

OCC EXHIBIT _____

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of)	
Columbus Southern Power Company for)	
Approval of an Electric Security Plan; an)	Case No. 08-917-EL-SSO
Amendment to its Corporate Separation)	
Plan; and the Sale or Transfer of Certain)	
Generating Asset.)	

In the Matter of the Application of Ohio)	
Power Company for Approval of an)	Case No. 08-918-EL-SSO
Electric Security Plan; and an Amendment)	
to its Corporate Separation Plan.)	

**DIRECT TESTIMONY ON REMAND
of
DANIEL J. DUANN, Ph.D. CRRA**

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**ON BEHALF OF
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL**
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June 30, 2011

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CERTIFICATE OF SERVICE

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME, 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 Senior 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 in 1984. I also have a M.S. degree in energy management and policy from the University of Pennsylvania (1982) and a M.A. degree in economics from the University of Kansas (1978). I completed my undergraduate study in business administration at the National Taiwan University, Taiwan, Republic of China in 1977. I am a Certified Rate of Return Analyst conferred by the Society of Utility and Regulatory Financial Analysts in April 2011.

I was a Utility Examiner II in the Forecasting Section of the Ohio Division of Energy ("ODOE"), 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 1986, I joined the Illinois Commerce Commission ("ICC") as a senior economist in its Policy Analysis and

1 Research Division. I was employed as a senior institute economist at the National
2 Regulatory Research Institute ("NRRI") at The Ohio State University from 1987
3 to 1995. My work at NRRI involved many areas of utility regulation and energy
4 policy. I was an independent consultant from 1996 to 2007. A list of my selected
5 professional publications is attached as Attachment DJD-A.

6
7 I joined the OCC in January 2008 as a senior regulatory analyst. My current
8 responsibilities are to assist OCC in participating in various regulatory
9 proceedings that include rate cases, alternative regulation, cost recovery filings,
10 and service reliability by Ohio's electric utilities. In particular, I was part of the
11 case team that analyzed the first Electric Security Plan ("ESP") filing by
12 Columbus Southern Power Company ("CSP") and Ohio Power Company
13 ("OPC") (collectively, "AEP Ohio" or "Companies") (Case Nos. 08-917-EL-SSO
14 et al.). I also conducted analysis and testified in AEP Ohio's 2009 Fuel
15 Adjustment Clause ("FAC") Audit proceeding (Case Nos. 09-872-EL-FAC and
16 09-873-EL-FAC).

17
18 ***Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE***
19 ***PUBLIC UTILITIES COMMISSION OF OHIO?***

20 ***A3.*** Yes. I submitted expert testimony before the Public Utilities Commission of Ohio
21 ("PUCO" or "Commission") in a number of cases involving electric and water
22 companies. Cases in which I have submitted testimony before the PUCO are
23 listed in Attachment DJD-B.

1 **Q4. HAVE YOU PREVIOUSLY TESTIFIED OR SUBMITTED TESTIMONY**
2 **BEFORE OTHER ADMINISTRATIVE, REGULATORY, OR LEGISLATIVE**
3 **AGENCIES?**

4 **A4.** Yes. I testified before the ODOE on behalf of the ODOE Staff regarding the
5 Long-Term Forecast Report of the Cleveland Electric Illuminating Company
6 (Case No. CEI-83-E) in 1984. In the same capacity, I submitted testimony before
7 the ODOE on the Long-Term Forecast Report of Toledo Edison Company (Case
8 No. TEC-84-E) in 1985. I also testified before the ICC in 1987 on behalf of the
9 ICC Staff regarding the divestiture of three nuclear power plants by the
10 Commonwealth Edison Company and related matters (Case Nos. 87-0043, 87-
11 0044, 87-0057, 87-0096). In 1989, I testified as an expert analyst before the
12 Senate Committee on Energy and Public Utilities of the California Legislature
13 regarding pending legislation (California SB 769) that would have prohibited an
14 electric utility from purchasing electricity from a private energy producer fully or
15 partially owned by a subsidiary or affiliate of the utility.

16
17 **Q5. WHAT DOCUMENTS HAVE YOU REVIEWED IN THE PREPARATION OF**
18 **YOUR TESTIMONY?**

19 **A5.** I have reviewed the recent Supreme Court of Ohio decision ("Remand Decision")
20 that relates to appeals taken from AEP Ohio's first ESP proceeding.¹ I have also
21 reviewed the Commission's entries directing AEP Ohio to file revised tariffs, and
22 to make appropriate filings in the event that AEP Ohio intends to continue

¹ *In re Application of Columbus S. Power Co.*, Slip Opinion No. 2011-Ohio-1788.

1 collecting the Provider of Last Resort ("POLR") charge and environmental
2 carrying charges pursuant to the Court's remand.² I have reviewed the cover letter
3 and four testimonies filed on June 6, 2011 by AEP Ohio in the remand
4 proceeding.³ In addition, I have reviewed relevant discovery propounded upon
5 AEP Ohio, and AEP Ohio's responses to such discovery in the remand
6 proceeding.

7
8 ***Q6. WHAT ARE YOUR QUALIFICATIONS TO ADDRESS THE ISSUES***
9 ***DISCUSSED IN YOUR TESTIMONY?***

10 ***A6.*** I am a trained economist with over twenty years of experience in studying and
11 analyzing regulation of electric utilities in the United States. I am familiar with
12 the issues related to AEP Ohio's first ESP and the remand proceeding. I have
13 participated in several cases involving AEP Ohio before the PUCO in the last
14 three years.⁴ Specifically, I was part of the OCC's case team working on AEP
15 Ohio's 2009 Significantly Excessive Earnings Test ("SEET") proceeding, and I
16 testified in AEP Ohio's 2009 FAC Audit case.⁵

² PUCO Case Nos. 08-917-EL-SSO and 08-918-EL-SSO, Entry (May 4, 2011) and Entry (May 25, 2011).

³ PUCO Case Nos. 08-917-EL-SSO and 08-918-EL-SSO.

⁴ They include, but are not limited to, PUCO Case Nos. 11-155-EL-RDR, 11-1337-EL-RDR, 10-163-EL-RDR, 11-1361-EL-RDR, 09-756-EL-ESS, 09-786-EL-UNC and 10-1261-EL-UNC.

⁵ PUCO Case Nos. 10-1261-EL-UNC, 09-872-EL-FAC and 09-873-EL-FAC.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q7. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A7. My testimony has two purposes. One is to evaluate whether AEP Ohio has presented a basis to justify collecting POLR and environmental carrying charges from customers. The second purpose is to propose and explain several adjustments that should be made to current ESP rates and to the phase-in deferral balance that is scheduled to be collected from customers during the period from 2012 to 2018.

Q8. PLEASE SUMMARIZE THE RECOMMENDATIONS IN YOUR TESTIMONY.

