***OCC EXHIBIT NO. \_\_\_\_\_\_***

**BEFORE**

**THE PUBLIC UTILITIES COMMISSION OF OHIO**

|  |  |  |
| --- | --- | --- |
| In the Matter of the Application Seeking Approval of Ohio Power Company’s Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider  In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority | )  )  )  )  )  )  )  ) | Case No. 14-1693-EL-RDR  Case No. 14-1694-EL-AAM |

**TESTIMONY**

**OF**

**DANIEL J. DUANN, Ph.D.**

**On Behalf of**

**The Office of the Ohio Consumers’ Counsel**

*10 West Broad Street, Suite 1800*

*Columbus, Ohio43215-3485*

**SEPTEMBER 11. 2015**

**LIST OF ATTACHMENTS**

Attachment DJD-1

Attachment DJD-2

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

***A1.*** My name is Daniel J. Duann. My business address is 10 West Broad Street, Suite 1800, Columbus, Ohio, 43215-3485. I am a Principal Regulatory Analyst with the Office of the Ohio Consumers’ Counsel (“OCC”).

***Q2. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.***

***A2.*** I received my Ph.D. degree in public policy analysis from the Wharton School, University of Pennsylvania. I also have a M.S. degree in energy management and policy from the University of Pennsylvania, and a 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. I was conferred by the Society of Utility and Regulatory Financial Analysts as a Certified Rate of Return Analyst in April 2011.

I was a Utility Examiner II in the Forecasting Section of the Ohio Division of Energy, Ohio Department of Development, from 1983 to 1985. 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. I was employed as a Senior Institute Economist at the National Regulatory Research Institute (“NRRI”) at The Ohio State University from 1987 to 1995. My work at NRRI involved many areas of utility regulation and energy policy. I was an independent business consultant from 1996 to 2007.

I joined the OCC in January 2008 as a Senior Regulatory Analyst. I was promoted to my current position in November 2011. My responsibilities are to assist the OCC by participating in various regulatory proceedings before the Public Utilities Commission of Ohio (“PUCO” or “Commission”). These proceedings include rate cases, alternative regulation, fuel cost recovery, service reliability, and other types of filings by Ohio’s electric, gas, and water companies.

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

***A3.*** Yes. I have submitted expert testimony on behalf of the OCC before the PUCO in a number of cases involving electric, gas, and water utilities. A list of these cases is included in Attachment DJD-1.

***Q4. WHAT ARE YOUR QUALIFICATIONS IN REGARD TO YOUR TESTIMONY IN THIS PROCEEDING?***

***A4.*** I am a trained economist with over twenty-five years of experience in studying and analyzing the regulation of public utilities in the United States. A list of my selected professional publications is included in Attachment DJD-2. I have directly participated in many public utility proceedings in Ohio and Illinois. I am familiar with many regulatory and policy issues related to the cost of capital, fuel cost adjustment, standard service offerings, and authorization and amortization of deferrals by electric utilities in Ohio.

***Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?***

***A5.*** The purpose of my testimony is to explain and support OCC’s position regarding the proposed Power Purchase Agreement Rider (“PPA Rider”) and related requests by Ohio Power Company (“AEP Ohio”, “Ohio Power” or “Utility”). Other OCC witnesses may address similar or different issues related to the proposed PPA Rider.

Specifically, I will explain and support OCC’s position regarding the so-called “return on equity” (“ROE”) to be used for the formula rate contract between Ohio Power and AEP Generation Resources, Inc., (“AEPGR”) if the proposed PPA Rider and related requests are approved by the Commission.

