7,144 | 7.32% | 9.56% | 9.48% |
| CMS Energy Corporation | CMS | 460 | 610 | 608 | 4,441 | 4,253 | 4,347 | 10.58% | 14.03% | 13.99% |
| SCANA Corporation | SCG | (119) | 679 | 601 | 5,255 | 5,725 | 5,490 | -2.17% | 12.37% | 10.95% |
| CenterPointEnergy Inc | CNP | 1,792 | 580 | 679 | 4,688 | 3,460 | 4,074 | 43.99% | 14.24% | 16.67% |
| Pinnacle West Capital Corporation | PNW | 488 | 498 | 488 | 5,007 | 4,804 | 4,905 | 9.95% | 10.15% | 9.95% |
| NiSource Inc | NI | 129 | 129 | 290 | 4,320 | 4,071 | 4,196 | 3.06% | 3.07% | 6.91% |
| Alliant Energy Corporation | LNT | 457 | 456 | 439 | 4,182 | 3,862 | 4,022 | 11.37% | 11.34% | 10.91% |
| AES Corporation | AES | | | | | | | | | |
| NRG Energy | NRG | | | | | | | | | |
| | | $ 31,972 | $ 40,315 | $ 35,834 | $ 336,879 | $ 320,678 | $ 328,778 | | | |
| Weighted Average | | | | | | | | 9.72% | 12.26% | 10.90% |
| | | | | | | | Safe Harbor | 11.72% | 14.26% | 12.90% |
| | | | | | | | Standard Deviation | 11.84% | 4.15% | 2.89% |
| | | | | | | | Standard Deviation Multiplier (95% Confidence) | 1.64 | 1.64 | 1.64 |
| | | | | | | | SEET Treshold | 29.15% | 19.06% | 15.64% |

**ATTACHMENT DJD-6**

## Financial Summary of 25 Companies in SPDR Select Sector Fund (Excluding AES, NRG, and FirstEnergy)

**Return on Equity Analysis**
**Year Ended December 31, 2017**
**($ in millions)**

| Company | Symbol | 2017 GAAP Income | 2017 Non-GAAP Income (By Ohio Edison) | 2017 Non-GAAP Income (By Ohio Power) | 2017 Equity | 2016 Equity | Average Equity | GAAP ROE | NON-GAAP ROE (By Ohio Edison) | NON-GAAP ROE (By Ohio Power) |
|---|---|---|---|---|---|---|---|---|---|---|
| NextEra | NEE | 5,378 | 4,893 | 3,759 | 28,208 | 24,341 | 26,275 | 20.47% | 18.62% | 14.31% |
| Duke | DUK | 3,059 | 2,963 | 3,037 | 41,737 | 41,033 | 41,385 | 7.39% | 7.16% | 7.34% |
| Southern | SO | 842 | 3,100 | 2,893 | 24,167 | 24,758 | 24,463 | 3.44% | 12.67% | 11.83% |
| Dominion | D | 2,999 | 3,352 | 2,148 | 17,142 | 14,605 | 15,874 | 18.89% | 21.12% | 13.53% |
| AEP | AEP | 1,913 | 1,783 | 1,803 | 18,287 | 17,397 | 17,842 | 10.72% | 9.99% | 10.11% |
| Exelon | EXC | 3,770 | 4,279 | 2,999 | 29,857 | 25,837 | 27,847 | 13.54% | 15.37% | 10.77% |
| PG&E | PCG | 1,646 | 1,807 | 1,793 | 19,220 | 17,940 | 18,580 | 8.86% | 9.73% | 9.65% |
| PPL Corporation | PPL | 1,128 | 1,385 | 1,449 | 10,761 | 9,899 | 10,330 | 10.92% | 13.41% | 14.03% |
| Sempra | SRE | 256 | 1,169 | 1,126 | 12,670 | 12,951 | 12,811 | 2.00% | 9.13% | 8.79% |
| Public Service Enterprise Group | PEG | 1,574 | 2,245 | 1,406 | 13,847 | 13,130 | 13,489 | 11.67% | 16.64% | 10.42% |
| Edison International | EIX | 565 | 1,603 | 1,479 | 11,671 | 11,996 | 11,834 | 4.77% | 13.55% | 12.50% |
| Consolidated Edison | ED | 1,525 | 1,266 | 1,266 | 15,418 | 14,298 | 14,858 | 10.26% | 8.52% | 8.52% |
| Xcel Energy Inc | XEL | 1,148 | 1,171 | 1,171 | 11,455 | 11,021 | 11,238 | 10.22% | 10.42% | 10.42% |
| WEC Energy Group Inc | WEC | 1,204 | 998 | 997 | 9,461 | 8,930 | 9,196 | 13.09% | 10.85% | 10.84% |
| Eversource Energy | ES | 988 | 996 | 988 | 11,086 | 10,712 | 10,899 | 9.07% | 9.14% | 9.07% |
| DTE Energy Company | DTE | 1,134 | 1,029 | 1,034 | 9,512 | 9,011 | 9,262 | 12.24% | 11.11% | 11.16% |
| Entergy Corporation | ETR | 412 | 951 | 1,300 | 7,993 | 8,082 | 8,037 | 5.12% | 11.83% | 16.18% |
| American Water Works Company | AWK | 426 | 535 | 437 | 5,385 | 5,218 | 5,302 | 8.04% | 10.09% | 8.24% |
| Ameren Corporation | AEE | 523 | 683 | 677 | 7,184 | 7,103 | 7,144 | 7.32% | 9.56% | 9.48% |
| CMS Energy Corporation | CMS | 460 | 610 | 608 | 4,441 | 4,253 | 4,347 | 10.58% | 14.03% | 13.99% |
| SCANA Corporation | SCG | (119) | 679 | 601 | 5,255 | 5,725 | 5,490 | -2.17% | 12.37% | 10.95% |
| CenterPointEnergy Inc | CNP | 1,792 | 580 | 679 | 4,688 | 3,460 | 4,074 | 43.99% | 14.24% | 16.67% |
| Pinnacle West Capital Corporation | PNW | 488 | 498 | 488 | 5,007 | 4,804 | 4,905 | 9.95% | 10.15% | 9.95% |
| NiSource Inc | NI | 129 | 129 | 290 | 4,320 | 4,071 | 4,196 | 3.06% | 3.07% | 6.91% |
| Alliant Energy Corporation | LNT | 457 | 456 | 439 | 4,182 | 3,862 | 4,022 | 11.37% | 11.34% | 10.91% |
| FirstEnergy | FE | | | | | | | | | |
| AES Corporation | AES | | | | | | | | | |
| NRG Energy | NRG | | | | | | | | | |
| | | $ 33,696 | $ 39,160 | $ 34,867 | $ 332,954 | $ 314,437 | $ 323,695 | | | |
| Weighted Average | | | | | | | | 10.41% | 12.10% | 10.77% |
| | | | | | | | Safe Harbor | 12.41% | 14.10% | 12.77% |
| | | | | | | | Standard Deviation | 8.35% | 3.64% | 2.50% |
| | | | | | | | Standard Deviation Multiplier (95% Confidence) | 1.64 | 1.64 | 1.64 |
| | | | | | | | SEET Treshold | 24.10% | 18.07% | 14.87% |