A8. Based on the filings made by AEP Ohio in the remand proceeding, I conclude that AEP Ohio has not produced evidence of its "actual POLR costs." AEP Ohio also failed to provide any support that a non-cost-based POLR--in this instance the result of the Black-Scholes option pricing model--is just and reasonable. I recommend that the Commission order AEP Ohio to remove the POLR charges (POLR Charge Riders) from the rates for the entire ESP period. Specifically, AEP Ohio should be ordered to return to customers the POLR revenues that have been collected subject to refund since June 2011, and discontinue the collection of POLR revenues from customers for the remainder of 2011 after the conclusion of the remand proceeding. I also recommend that the POLR charges collected from customers from April 2009 until May 2011 be returned to customers by reducing

1 the phase-in FAC deferral balance that is to be collected from customers starting
2 in 2012.

3
4 As for the environmental carrying charges, AEP Ohio should be ordered to return
5 to customers the environmental carrying charge revenues that have been collected
6 subject to refund since June, 2011. AEP should also discontinue the collection of
7 existing environmental carrying charges from customers for the remainder of
8 2011 after the conclusion of the remand proceeding. I also recommend that the
9 environmental carrying charges collected from customers from April 2009 up
10 until May 2011 be returned to customers by adjusting the FAC phase-in deferral
11 balance that is to be collected from customers starting in 2012. My
12 recommendations are based on the fact that there is no specific provision in the
13 statute that would allow these carrying charges to be included in an ESP.

14
15 I propose two types of adjustments in the rates and provisions of AEP Ohio's first
16 ESP to eliminate the POLR charges and environmental carrying charges. They
17 are a reduction in the base generation rate (or "Adjusted Non-FAC Generation
18 Charges"), and the elimination of the POLR charge. These two adjustments apply
19 to both CSP and OPC.

20
21 As the remand process is on-going, there are three different time periods upon
22 which these adjustments are implemented. For the time period from April 2009
23 through May 2011, the revenues collected through POLR charges and

1 environmental carrying charges should be deducted from AEP Ohio's phase-in
2 FAC deferral balance. More specifically, the FAC phase-in deferral balance
3 (including both deferred fuel expense and the carrying costs of that deferred fuel
4 expenses) should be re-calculated for the period of April 2009 to May 2011. I
5 have been advised by counsel that this prospective reduction in FAC phase-in
6 deferral balance as a result of the re-calculation does not constitute a retroactive
7 change to the rates that were in effect before the Remand Decision.

8
9 During the months of June 2011 through the time when the remand proceeding is
10 concluded, the revenues collected through the POLR charges and environmental
11 carrying charges should be returned to customers with interest.⁶ The amount of
12 POLR revenues returned to customers should include the entire POLR charge as
13 directed by the Commission.⁷ I define the "entire POLR charge" as the revised
14 POLR Charge Riders filed by the Companies on May 27, 2011. For the
15 remaining months of 2011 after the conclusion of the remand proceeding, a lower
16 base generation rate should become effective and the POLR charges should be
17 withdrawn from AEP Ohio's tariffs.

⁶ It is not known at this time when the remand proceeding will conclude. I am not suggesting that the remand proceeding needs to be completed within a specific period of time. The dates used here are for illustration purpose.

⁷ PUCO Case Nos. 08-917-EL-SSO et al., Entry (May 25, 2011) at 4.

III. CARRYING CHARGES ON ENVIRONMENTAL INVESTMENTS

Q9. WHAT IS YOUR UNDERSTANDING REGARDING THE COLLECTION OF ENVIRONMENTAL CARRYING CHARGES UNDER AEP OHIO'S FIRST ESP?

A9. Under AEP Ohio's first ESP, the annual carrying charges on environmental investments are collected through two different rates. The annual incremental carrying charges associated with the environmental investments made during the 2001 through 2008 period are collected through the base generation rate.⁸ This base generation rate containing the incremental carrying charges on environmental investments made from 2001 through 2008, is in effect through the end of 2011. The annual carrying charges on the environmental investments made after January 1, 2009, on the other hand, are being collected through an EICCR that is updated annually.⁹ My testimony addresses the base generation rate.

Q10. DO YOU BELIEVE THAT THE CARRYING CHARGES COLLECTED BY THE COMPANIES FOR THEIR 2001 THROUGH 2008 ENVIRONMENTAL INVESTMENTS ARE AUTHORIZED UNDER THE LAW?

⁸ AEP Ohio claimed that the \$110 million requested and approved in the first ESP represented only the portion of the annual carrying charges not presently reflected in the Companies' 2008 SSO rates. See PUCO Case Nos. 08-917-EL-SSO et al., Direct Testimony of J. Craig Baker at 25.

⁹ AEP Ohio sought to establish the initial EICCR for both CSP and OPC on February 28, 2010, and the Commission approved the initial EICCR on August 25, 2010. See PUCO Case No. 10-155-EL-RDR.

1 **A10.** No. I have been advised by counsel that there is no specific provision within R.C.
2 4928.143(B)(2) that would allow these carrying charges to be included in an
3 electric utility's ESP. It is OCC's position, confirmed by the Ohio Supreme
4 Court,¹⁰ that the statute permits an ESP to include only items listed in the statutes,
5 not unlisted items. I would note that subsection (B)(2)(b) of the statute makes it
6 clear that the General Assembly did not permit capital asset investments that
7 predate the January 1, 2009 SSO offering to be included as part of the electric
8 security plan. To suggest that the General Assembly would not allow capital
9 investment predating the January 1, 2009 SSO and yet allow carrying charges on
10 that disallowed investment seems illogical.

11
12 **Q11. IF THE COMMISSION AGREES WITH OCC AND DETERMINES THAT**
13 **THERE IS NO BASIS FOR COLLECTING THE ENVIRONMENTAL**
14 **CARRYING CHARGES, SHOULD THE CURRENT BASE GENERATION**
15 **RATES IN THE ESP BE MODIFIED?**

16 **A11.** Yes. As advised by counsel, the annual carrying charges associated with the
17 environmental investments made from 2001 through 2008 should be removed
18 from the ESP rates. I have reviewed the compliance tariffs and work papers filed
19 by AEP Ohio in the first ESP, and can confirm that these particular environmental
20 carrying charges have been collected through the base generation rates since April
21 2009.¹¹

¹⁰ See Remand Decision at 12, Paragraph 31.

¹¹ Based on the Compliance work papers filed by the Companies on July 28, 2009 in PUCO Case Nos. 08-917-EL-SSO and 08-918-EL-SSO.