***Q6. PLEASE SUMMARIZE YOUR FINDINGS.***

***A6.*** Based on my years of experience as a regulatory economist and my understanding of the regulatory construct of electric service in Ohio, I conclude the following:

1. The proposed PPA Rider and related requests by AEP Ohio, for the electricity produced by a selected portion of the generation units owned by its affiliated and unregulated power producer AEPGR, is unreasonable and not in the public interest;
2. The so-called “Return on Equity” or “ROE” of 11.24% proposed for the formula rate contract between AEP Ohio and AEPGR for all the outputs from certain power plants is unreasonable. AEPGR is an unregulated power producer and its return (or profit) is, and should be, decided in the marketplace. AEPGR is not entitled to any specific level of a guaranteed return on equity. Regarding the return on capital investments, AEPGR should be treated the same as any other unregulated power producer in Ohio.
3. If the proposed ROE of 11.24% is adopted by the Commission, AEPGR would be treated more favorably than other unregulated power producers in Ohio who have not received any guaranteed ROE on their investments in generation plants. The adoption of a PPA Rider and a guaranteed ROE for AEPGR will create a mandatory customer funded subsidy to a certain market participant and thus distort the outcomes (in this instance, the price and quantity of electricity) of a competitive market. The end result is an uneven playing field where the price of electricity for customers will be higher and new investments in conventional or alternative generation technology by other power producers to serve Ohio will be discouraged to the detriment of consumers.
4. The adoption of a guaranteed ROE of 11.24% would also give AEPGR unprecedented favorable treatment as compared to that typically afforded to a regulated electric utility in Ohio. Under the proposed PPA Rider, AEPGR is receiving a higher ROE of 11.24%, which is higher than those recently approved ROEs for Ohio’s regulated electric utilities. More significantly, this higher ROE is guaranteed for the life of the power plants included in the Affiliate PPA. All electricity generated by those power plants included in the Affiliate PPA will be sold to AEP Ohio and paid by the customers of AEP Ohio. To AEPGR, there is no risk of insufficient demand in the service territory of AEP Ohio.

In contrast, there has never been a guarantee on the ROE that a regulated Ohio electric utility can earn. The ROE approved by the Commission in a rate case provides an opportunity, not a guarantee, for the regulated electric utility to earn the approved ROE. The ROE actually earned by a regulated electric utility is influenced by many factors such as the load growth (or decline) in the service territory and the cost control efforts of the regulated utility. The rates or rate mechanisms approved by the Commission in a rate case do not guarantee the regulated utility will earn the approved ROE.

1. Furthermore, even if the concept of setting an ROE for a regulated utility and the typical methods for estimating the ROE were to be applied to AEPGR, the 11.24% ROE proposed by AEP Ohio is overstated and unreasonable. The 11.24% ROE as proposed by AEP Ohio is derived based on faulty assumptions and data.

***Q7. PLEASE SUMMARIZE YOUR FINDINGS.***

***A7.*** Based on my findings, I recommend the following:

1. The Commission should reject the proposed PPA Rider and all related requests by AEP Ohio in this proceeding. It is not in the public interest and will likely harm customers. It is my expectation that attempts to modify the PPA Rider and related requests will not likely overcome the serious deficiencies that are identified by me and other OCC witnesses.
2. No ROE should be included in the formula rate contract between AEPGR and AEP Ohio for the electricity generated by the units included in the Affiliate PPA. However, if a PPA Rider were adopted by the Commission (which OCC does not recommend) and a specific ROE is needed for contracting or ratemaking, the initial “ROE” to be used in calculating the rate paid by AEP Ohio (and consequently paid by its customers through the PPA Rider) to AEPGR should be set as low as possible. This is in keeping with the notion that under the proposed PPA, all of the business and financial risks to AEPGR are transferred to captive retail customers. As a matter of fairness and for the protection of AEP Ohio’s customers, I propose the ROE applicable to the PPA Units be set no higher than AEPGR’s average cost of debt (for both long-term and short-term debt) during the three-month period preceding the filing of a PPA Rider.

***Q8. PLEASE SUMMARIZE AEP OHIO’S PROPOSED COST OF EQUITY (OR RETURN ON EQUITY) USED IN THE AFFILIATE POWER PURCHASE AGREEMENT (AFFILIATE PPA) BETWEEN AEP OHIO AND AEPGR.***

***A8.*** The 11.24% ROE proposed in the Amended Application is not an ROE for AEP Ohio, a regulated electric utility. Neither is the 11.24% an ROE for AEPGR, an unregulated power producer. The proposed 11.24% ROE is applicable to certain generation units owned by AEPGR and included in the Affiliate PPA.

