

FILE

OCC EXHIBIT \_\_\_\_\_

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of	)	
Columbus Southern Power Company and	)	
Ohio Power Company for Authority to	)	Case No. 11-346-EL-SSO
Establish a Standard Service Offer	)	Case No. 11-348-EL-SSO
Pursuant to §4928.143, Ohio Rev. Code,	)	
in the Form of an Electric Security Plan.	)	

In the Matter of the Application of	)	
Columbus Southern Power Company and	)	Case No. 11-349-EL-AAM
Ohio Power Company for Approval of	)	Case No. 11-350-EL-AAM
Certain Accounting Authority.	)	

**DIRECT TESTIMONY  
of  
MACK A. THOMPSON**

PUCO

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**ON BEHALF OF  
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL**  
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*July 25, 2011*

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## **CERTIFICATE OF SERVICE**

**I. INTRODUCTION**

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

***A1.*** My name is Mack A. Thompson. My business address is 10 West Broad Street, Suite 1800, Columbus, Ohio 43215-3485. I am employed by the Office of the Ohio Consumers' Counsel ("OCC" or "Consumers' Counsel") as a Senior Energy Policy Analyst.

***Q2. WOULD YOU PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL EXPERIENCE?***

***A2.*** I graduated from Rose-Hulman Institute of Technology in 1980 with a Bachelor of Science in Mechanical Engineering, graduating *cum laude*. In 1990 I was awarded a Masters in Business Administration from the University of Illinois -- Springfield.<sup>1</sup>

I joined Illinois Power Company in 1980 and held several positions of increasing responsibility including engineer, planning engineer, project engineer, manager of load forecasting and demand side management ("DSM"), and director of distributed computing. Over the years my responsibilities included modeling of generation system production costs, generation expansion planning, engineering and technical feasibility analysis of generation plant upgrades, mothballing, retirement and environmental compliance alternatives, strategic planning, supervision of load forecasting, supervision of DSM analysis, and management of distributed computing operations. In 2000, I

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<sup>1</sup> At the time of my graduation the school was named Sangamon State University. Subsequently, it was renamed University of Illinois Springfield.

1 became an independent consultant and provided analytical, project management and  
2 strategic planning services to utility clients. In 2005, I joined the Michigan Electric  
3 Transmission Company ("METC"). As METC's Manager of Transmission Strategy and  
4 Policy I represented METC's interests in the Midwest Independent Transmission System  
5 Operator, Inc. ("MISO") stakeholder process. In 2006, I joined American Municipal  
6 Power ("AMP") as Vice President of Power Supply Services where I was responsible for  
7 power supply portfolio planning, wholesale power purchasing, the 24 hour dispatch  
8 center, evaluation of generation asset proposals, negotiation of power purchase  
9 agreements, and most energy market regulatory activities. I was responsible for the start  
10 up of AMP's North American Electric Reliability Corporation compliance program and I  
11 was a member of AMP's risk committee. In December 2010, I joined OCC as a Senior  
12 Energy Policy Analyst.

13  
14 ***Q3. WHAT ARE YOUR RESPONSIBILITIES AS SENIOR ENERGY POLICY***  
15 ***ANALYST?***

16 ***A3.*** My duties include analysis of, comments and/or testimony related to electric generation  
17 and transmission filings at the state and federal levels, participation in the PJM  
18 Interconnection, LLC ("PJM") and MISO stakeholder processes, and related policy  
19 development and implementation.

20  
21 ***Q4. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THIS***  
22 ***COMMISSION OR ANY OTHER STATE REGULATORY COMMISSION OR THE***  
23 ***FEDERAL ENERGY REGULATORY COMMISSION?***

1    **A4.**    Yes. In June 2011 I submitted testimony on the POLR issue in PUCO Cases Nos. 08-  
2            917-EL-SSO et al. on Remand. In the 1990s I submitted testimony before the Illinois  
3            Commerce Commission on behalf of Illinois Power Company. In one instance I  
4            supported Illinois Power's load forecast in a rate case docket, and in another instance I  
5            supported Illinois Power's DSM analysis in an integrated resource planning hearing. In  
6            2007, on behalf of AMP, I presented testimony at a Federal Energy Regulatory  
7            Commission technical conference on interconnection queuing practices, Docket AD08-2.