**Q12. PLEASE IDENTIFY THE EFFECT OF YOUR RECOMMENDATION
REGARDING THE CARRYING CHARGES ASSOCIATED WITH THE 2001
THROUGH 2008 ENVIRONMENTAL INVESTMENTS.**

A12. I have calculated the amount of incremental carrying charges associated with the 2001 through 2008 environmental investments to be \$110 million (\$26 million collected from CSP's customers and \$84 million from OPC's customers) per year during the first ESP period.¹² If my recommendation to eliminate the carrying charges on the 2001 through 2008 environmental investments were accepted by the Commission, the customers of AEP Ohio would have saved about \$330 million in base generation rates during the three-year term of the first ESP.¹³ I estimate that \$266 million has been collected (\$63 million from CSP's customers and \$203 million from OPC's customers) from April 2009 through May 2011. For the last seven months of 2011, I estimate that \$64 million in environmental carrying charges is either collected subject to refund or is still to be collected by AEP Ohio (\$15 million from CSP's customers and \$49 million from OPC's customers).¹⁴ See Attachment DJD-C.

¹² These amounts were derived based on the compliance tariffs and work papers that were filed by AEP Ohio after the Commission's Entry on Rehearing on July 23, 2009 in PUCO Case Nos 08-917-EL-SSO and 08-918-EL-SSO. They were projected revenues to be collected through ESP rates. The Entry on Rehearing re-affirmed the Commission's earlier decision on March 18, 2009 related to the collection of environmental carrying charges by AEP Ohio.

¹³ The \$330 million saving is an estimate assuming the total electricity usage and usage by individual classes of customers remain the same from 2008 to 2011. The actual revenues collected and to be collected may be higher or lower than the estimated figures.

¹⁴ These revenue figures are derived based on the assumption that the annual revenue is collected equally each month of the year.

1 **IV. PROVIDER OF LAST RESORT CHARGE**

2
3 ***Q13. WHAT IS YOUR UNDERSTANDING OF THE REMAND DECISION***
4 ***REGARDING THE POLR CHARGE IN AEP OHIO'S FIRST ESP?***

5 ***A13.*** It is my understanding that the Court reversed the provisions of the ESP order
6 authorizing the POLR charge.¹⁵ The Court stated: "In short, the manifest weight
7 of the evidence contradicts the commission's conclusion that the POLR charge is
8 based on cost."¹⁶ The Court also indicated that there is no evidence supporting the
9 Commission's characterization of this charge as based on cost.¹⁷ The Court did
10 allow the Commission to revisit the POLR issue. The Court stated that it
11 expressed no opinion on whether a formula-based POLR charge is *per se*
12 unreasonable or unlawful, and advised that the Commission may consider on
13 remand whether a non-cost-based POLR charge is reasonable and lawful.¹⁸

14
15 ***Q14. WHAT IS YOUR UNDERSTANDING OF THE POLR CHARGE, OR THE***
16 ***POLR CHARGE RIDER, CURRENTLY IN AEP OHIO'S TARIFFS?***

17 ***A14.*** I have reviewed the POLR-related tariffs of CSP and OPC currently in effect and
18 those in effect from April 2009 to May 2011. Specifically, I reviewed the
19 Provider of Last Resort Charge Rider, Sheet No. 69-1 for CSP, and Sheet No. 69-
20 1 for OPC filed by the Companies on May 27, 2011, and the same tariff sheets

¹⁵ See Remand Decision at 11, Paragraph 29.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ See Remand Decision at 11, Paragraph 30.

1 filed by the Company on March 30, 2009. Based on my review, for each utility,
2 there is only one POLR Charge Rider that lists a schedule of rates for different
3 classes of customers. There are no separate rate schedules listing a POLR charge
4 embedded in the 2008 rates and a POLR charge reflecting the increase in POLR
5 as approved in the first ESP. The Commission approved one POLR charge for
6 CSP and one POLR charge for OPC.

7
8 Despite this, AEP Ohio filed the revised tariffs on May 11, 2011 that erroneously
9 kept a portion of POLR (approximately \$52 million) in rates. This portion
10 apparently represents the POLR embedded in the 2008 rates.¹⁹ I have been
11 advised by counsel that the Commission entry issued on May 25, 2011 was very
12 clear that the POLR charge collected subject to refund referred to the entire
13 revenue collected under the POLR Charge Rider, not just a part of it.²⁰ This is the
14 same definition of POLR charge I use throughout my testimony.

15
16 ***Q15. WHAT ADJUSTMENTS DO YOU PROPOSE REGARDING THE***
17 ***REVENUES TO BE COLLECTED THROUGH THE POLR CHARGE?***

18 ***A15.*** I recommend that the PUCO order AEP Ohio to remove the entire POLR charge
19 currently in the ESP rates and return to customers the full amount of POLR
20 revenues collected since April 2009 plus interest. AEP Ohio presents no

¹⁹ The tariffs filed on May 11, 2011 were later replaced the revised tariffs filed by AEP Ohio on May 27, 2011. I estimate the \$52 million (\$14,007,101 embedded in CSP's 2008 rates, and \$38,091,727 in OPC's 2008 rates) based on the compliance tariffs and work papers that were filed by AEP Ohio in PUCO Case Nos. 08-917-EL-SSO and 08-918-EL-SSO.

²⁰ PUCO Case Nos. 08-917-EL-SSO et al., Entry (May 25, 2011) at 4.

1 additional and credible evidence regarding the actual costs of providing POLR
2 service in the remand proceeding. Even though it did not explicitly state that the
3 POLR charge set in the first ESP was based on the value to the customers, AEP
4 Ohio in effect set the POLR charge based on the value to customers for the option
5 of shopping for electricity. It is unreasonable and counter to state electric service
6 policies to allow AEP Ohio to price a monopoly service, POLR, based on the
7 supposed value of this service to customers.²¹ Rather, the POLR charge should be
8 cost-based. On this basis, which I develop later in my testimony, and the fact that
9 AEP Ohio has not provided any credible evidence regarding the actual costs of
10 providing POLR service, I recommend the Commission find that the existing
11 POLR charge was not justified and should be discontinued. The PUCO should
12 order the rates being collected subject to refund since June 2011 be returned to
13 customers with interest.

14
15 For the POLR revenues that have been collected from April 2009 to May 2011,
16 the Commission should find such collection was not reasonable and justified and
17 should order the phase-in FAC deferrals that are to be collected from customers in
18 2012 through 2018 be reduced by the amount of POLR revenues already collected
19 from customers. Another OCC witness, Mack A. Thompson, in his testimony,
20 provides additional reasons to discontinue the POLR charge and return the POLR
21 revenues being collected.

²¹ For example, it is a state policy to ensure the availability to consumers of adequate, reliable, safe, efficient, nondiscriminatory, and reasonably priced retail electric service. See R.C. 4928.02(A).