The proposed 11.24% ROE is used to calculate the rate charged by AEPGR to AEP Ohio for electricity produced by the power plants included in the Affiliate PPA. The electricity purchased under the Affiliate PPA will not be used to serve AEP Ohio’s customers. Instead AEP Ohio will liquidate its position in the PJM market and receive the proceeds from such as a sale. The difference (either a credit or a charge) between what AEP Ohio pays to AEPGR and the proceeds AEP Ohio receives from PJM are then collected from all retail customers through the proposed PPA Rider. In other words, the customers of AEP Ohio will be paying the so-called “costs” (including a guaranteed return of 11.24% on generation investments) determined through a formula contract to AEPGR for all electricity generated from those units included in the Affiliate PPA.

In its Amended Application, AEP Ohio proposes to set the ROE to be used in the Affiliate PPA at the sum of the average of the daily Moody’s index (the Moody’s Baa Corporate Bond Index) for the December of the preceding calendar year plus an equity risk premium of 650 basis points (or 6.5%). Initially, the Moody’s index was 4.74%, and the ROE would be set at 11.24%.

***Q9. WHICH ENTITY WILL BENEFIT FINANCIALLY FROM UTILITY CUSTOMERS PAYING A HIGHER ROE UNDER THE PROPOSED AFFILIATE PPA AND PPA RIDER?***

***A9.*** As the owner of the generation units included in the Affiliate PPA, AEPGR is the only party that will benefit financially from receiving a higher ROE paid for by captive customers. AEPGR’s parent company, American Electric Power, will also benefit indirectly from its ownership of AEPGR. AEP Ohio’s own financial position will only be indirectly (through American Electric Power) affected by the ROE paid for by customers (if approved by the Commission) in this proceeding.

***Q10. DOES AEPGR CURRENTLY RECEIVE A GUARANTEED RETURN (OR PROFIT) ON ITS GENERATION ASSETS?***

***A10.*** No. AEPGR is an unregulated power producer and its rate is not regulated by the PUCO. Ohio’s electricity generation market was deregulated and the transition time of a Market Development Period has passed. The power plants previously owned by AEP Ohio were also transferred to an unregulated affiliate, AEPGR. At this time, all unregulated power producers in Ohio, including AEPGR, are supposed to be on their own in a competitive market.

***Q11. SHOULD AEPGR RECEIVE A CUSTOMER FUNDED GUARANTEED RETURN ON ANY OF ITS GENERATION ASSETS, IN PARTICULAR THOSE POWER PLANTS INCLUDED IN THE AFFILIATE PPA?***

***A11.*** No. As an unregulated power producer in Ohio, AEPGR’s return (profit) from its investment in power plants is determined in the marketplace. Typically, if the market price of electricity in Ohio or in the PJM Interconnection, L.L.C. (“PJM”) area is high, the annual profit of AEPGR will likely be greater. If the market price of electricity is low, then the profit of AEPGR will likely be less. As a participant in the competitive and deregulated generation market in Ohio, AEPGR does not receive a guaranteed return on any of its generation units.

AEPGR needs to compete on its own with other power producers for business and to keep its power plants running. There is no need to separate out those units included in the Affiliate PPA and treat them differently from other generation facilities owned by AEPGR or any other Ohio power producers.

***Q12. IS THE ADOPTION OF A GUARANTEED ROE OF 11.24% FOR THE AFFILIATE PPA PREFERENTIAL TREATMENT AND A MANDATORY CUSTOMER FUNDED SUBSIDY TO AEPGR?***

***A12.*** Yes. If the proposed guaranteed ROE of 11.24% is adopted, AEPGR would be treated more favorably than other unregulated power producers in Ohio. And all customers of the electric distribution utility will pay for it. As the Ohio electricity generation market has been deregulated, all unregulated power producers in Ohio are supposed to be on their own financially. All unregulated power producers currently do not receive a guaranteed ROE on their investments in generation plants.