1 **Q16. PLEASE EXPLAIN WHY AEP OHIO'S POLR CHARGE IS NOT BASED ON**
2 **ITS ACTUAL COSTS OF PROVIDING THE POLR SERVICE.**

3 **A16.** There is hardly any dispute that AEP Ohio, in the record of its first ESP
4 proceeding, did not provide evidence regarding actual costs associated with the
5 provision of POLR. The Court recognized this and stated that:

6 Contrary to the order, this formula simply does not reveal “the cost
7 to the Companies to be the POLR and carry the risks associated
8 therewith.” The Record shows the model does not even purport to
9 estimate costs, but instead tries to quantify “the value of the
10 optionality [to shop for power] that is provided to customers under
11 Senate Bill 221.” *Value to customers* (what the model shows) and
12 *cost to AEP* (the purported basis of the order) are simply not the
13 same thing.²²

14
15 After reviewing the testimonies AEP Ohio filed in the remand proceeding on June
16 6, 2011, I still cannot find any evidence regarding the actual costs to AEP Ohio
17 for providing POLR service. Even though AEP repeatedly uses the term “cost of
18 the option” to characterize the POLR charge, it is clear that the proposed POLR
19 charge has nothing to do with the costs of providing customers the option of
20 switching and returning by AEP Ohio.

²² See Remand Decision at 10, Paragraph 26.

1 In her testimony, AEP Ohio witness Thomas confirms that: (1) POLR is a
2 monopoly service that can only be provided by an electric distribution utility
3 (“EDU”), not by a competitive retail electric service (“CRES”) provider;²³ (2) the
4 current POLR charge does not represent the cost of capacity and energy to serve
5 the customer;²⁴ and (3) the Companies intend to continue collecting the
6 previously-approved POLR rates for the remaining months of the first ESP.²⁵
7 Thomas further confirms that the previously approved POLR rates in the first ESP
8 were indeed developed based on the methodology, the “Black Scholes option
9 model,” initially supported by AEP Ohio witness Baker in the first ESP.²⁶
10 Thomas defers to two other witnesses, Drs. LaCasse and Makhija, on why there is
11 a “definite and significant” cost to the Companies associated with providing
12 customers this flexibility of switching power suppliers in response to changes in
13 market prices.²⁷ But that alleged definite and significant cost to AEP Ohio for
14 providing POLR service was never quantified or demonstrated. Instead AEP
15 Ohio only provides some vague descriptions of the cost as the risk or liability
16 associated with being a provider of last resort, as can be seen in the testimony of
17 Dr. Makhija.²⁸

²³ According to AEP Ohio, only Ohio EDUs incur the POLR obligation and the CRES providers do not have the POLR obligation. In other words, only EDUs can provide POLR service. See Direct Testimony of Laura J. Thomas at 3-5.

²⁴ Thomas testimony at 9-10.

²⁵ Thomas testimony at 16.

²⁶ Thomas testimony at 12-16.

²⁷ Thomas testimony at 3.

²⁸ Direct Testimony of Anil Makhija at 3-4.

1 ***Q17. PLEASE COMMENT ON DR. MAKHIJA'S STATEMENT THAT "THE***
2 ***COST TO THE UTILITY THAT PROVIDES THE POLR OPTIONALITY IS***
3 ***NO MORE OR LESS THAN THE VALUE OF THE OPTIONS RECEIVED***
4 ***BY THE CUSTOMERS"***²⁹ ***AND HIS TESTIMONY IN GENERAL IN THE***
5 ***REMAND PROCEEDING.***

6 ***A17.*** I do not agree with this statement by Dr. Makhija in his testimony supporting
7 AEP Ohio's POLR methodology. The value of the switching option to the
8 customers is not the "opportunity cost" of POLR to the utility. The value of the
9 switching option to the customers is not the "carrying cost" of the POLR to the
10 utility. More importantly, the value of the switching option is certainly not the
11 "actual cost" of POLR to the utility.

12
13 In addition, I am not aware of any empirical evidence that can support this
14 particular statement made by Dr. Makhija in his testimony. Furthermore, none of
15 AEP Ohio's witnesses provide any such empirical evidence that shows that the
16 value to customers for the option of shopping for power is equal to the actual
17 costs to AEP Ohio in providing such an option.

18
19 Dr. Makhija's testimony in the remand proceeding does not provide any
20 additional support for AEP Ohio's assertion that its POLR charge is based on the
21 cost of providing such a service and that this cost equals the value to the customer
22 who receives the service. In his testimony, Dr. Makhija discusses in general

²⁹ Makhija Testimony at 4, lines 1-2.

1 terms the cost, the liability, and a “diminution” in equity value to a hypothetical
2 utility and, to a less extent, AEP Ohio.³⁰ However, Dr. Makhija provides no
3 estimates of the actual cost, liability, or diminution in equity value to AEP Ohio
4 as a result of providing POLR to its customers. In addition, there is no discussion
5 in his testimony regarding whether AEP Ohio is insulated from the effects of the
6 cost, liability, or diminution in equity value associated with providing POLR
7 service under the current regulatory framework in Ohio.

8
9 It is one thing to say there is an unspecified, unquantified cost associated with
10 providing POLR to customers. It is another thing to proclaim that the cost to the
11 utility of providing POLR equals the value to the customers of receiving the
12 service. This particular statement by Dr. Makhija in his testimony lacks support
13 in economic theory and in fact. It should be rejected.

14
15 ***Q18. PLEASE COMMENT ON DR. LACASSE’S STATEMENT THAT “AN***
16 ***OPTION VALUATION MEASURES THE EXPECTED COST ON AN A***
17 ***PRIORI BASIS. WHILE THE ACTUAL, AFTER-THE-FACT COST MAY***
18 ***DIFFER FROM THE EXPECTED COST, FROM A RATEMAKING***
19 ***PERSPECTIVE, THE EXPECTED COST IS THE RELEVANT***
20 ***MEASURE.”³¹***

³⁰ Makhija Testimony at 3-5.

³¹ Direct Testimony of Chantale LaCasse at 12, lines 20-22.

1 **A18.** I do not agree with this statement by Dr. LaCasse. It is my understanding that, for
2 the past half century, the actual cost (or the after-the-fact cost) has always been
3 the primary measurement in setting the price of a monopoly service, such as
4 electric distribution service or POLR. The validity of using actual cost in setting
5 rates for monopoly service is evidenced by the common practice of determining
6 the operating expenses of a utility in a “test year” and the fixing of the rate base at
7 a “date certain” in most rate case proceedings in the United States. Indeed this is
8 the practice followed by the PUCO, as mandated by Ohio statute, for pricing non-
9 competitive electric services. There is no basis for her claim that the actual cost
10 (or after-the-fact cost) is not a relevant measure for ratemaking purposes in the
11 case of POLR. She has not provided any valid economic or legal basis for this
12 particular position.
13

14 ***Q19. DOES AEP OHIO PROPOSE A POLR CHARGE BASED ON THE VALUE***
15 ***OF THE OPTION TO CUSTOMERS TO SHOP FOR ELECTRICITY?***

16 **A19.** While AEP Ohio does not explicitly state that its POLR charge is based on the
17 value of the option of shopping to customers, AEP Ohio’s proposed POLR charge
18 was and still is based on the Black-Scholes option pricing model. Specifically, in
19 the Companies’ first ESP case, AEP Ohio witness Baker stated that “AEP used
20 the Black-Scholes option pricing model to calculate the value of its POLR
21 obligation.”³² He further stated that, “Among its many applications, it is used
22 extensively to provide basic benchmarking pricing for equity and commodity

³² PUCO Case Nos. 08-917-EL-SSO et al, Direct Testimony of J. Craig Baker at 31.

options.”³³ In the remand phase of this proceeding, AEP witness Thomas also confirms that the Companies intend to continue collecting the previously-approved POLR rates for the remaining months of the first ESP.³⁴ Consequently, the POLR charge collected by AEP Ohio in the first ESP was based on the claimed value of the shopping option, not on the actual cost of providing the POLR service.