A guaranteed ROE of 11.24% for AEPGR, under the proposed PPA Rider, will be an unjustified and costly customer funded subsidy to one particular market participant in a competitive marketplace for generation services. This unjustified customer funded subsidy to AEPGR will allow it to have an unfair financial advantage, granted by the PUCO, over other market participants. The end result is an uneven playing field with distorted market prices and quantities.

If such a subsidy persists, there will likely be fewer market participants and investments in conventional or alternative generation technology. Other power producers considering serving Ohio will likely be discouraged and their investments will likely be reduced or removed from the competitive generation market. The state policy of ensuring adequate, reliable, nondiscriminatory, and reasonably priced electric service to all customers, as well as other policies specified in Ohio Revised Code 4928.02, will be undermined by the adoption of the proposed PPA Rider and an 11.24% ROE.

In addition, the adoption of a guaranteed ROE of 11.24% would give AEPGR unprecedented favorable treatment as compared to the rate of return regulation afforded to regulated electric utilities in Ohio. Under the proposed PPA Rider, AEPGR would receive a customer funded guaranteed ROE of 11.24%, which is higher than the ROEs recently approved for Ohio’s electric distribution companies. More significantly, this higher ROE for AEPGR is guaranteed for the life of the power plants included in the Affiliate PPA. It is a guaranteed return to AEPGR (paid for by AEP Ohio’s customers) because all electricity generated by the power plants included in the Affiliate PPA will be sold to AEP Ohio. To AEPGR, there is no risk of a declining demand for electricity in AEP Ohio’s service area.

In contrast, under the traditional rate of return regulation currently in place for Ohio’s regulated electric distribution utilities, there is no guarantee that a regulated electric utility can earn the approved ROE. The ROE approved by the Commission in a rate case only provides an opportunity, not a guarantee, for a regulated utility to earn the approved ROE. The ROE actually earned by a regulated distribution utility can be influenced by many factors, in particular the load growth (or decline) in its service territory or the cost control efforts of the regulated utility. A regulated electric distribution utility, such as AEP Ohio, may earn a higher ROE than that approved by the Commission. In some instances, the regulated utility may earn a much lower ROE.

***Q13. IS THE CONCEPT OF SETTING AN ALLOWED ROE FOR A REGULATED UTILITY APPLICABLE TO SETTING THE ROE FOR AN UNREGULATED POWER PRODUCER SUCH AS AEPGR?***

***A13.*** No. There is no need and no justification to set an ROE for an unregulated power producer. As discussed earlier, AEPGR, as an unregulated power producer, has not received (and is not entitled to) a guaranteed return from its power plants that operated in a deregulated marketplace such as PJM’s generation market. Furthermore, there are no statutory requirements or regulatory tools under existing Ohio law that would allow the PUCO to set or to guarantee the ROE earned by an unregulated power producer such as AEPGR. Even if the Commission does choose to provide a guaranteed ROE to AEPGR on some of its generation units, the PUCO would not have any additional statutory authority to regulate and oversee the capital investments and operation of AEPGR, an unregulated power producer. In other words, AEPGR would be treated as an unregulated entity with a guaranteed return on equity, funded by regulated customers.

In short, AEPGR is not entitled to a customer funded guaranteed return on equity. The Commission does not regulate AEPGR and thus should not require customers to fund a guaranteed return on the power plants owned by AEPGR. The concept of setting an ROE for a regulated electric utility and the typical methods of estimating an allowed ROE are not applicable to AEPGR, an unregulated power producer.

***Q14. ASSUMING FOR THE TIME BEING THAT THE CONCEPT AND THE TYPICAL METHODS OF ESTIMATING THE ROE FOR A REGULATED UTILITY WERE APPLIED IN SETTING A GUARANTEED ROE OF AEPGR, IS THE PROPOSED ROE OF 11.24% REASONABLE?***

***A14.*** No, the proposed ROE of 11.24% is inflated and unreasonable.

***Q15. PLEASE EXPLAIN WHY THE 11.24% ROE PROPOSED BY AEP OHIO FOR THE AFFILIATE PPA IS INFLATED AND UNREASONABLE.***

***A15*** As discussed above, I do not support the adoption of the PPA Rider and Affiliate PPA proposed in the Amended Application.