Q20 PLEASE EXPLAIN WHY A VALUE-BASED PRICE SHOULD NOT BE USED IN SETTING THE POLR CHARGE FOR AEP OHIO.

A20. As advised by counsel, the Remand Decision does not rule out the use of a non-cost justification for setting a POLR charge. However, I find that the Black Scholes option pricing model used by the Companies to set the POLR charge is unreasonable and should be rejected by the Commission. In essence, this value-based pricing of POLR allows AEP Ohio, as a monopoly provider of POLR, to extract, from customers, all the economic value to the customers for having the option to shop for electricity.

By allowing value-based pricing, a monopoly provider can exercise its market power to set the price that will maximize its profit at the expense of its customers.³⁵ The price set through the use of a monopoly position of the supplier

³³ Ibid.

³⁴ Thomas testimony at 16.

³⁵ See, for example, Jack Hirshleifer, Amihai Glazer, and David Hirshleifer, *Price Theory and Applications*, Seventh Edition (Cambridge University Press, Cambridge, 2005), Chapter 8; and Hal R. Varian, *Microeconomic Analysis* (W. W. Norton & Company, New York, 1978), Chapter 2.

1 will be higher than both the price likely to prevail in a competitive market and the
2 cost-based price being set by a regulatory agency.³⁶ Such negative effects on
3 economic efficiency and equity are well recognized in the field of
4 microeconomics.³⁷ As noted by a well-known public utility economist, Charles F.
5 Phillips:

6 From the point of view of society, monopoly keeps output from
7 being maximized. And, in addition, the monopolist's plant is not
8 being used efficiently. Society does not get the full potential
9 advantages of economies of scale. In short, price is higher, profit
10 excessive, output smaller, and fewer resources are used under
11 conditions of pure monopoly as compared with perfect
12 competition.³⁸

13
14 I am not aware that any state public utility commission in the United States has
15 set the price of a monopoly-supplied electric utility service based on the value of
16 the service to the customers who receive the service. This value-based pricing
17 methodology currently in place for pricing AEP Ohio's POLR service is
18 unreasonable and contrary to public interest. It should be rejected.

³⁶ Ibid.

³⁷ Ibid.

³⁸ See Charles F. Phillips, Jr., *The Regulation of Public Utilities: Theory and Practice*, Second Edition, Public Utilities Reports, Inc. (1988), at 56-57.

1 ***Q21. PLEASE SUMMARIZE YOUR RECOMMENDATION REGARDING THE***
2 ***POLR CHARGE CURRENTLY COLLECTED THROUGH THE ESP RATES.***

3 ***A21.*** Under the current regulatory framework in Ohio, there are no alternative suppliers
4 for POLR service within the service territory of AEP Ohio. AEP Ohio's POLR
5 charge, which was approved by the Commission as a distribution charge, should
6 be set in the same way as other distribution-related services. At the present time,
7 electric distribution service in Ohio is still being fully regulated by the PUCO and
8 the rates for distribution services are based on the actual costs incurred by the
9 utility (such as AEP Ohio) in providing the distribution service. There is no valid
10 economic and regulatory basis not to set the POLR charge based on the actual
11 cost of providing the POLR service.

12
13 I understand that there is also precedent for establishing POLR on a cost basis. I
14 am aware that in the another ESP case (FirstEnergy's first ESP filed on July 31,
15 2008), the Commission found that the standby charges for generation should be
16 based upon the actual, prudently-incurred costs to the electric utility of hedging
17 against the risk of customers returning to the Standard Service Offering.³⁹ The
18 Commission accepted the proposed rate subject to review and reconciliation on a
19 quarterly basis to insure that it reflected the EDU's actual prudently-incurred

³⁹ PUCO Case No. 08-935-EL-SSO, Opinion and Order at 28-29 (December 19, 2008).

1 costs.⁴⁰ The Commission should, consistent with the approach taken in the
2 FirstEnergy case,⁴¹ establish POLR based on actual, prudently incurred costs.
3
4 AEP Ohio had the opportunity to propose a POLR charge based on the actual cost
5 of providing this service when it first proposed the ESP in 2009 and chose not to.
6 AEP Ohio had the opportunity again in the remand phase to propose a POLR
7 charge that is based on actual cost. AEP Ohio has not done so. In the absence of
8 any credible evidence that its current POLR charge is based on actual costs, AEP
9 Ohio should not be allowed to collect the POLR charge included in its ESP rates
10 during the entire ESP period. More specifically, the Commission should order
11 AEP Ohio to return to customers the entire POLR revenues collected from April
12 2009 through the end of the first ESP.
13

14 ***Q22. HOW WOULD CUSTOMERS BENEFIT IF THE PUCO ORDERED THE***
15 ***POLR REVENUES TO BE RETURNED TO CUSTOMERS?***

16 ***A22.*** As detailed further in my testimony, the revenues collected by AEP Ohio through
17 the POLR charge during the entire ESP period can be returned to customers
18 through one of three different mechanisms. I estimate that the POLR revenue
19 collected by AEP Ohio was about \$152 million (\$97.4 million by CSP and \$54.8

⁴⁰ Ibid.

⁴¹ First Energy later withdrew the ESP Application and the parties reached a stipulation that was approved by the Commission on March 25, 2009. Under the approved stipulation, there would be no minimum default service rider and standby charge in the ESP. PUCO Case No. 08-935-EL-SSO, Stipulation and Recommendation at 10 (February 19, 2011).

1 million by OPC) per year from 2009 through 2011.⁴² The estimated entire POLR
2 revenue collected in AEP Ohio's first ESP is about \$457 million. So far during
3 the ESP period from April 2009 through May 2011, it is estimated that AEP Ohio
4 has collected about \$368 million in POLR charges (\$235.3 million through CSP
5 and \$132.4 million through OPC). Additionally, about \$89 million (\$56.8 million
6 through CSP and \$32 million through OPC) in POLR will be collected in the last
7 seven months of 2011. Currently a portion of this POLR revenues is being
8 collected, subject to refund. See Attachment DJD-D. All these figures for POLR
9 revenue are estimates only. These estimated revenues are based on the
10 assumption that the annual POLR revenue is collected equally in each month of
11 the year. It is also assumed that the total electricity usage and usage by individual
12 rate classes do not change significantly in the first ESP period from the usage
13 level assumed by AEP Ohio in the application of the first ESP.