Neither do I support the adoption of a guaranteed ROE for any power plants owned by AEPGR. There should not be any ROE included in the formula contract rate used in the Affiliate PPA between AEP Ohio and AEPGR.

However, if the PPA Rider was adopted by the Commission, and a guaranteed ROE is used in the Affiliate PPA, the 11.24% ROE proposed by AEP Ohio is inflated and unreasonable.

The 11.24% ROE proposed for the power plants included in the Affiliate PPA is the sum of the average Moody’s Baa Corporate Bond Index of 4.74% (“Moody’s Index”) plus an estimated Equity Risk Premium of 6.5%. This approach, commonly referred as a Risk Premium Model (or in its special form, a Capital Asset Pricing Model (“CAPM”)), is an established method in estimating the allowed ROE for regulated utilities. In Ohio, the PUCO Staff typically uses the CAPM and another method (the Discounted Cash Flow Model) in estimating the allowed ROE for regulated Ohio utilities in rate cases in recent years. I do not have any issue with using the CAPM or the Risk Premium Model to estimate the allowed ROE for regulated utilities.

However, the use of the Risk Premium Model by AEP Ohio in deriving its proposed ROE of 11.24 is problematic and inflates the resulting ROE, to the detriment of customers who would be funding it. Essentially, the risk-free return, 4.74%, selected by AEP Ohio is too high and unreasonable in the current capital market condition. If AEP Ohio chooses to stick with this risk-free return of 4.74% (actually it is a non-risk-free return as discussed below), then the equity risk premium of 6.50% proposed by AEP Ohio is too high and should be lowered. Either way, the proposed ROE of 11.24% is inflated and unreasonable.

The basic concept of the Risk Premium Model is to adjust the return associated with investing in a particular equity (such as an industrial firm, a technology start-up, or a regulated utility) to compensate for the business and financial risk associated with that particular equity investment. The equity risk premium, such as the 6.5% proposed by AEP Ohio, is typically measured as the difference in the annualized returns between the equity investment (such as the stocks of a group of companies) and a risk-free investment (such as the US Treasury Bonds with various maturities).

The Moody’s Baa Corporate Bond Index of 4.74% used by AEP Ohio is not a reasonable measurement of risk-free return in the current capital market. Specifically, corporate bonds, even with the highest credit rating, generally are not considered as risk-free investments. A measurement of the current yields of US Treasury Bonds with various years of maturity is considered by financial analysts as a better measurement of the return of risk-free investments. The current yields on US Treasury Bonds are much lower than the Moody’s Index.

The Moody’s Baa Corporate Bond Index is also not a good measurement of the risk-adjusted return (non-risk-free return) associated with U.S. power producers of similar credit rating. The Moody’s Corporate Bond Index includes the yields of the bonds issued by many companies in different industries, not just the bonds issued by power producers.

An index of risk-adjusted return (a non-risk-free return such as the Moody’s Index) can be used in the Risk Premium Model. But in doing so, the estimated equity risk premium, such as the 6.5% used by AEP Ohio, should be adjusted downward to reflect the difference in annualized returns between the equity and bond investments in that particular industry rather than the equity and bond investments in the broader stock and bond markets.

***Q16. WHAT IS YOUR RECOMMENDATION ON THE ROE TO BE USED IN THE AFFILIATE PPA IF THE COMMISSION WERE TO ADOPT A PPA RIDER SIMILAR TO THE ONE PROPOSED IN THIS PROCEEDING?***

***A16.*** If the Commission were to adopt a PPA Rider, (which I do not recommend) it should not adopt an ROE for the proposed Affiliate PPA because customers should not be guaranteeing a return to unregulated entities. AEPGR is an unregulated power producer and is not entitled to receive any level of guaranteed return on equity on its power plant investments. The market price of electricity will set the floor as well as the ceiling of ROE that AEPGR can earn.