14
15 **V. PROPOSED ADJUSTMENTS TO PHASE-IN FAC DEFERRAL**
16 **BALANCE**

17
18 ***Q23. WHAT IS YOUR UNDERSTANDING OF THE PHASE-IN FAC DEFERRAL***
19 ***BALANCE AND THE AMOUNT OF THAT DEFERRAL BALANCE***
20 ***PROJECTED AT THE END OF THE FIRST ESP, DECEMBER 31, 2011?***

⁴² Based on the Compliance work papers filed by the Companies on July 28, 2009 in PUCO case Nos. 08-917-EL-SSO and 08-918-EL-SSO.

1 **A23.** The phase-in deferral balance is comprised of the actual fuel expenses that have
2 not been collected through the FAC rates and the carrying cost associated with the
3 shortfalls of fuel expense collection.⁴³ The FAC rates during the first ESP, in
4 turn, are limited to the amount of fuel expenses that would be collected from
5 customers such that total revenues would not exceed the Commission-ordered
6 “caps” on annual revenue for CSP and OPC. According to AEP Ohio, at the end
7 of 2011, the estimated phase-in deferral balance for OPC will be about \$643
8 million. CSP is not expected to have a phase-in deferral balance.⁴⁴

9
10 **Q24. SHOULD THE VALUE OF THE PHASE-IN FAC DEFERRAL BALANCE**
11 **BE ADJUSTED TO ACCOUNT FOR YOUR PROPOSED ADJUSTMENTS**
12 **FOR ENVIRONMENTAL CARRYING COSTS AND POLR CHARGE?**

13 **A24.** Yes. The value of the phase-in FAC deferral balance should be adjusted based on
14 the results of the remand proceeding. It should be noted that there may be other
15 proceedings pending before the Commission, such as the 2009 AEP Ohio FAC
16 Audit case, and that their resolution will also affect the phase-in deferral balance.
17 I will not discuss the other proceedings at this time.

18
19 **Q25. PLEASE EXPLAIN WHY THE VALUE OF THE PHASE-IN FAC**
20 **DEFERRAL SHOULD BE ADJUSTED.**

⁴³ For a description of the method and calculation of the FAC deferral balance, see AEP Ohio's Application filed on September 30, 2009 in PUCO Case No. 09-872-EL-FAC.

⁴⁴ PUCO Case Nos. 11-346-EL-SSO et al, Direct testimony of Philip J. Nelson at 8.

1 **A25.** Under the FAC and rate caps set by the Commission in AEP Ohio's first ESP, the
2 FAC rates for CSP and OPC are essentially "residual values" between the capped
3 rates and the sum of all non-FAC rates. If the sum of all non-FAC rates (which
4 include the base generation rate, the POLR charge, and possibly other riders) were
5 reduced as a result of the remand proceeding, the allowed FAC rates (that is
6 amount of FAC expenses collected, as a residual value, from customers) would
7 increase. This type of adjustment in FAC rates was what AEP Ohio did in
8 revising OPC's allowed FAC rates on May 11, 2011 in response to the
9 Commission's May 4, 2011 order in the remand proceeding.⁴⁵ As the FAC rates
10 increase, the amount of fuel expenses being deferred, and the carrying cost
11 associated with the fuel expense deferral would decrease. Consequently, if my
12 proposed adjustments in the base generation rate and POLR were accepted by the
13 Commission, the phase-in FAC deferral balance would be reduced accordingly.

14
15 ***Q26. HOW SHOULD THE ADJUSTMENTS TO THE VALUE OF THE PHASE-IN***
16 ***FAC DEFERRAL BALANCE BE CALCULATED?***

17 **A26.** I propose that the Commission order AEP Ohio to re-calculate the amount of fuel
18 expenses deferred under the 2009 to 2011 rate caps, and the associated carrying
19 charges as a result of removing POLR and environmental carrying charges from
20 the rates in effect during the period of April 2009 to May 2011. As discussed
21 previously in my testimony, the carrying charges associated with the 2001
22 through 2008 environmental investments and the POLR charge should be

⁴⁵ See work papers for the revised tariffs provided in an e-mail by AEP Ohio to OCC on May 12, 2011.

1 removed from the rates set in AEP Ohio's first ESP. If the revised ESP rates,
2 after removing environmental carrying charges and the POLR charge, were in
3 place during the period of April 2009 to May 2011, the shortfall of fuel expense
4 collection and the associated carrying costs for CSP and OPC would be reduced.
5 The Commission should order AEP Ohio to do this re-calculation of the deferral
6 balance within a reasonable time and file the re-calculation in the public docket of
7 this case.

8
9 ***Q27. PLEASE SUMMARIZE YOUR PROPOSED ADJUSTMENTS TO THE ESP***
10 ***RATES AND PHASE-IN DEFERRAL BALANCE AS A RESULT OF THE***
11 ***ELIMINATION OF THE POLR CHARGE AND ENVIRONMENTAL***
12 ***CARRYING CHARGES.***

13 ***A27.*** I propose two types of adjustments in rates and each of these two adjustments are
14 applicable to three time periods from 2009 through 2011 when AEP Ohio's first
15 ESP is in place. The two adjustments in rates are: 1) a reduction in base
16 generation rates, and 2) the elimination of the POLR charge. The three time
17 periods are: 1) April 2009 to May 2011, before the Commission ordered AEP
18 Ohio to collect the POLR charge (the POLR Rider tariff) and environmental
19 carrying charges subject to refund; 2) June 2011 to the time when the remand
20 proceeding is concluded and new rates associated with the POLR charge and
21 environmental carrying charges are put into effect; and 3) the time from when the
22 remand proceeding concludes to the end of the first ESP on December 31, 2011.

1 For the time period of April 2009 through May 2011, I propose no retroactive
2 change to the base generation rates and the POLR charges in effect during this
3 time period. However, the revenues paid by customers through these three ESP
4 rates should be accounted for through a prospective reduction in the balance of
5 the phase-in FAC deferral balance still to be collected from customers during
6 2012 to 2018. I have estimated that the total amount for these two adjustments
7 (base generation rate and POLR charge) during this time period is \$634 million
8 (\$298 million was collected from CSP's customers and \$335 million from OPC's
9 customers). A further breakdown of the adjustments of base generation rate and
10 POLR is shown Attachment DJD-E. The estimated savings in carrying costs
11 associated with reducing the phase-in deferral balance can be calculated
12 separately and used to further reduce the phase-in deferral balance.

13
14 For the time period of June 2011 through September 2011, assuming the remand
15 proceeding is concluded no later than September 2011 and new ESP rates go into
16 effect in October, I estimate the total revenues for the POLR charge and
17 environmental carrying charges collected "subject to refund" in this four-month
18 period is \$87 million (\$41 million from CSP's customers and \$46 million from
19 OPC's customers). A further breakdown of the two types of adjustments (base
20 generation rate and POLR) is also shown in Attachment DJD-E.

21
22 For the time period of October 2011 through December 2011, once again
23 assuming the remand proceeding is concluded no later than September 2011 and

1 the new ESP rates go into effect in October, I recommend changes to AEP Ohio's
2 tariffs for the remainder of 2011. The base generation rates for CSP's customers
3 should be uniformly reduced by 6.28804%.⁴⁶ This reduction reflects the
4 elimination of the annual carrying charges associated with the environmental
5 investments made during the period of 2001 through 2008 from the base
6 generation rate. For example, for a residential customer under the rate code R-R,
7 the base generation rate should be reduced from \$0.0272515/kWh to
8 \$0.0256393/kWh.⁴⁷ The base generation rates for OPC's customers should be
9 uniformly reduced by 16.85686%.⁴⁸ This reduction reflects the elimination of the
10 annual carrying charges associated with the environmental investments made
11 during the period of 2001 to 2008 from the base generation rate. For example, for
12 a residential customer under the rate code RS, the base generation rate for the first
13 800 kWh monthly usage should be reduced from \$0.0261075/kWh to
14 \$0.0223414/kWh.⁴⁹ For the same period of time, the tariffs reflecting the POLR
15 charges for all classes of customers for both CSP and OPC should be withdrawn.

⁴⁶ See work papers for the remand revised tariffs (filed May 11, 2011) provided in an e-mail by AEP Ohio to OCC on May 12, 2011.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Ibid.

VI. INTEREST RATE ON REFUNDS

Q28. AEP OHIO WITNESS NELSON ADDRESSES THE INTEREST RATE THAT HE RECOMMENDS BE APPLIED TO REFUNDS. DO YOU HAVE A RECOMMENDATION REGARDING THE INTEREST RATE APPLICABLE TO REFUNDS?

A28. Yes. I recommend an interest rate of 10.93% for AEP Ohio as the appropriate interest rate to be applied to the refunds. See Attachment DJD-F. This interest rate is developed using the same methodology approved by the Commission in the first ESP for calculating the carrying cost on phase-in FAC deferral balance. The interest rate is the gross-of-tax weighted average cost of capital based on a 50/50 capital structure of equity and long term debt with a return on equity of 10.5% and the actual cost of long term debt (5.34%).⁵⁰ Alternatively, an interest rate that is similar to the one used by AEP Ohio to calculate the carrying costs of the FAC deferral balance during the second quarter of 2011 should be used. The interest rate used in calculating the carrying cost of the deferral balance changes monthly reflecting the change in AEP Ohio's actual cost of long-term debt.

The interest rate of 3% recommended by AEP Ohio witness Nelson in the remand proceeding is unreasonable and should be rejected.⁵¹ There is no justification to

⁵⁰ The return on equity of 10.50% was approved in AEP Ohio's first ESP. The cost of long-term debt of 5.34% is based on a recent regulatory filing made by AEP Ohio. See PUCO Case Nos. 11-346-EL-SSO, Direct Testimony of Renee V Hawkins at 5.

⁵¹ PUCO Case Nos. 08-917-EL-SSO et al, Direct testimony of Philip J. Nelson (June 6, 2011) at 5.

1 charge a higher interest rate on revenue deferred than on a refund to be returned to
2 customers. On the advice of counsel and by my own reading of Ohio
3 Administrative Code 4901:1-17-05, which is cited by AEP Ohio witness Nelson,
4 applies to a deposit by a customer that is returned to that specific customer at a
5 later point in time. That is not what AEP Ohio proposes if refunds are required by
6 the Commission. Also, the cited rule plainly does *not* state an interest rate of 3%,
7 but states that the interest rate shall be “*at least three per cent per annum.*”⁵² The
8 interest rate on refunds that I propose (10.93%) fits that description, but also has
9 the benefit of providing fair compensation for funds provided by AEP Ohio as
10 well as by its customers.

11
12 **VII. CONCLUSIONS**

13
14 ***Q29. WILL YOUR PROPOSED ADJUSTMENTS, IF APPROVED BY THE***
15 ***COMMISSION, SIGNIFICANTLY AFFECT AEP OHIO’S ABILITY TO***
16 ***OBTAIN FUNDS IN THE CAPITAL MARKET?***

17 ***A29.*** No. I do not expect these proposed adjustments alone to significantly affect the
18 ability of AEP Ohio or its parent company, AEP, to raise funds from the capital
19 market for its operation. First of all, among the total proposed adjustments of
20 \$787 million plus carrying cost, the vast majority (\$634 million plus carrying
21 cost) is a reduction of the phase-in deferral balance that is to be collected over a

⁵² Ohio Administrative Code 4901:1-17-05(B)(4) and (C) (emphasis added).

1 seven-year period from 2012 through 2018. I estimate that AEP Ohio's need for
2 additional funding as a result of not collecting the phase-in deferral balance in the
3 future years should be no more than \$111 million per year.⁵³ For the estimated
4 \$87 million plus interest to be returned to customers in 2011, if the proposed
5 adjustments were approved by the Commission, AEP Ohio should already have a
6 plan in place for financing the potential refund. As for the estimated \$66 million
7 revenue reduction for the last three months of 2011, it is a manageable amount
8 given the typical level of external funding of \$500 million or more AEP Ohio may
9 need annually in recent years.⁵⁴

10
11 ***Q30. WILL YOUR PROPOSED ADJUSTMENTS, IF APPROVED BY THE***
12 ***COMMISSION, BE BENEFICIAL TO OHIO'S ECONOMY?***

13 ***A30.*** Yes. I have no doubt that these proposed adjustments will reduce the monthly bill
14 for electricity to many customers of AEP Ohio, including commercial and
15 industrial customers. A reduction in the monthly electricity bills of these
16 customers will be a boost to the local economy in many communities within AEP
17 Ohio's service territory.

⁵³ The actual amount of annual amortization from 2012 through 2018 will depend on the actual amount of deferral balance at the end of 2011 and the interest rate required for amortization. For example, assuming a deferral balance of \$634 million and an annual interest rate of 5.34%, the amount of annual amortization is about \$111 million.

⁵⁴ According to the most recent filings made by CSP and OPC to the Commission, CSP has requested for authority to borrow up to \$650 million in short term and long-term financing from the AEP Money Pool and other sources. OPC has requested the authority to borrow up to \$900 million from AEP Money Pool and other sources. See PUCO Case Nos. 11-2319-EL-AIS, 11-2320-EL-AIS, 11-2368-EL-AIS, and 11-2369-EL-AIS.