Alternatively, in the interest of fairness and for the protection of AEP Ohio’s customers, if the Commission does choose to adopt a kind of PPA Rider and Affiliate PPA as proposed in the Amended Application, I recommend that the ROE be set as low as possible to protect customers from paying unreasonable rates. Under the proposed affiliate PPA, all risk associated with the operation of these units and some capital investments are transferred from AEPGR to AEP’s Ohio’s captive retail customers. The approved ROE should be no higher than the current average cost of debt of AEPGR, including both long-term and short-term debts over the three month period before the annual filing of the PPA Rider. This is a reasonable compromise because setting the ROE at AEPGR’s current cost of debt will allow AEPGR to cover its current interest expenses on those generation units included in the affiliate PPA.

***Q17. WOULD THE SETTING OF A GUARANTEE ROE AT THE COST OF DEBT DISCOURAGE AEPGR FROM MAKING NEW INVESTMENTS IN THOSE POWER PLANTS INCLUDED IN THE AFFILIATE PPA?***

***A17.*** Not necessarily. Obviously, I do not want to speculate on what AEP or AEPGR will do regarding those power plants. There are many factors to be considered in making a decision on how much, when, and where to build new generation capacity.

As a regulatory economist, I believe it is more important to keep a market as competitive as possible (that is a level playing field for everyone) and let the market decide how much electric generation investments, at what time, and by whom than to financially support one market participant. In addition, no unregulated power producers, including AEPGR, are receiving a **guaranteed** return from their investments in power plants. AEPGR should not be incentivized or discouraged from making investments. Furthermore, AEPGR is not the only entity that is allowed to build new power plants or other new sources of electricity in Ohio. If AEPGR chooses not to build new generation plants in Ohio or other states, other business entities will build new generation plants as long as the market price of electricity can provide (but without a guarantee) sufficient return to their investments.

***Q18. FROM THE PERSPECTIVE OF INVESTMENT ANALYSIS, DO YOU HAVE CONFIDENCE IN THE FORECASTED PPA RIDER IMPACTS ESTIMATED BY AEP OHIO, IN PARTICULAR EXHIBIT KDP-2?***

***A18.*** First of all, I want to state that I do not directly own any stock or bonds of American Electric Power or its subsidiaries. But if I were asked to evaluate the proposed PPA Rider, from the perspective of AEP or AEPGR, as a capital investment project, I would have little confidence in the PPA Rider impact numbers presented by AEP Ohio in KDP-2. If I were to believe that the PPA Rider impacts as presented by AEP Ohio were reasonable, I must conclude that AEP or AEP Ohio is not doing a good job in managing investors’ money. According to the Average of High Load and Low load Forecast in Exhibit KDP-2, under the PPA Rider, AEPGR or AEP Ohio is essentially “borrowing” $48 million from its retail customers in 2015 and then will be paying back this $48 million loan every year from 2016 to 2024 for a total sum of $622 million. This apparently is neither good nor competent corporate financial management. By not proposing a PPA Rider, AEP or AEPGR can fund this $48 million by shareholders or by borrowing in the open market in 2015 and keep or “earn” the “credit” of $622 million.

***Q19. DOES THIS CONCLUDE YOUR TESTIMONY?***

***A19.*** Yes. However, 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’s,* was served via electronic transmission to the persons listed below on this 11th day of September 2015.

*/s/ William J. Michael*

William J. Michael

Assistant Consumers’ Counsel

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**ATTACHMENT DJD-1**

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**Daniel J. Duann, Ph.D.**

**List of Testimonies Filed Before PUCO**

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

*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).

*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).

*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).

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

*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).

*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).

*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 (ESP)*, Case Nos. 11-346-EL-SSO, et al (July 25,2011).

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

*In the Matter of the 2010 Annual Filing of Columbus Southern Power Company and Ohio Power 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).

*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).

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*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).

1. *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).
2. *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).
3. *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).
4. *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).
5. *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).
6. *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).
7. *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).

**ATTACHMENT DJD-2**

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**Daniel J. Duann, Ph.D.**

**List of Professional Publications**

**Journal Articles**

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