1 Numerous studies have documented the negative effects to the economy of higher
2 energy costs.⁵⁵ Higher electricity prices will have dampening effects on consumer
3 and business spending. As the price of electricity goes up, AEP Ohio's residential
4 customers will have less money to spend on other items. In addition, higher
5 electricity rates may result in electricity service disconnections for many low-
6 income residential customers. As the price of electricity goes up, AEP Ohio's
7 many small commercial customers will see their costs of doing business increase
8 and some of them may have to close up if they are already struggling. The effects
9 of higher prices of electricity on AEP Ohio's industrial customers may be more
10 pronounced. Some industrial plants may have to shut down because their
11 products cannot compete with manufacturers in other states or other countries
12 with lower electricity prices. Further, industrial companies seeking to locate in
13 Ohio AEP territory may decide to locate elsewhere. A reduction in AEP Ohio's
14 electricity price will have the opposite effect and will be beneficial to the
15 economy of Ohio.

16
17 ***Q31. DOES THIS CONCLUDE YOUR TESTIMONY?***

⁵⁵ See, for example, Congressional Budget Office, The Economic Effects of Recent Increase in Energy Prices, July 2006; and Energy Information Administration, Annual Energy Outlook Analyses (Issues in Focus, AEO2006): Economic Effects of Higher Oil Prices.

1 **A31.** Yes. However, I reserve the right to supplement my testimony in the event that
2 AEP Ohio or the PUCO Staff submits additional testimonies or comments, or if
3 new information or data in connection with this proceeding becomes available.

ATTACHMENT DJD-A

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

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, 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. Burns, 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 Iyyuni).

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

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

ATTACHMENT DJD-B

**Testimonies of Daniel J. Duann, Ph.D. CRRA
Before the Public Utilities Commission of Ohio**

- 1. Application of The Dayton Power and Light Company for Approval of Its Electric Security Plan, Case No. 08-1094-EL-SSO.**
- 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.**
- 3. Application of Aqua Ohio, Inc. for Authority to Increase its Rates and Charges in its Masury Division, Case No. 09-560-WW-AIR.**
- 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.**
- 5. 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.**

Estimate of Revenues Collected Under Base Generation Rate for Annual Environmental Carrying Charges

	Annual Amount As Filed in ESP Tariffs (a)	Monthly Average (b)	Estimated Revenues (April 2009 - May 2011) (c)	Estimated Revenue (June 2011 - December 2011) (d)	Estimated Total ESP (April 2009 - December 2011)
Columbus Southern Power	\$26,000,000	\$2,166,667	\$62,833,333	\$15,166,667	\$78,000,000
Ohio Power	\$84,000,001	\$7,000,000	\$203,000,002	\$49,000,001	\$252,000,003
AEP Ohio	\$110,000,001	\$9,166,667	\$265,833,336	\$64,166,667	\$330,000,003

Sources:

- (a): Compliance Tariffs and Work Papers Filed on July 28, 2009, page 60 for CSP and page 71 for OPC.
 (b): Annual Amount divided by 12.
 (c): For April 2009 through December 2009 AEP Ohio was allowed to collect the full annual amount of increase resulting in a total 29 months of collections for April 2009 through May 2011.
 (d): June 2011 through December 2011 is 7 months.

Estimate of Revenues Collected Under POLR Charge Rider

	Annual Amount As Filed in ESP Tariffs (a)	Monthly Average (b)	Estimated Revenues (April 2009 - May 2011) (c)	Estimated Revenue (June 2011 - December 2011) (d)	Estimated Total ESP (April 2009 - December 2011)
Columbus Southern Power	\$97,384,098	\$8,115,342	\$235,344,904	\$56,807,391	\$292,152,294
Ohio Power	\$54,801,769	\$4,566,814	\$132,437,608	\$31,967,699	\$164,405,307
AEP Ohio	\$152,185,867	\$12,682,156	\$367,782,512	\$88,775,089	\$456,557,601

Sources:

- (a) Compliance Tariffs and Work Papers Filed on July 28, 2009, page 60 for CSP and page 71 for OP.
- (b) Annual Ammount divided by 12.
- (c) For April 2009 through December 2009, AEP Ohio was allowed to collect the annual amount of increase resulting in a total of 29 months of collection for April 2009 through May 2011.
- (d) June 2011 through December 2011 is 7 months.

Estimate of Revenues Collected (Excluding Carrying Cost on Deferral) Under Proposed Adjustments

	Base Generation Rate (a)	POLR (b)	Total
April 2009 - May 2011			
Columbus Southern Power	\$62,833,333	\$235,344,904	\$298,178,237
Ohio Power	\$203,000,002	\$132,437,608	\$335,437,610
AEP Ohio	\$265,833,336	\$367,782,512	\$633,615,848
June 2011 - September 2011			
Columbus Southern Power	\$9,666,667	\$32,461,368	\$41,128,035
Ohio Power	\$28,000,000	\$18,267,256	\$46,267,256
AEP Ohio	\$36,666,667	\$50,728,824	\$87,395,291
October 2011 - December 2011			
Columbus Southern Power	\$8,500,000	\$24,346,026	\$30,846,026
Ohio Power	\$21,000,000	\$13,700,442	\$34,700,442
AEP Ohio	\$27,500,000	\$38,046,468	\$65,546,468
Total			
Columbus Southern Power	\$78,000,000	\$292,152,294	\$370,152,294
Ohio Power	\$252,000,003	\$164,405,307	\$416,405,310
AEP Ohio	\$330,000,003	\$456,557,601	\$786,557,604

Sources:

- (a) Compliance Tariffs and Work Papers Filed on July 28, 2008 and Attachment DJD-C.
(b) Compliance Tariffs and Work Papers Filed on July 28, 2009 and Attachment DJD-D.

ATTACHMENT DUD-F

Estimation of Gross-of-Tax Weighted Average Cost of Capital of AEP Ohio

Capital	Percentage	Cost Rate*	Weighted Cost of Capital	Pre-Tax Weighted Cost of Capital**
Long-Term Debt	50%	5.34%	2.67%	2.67%
Common Stock	50%	10.50%	5.25%	8.28%
Total Capital	100%		7.92%	10.93%

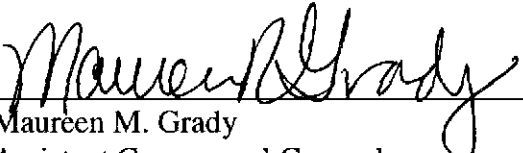
*: The return on equity of 10.50% was approved in AEP Ohio's 7th Fil ESP. The cost of long-term debt of 5.34% is based on recent regulatory filing made by AEP Ohio. See PUCO Case Nos. 11-346-EL-SSO, Direct Testimony of Renee V Hawkins et al.

** : Assuming an effective income tax rate of 36.432%

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Direct Testimony of Daniel J.

Duann was served via electronic transmission to the persons listed below on this 30th day of June, 2011.


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