8  
9    **Q5.    WHAT DOCUMENTS HAVE YOU REVIEWED IN THE PREPARATION OF YOUR**  
10           **TESTIMONY?**

11   **A5.**    I have reviewed relevant statutes related to POLR. I have reviewed relevant discovery  
12            documents and pre-filed testimony in this, the Companies' second, ESP case (Case Nos.  
13            11-346-EL-SSO, et al.). I have reviewed relevant discovery documents, transcripts, pre-  
14            filed testimony, and entries and orders from the Companies' first ESP cases (Case Nos.  
15            08-917-EL-SSO, et al.) prior to the Remand. I have reviewed the recent Ohio Supreme  
16            Court decision ("Remand Decision") that relates to appeals taken from Columbus  
17            Southern Power Company's and the Ohio Power Company's (collectively, "Companies"  
18            or "AEP Ohio") first electric security plan ("ESP") proceeding.<sup>2</sup> I have also reviewed the  
19            Public Utility Commission of Ohio's ("Commission" or "PUCO") entries directing AEP  
20            Ohio to file revised tariffs, and to make appropriate filings in the event that AEP Ohio  
21            intends to continue collecting the Provider of Last Resort ("POLR") charges and

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<sup>2</sup> *In re Application of Columbus S. Power Co.*, Slip Opinion No. 2011-Ohio-1788.

1 environmental carrying charges pursuant to the Court's remand.<sup>3</sup> I have reviewed AEP  
2 Ohio's May 20, 2011 Initial Merit Filing on Remand ("Merit Filing") with its attached  
3 exhibits and the Companies' testimonies filed on June 6, 2011, as well as responses to  
4 relevant discovery submitted to the Companies by OCC and other interveners in the  
5 remand phase of the Companies' first ESP cases. I also reviewed transcripts of the  
6 deposition of Companies' witnesses in the remand phase of the Companies' first ESP  
7 cases. I have also reviewed the following:

- 8 • The Pricing of Options and Corporate Liabilities, Fischer Black and  
9 Myron Scholes, *Journal of Political Economy* (1973). (This article  
10 provides the original documentation of what has come to be referred to as  
11 the "Black-Scholes model").<sup>4</sup>
- 12 • The Pricing of Commodity Contracts, Fischer Black, *Journal of Financial*  
13 *Economics* (1976). (This article provides the original documentation of  
14 what has come to be referred to as the "Black model").<sup>5</sup>
- 15 • Reliability Assurance Agreement Among Load Serving Entities in the  
16 PJM Region Effective Date 2/14/2011 ("RAA"), specifically Section 8.1  
17 Fixed Resource Requirement Alternative, available on the PJM website at  
18 [www.pjm.com](http://www.pjm.com). (The RAA defines the Companies' capacity obligations as  
19 members of PJM).<sup>6</sup>

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<sup>3</sup> PUCO Case Nos. 08-917-EL-SSO and 08-918-EL-SSO, Entry (May 4, 2011) and Entry (May 25, 2011).

<sup>4</sup> Black, F., and Scholes M. (1973), "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy*, 81, no. 3, 637-654.

<sup>5</sup> Black, F. (1976), "The Pricing of Commodity Contracts", *Journal of Financial Economics* 3, 167-179.

<sup>6</sup> See Attachment MAT-1, Companies' response to OCC INT 4-149 in Case No. 11-346-EL-SSO et al.

- Option pricing tools and information provided by the Chicago Board Options exchange on their website [www.cboe.com](http://www.cboe.com). (These tools were used to evaluate the potential use of an alternative to the option pricing methodology presented by the Companies.)

**II. PURPOSE OF TESTIMONY**

**Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

**A6.** The purpose of my testimony is to:

- 1) describe the true scope and cost of the Companies' provider of last resort ("POLR") obligation,
- 2) demonstrate that the model which the Companies used to develop their proposed POLR charge, does not accurately estimate either the cost of the POLR obligation to the Companies or the value of the POLR obligation to the customer,
- 3) demonstrate that if the model's logic flaws were to be ignored and its results relied upon by the Commission, which I do not recommend, the Companies' numerical inputs to the model are incorrect, greatly exaggerate the revenues that need to be collected from AEP Ohio customers through the POLR rider, and will result in rates that are not reasonably priced for consumers, and
- 4) respond to certain assertions about POLR made by Companies' witnesses Thomas, LaCasse, and Makhija.



**III. RECOMMENDATIONS**

**Q7. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANIES' PROPOSED POLR RIDER?**

A7. I recommend that the Commission reject the Companies' request to charge customers a POLR rider because any POLR costs to the Companies are already collected from customers through other Standard Service Offer ("SSO") rate mechanisms. In other words, the POLR charge should be zero.

**Q8. IF THE COMMISSION WERE TO APPROVE A POLR RIDER WHO, SHOULD RECEIVE THE REVENUE FROM THAT RIDER?**

A8. If the Commission approves a POLR rider then the revenues generated by the rider should be used to offset fuel adjustment clause ("FAC") rider charges to the Companies' customers. This is because it is SSO customers who already pay the entire cost of POLR via the FAC rider.

**Q9. WHAT IS YOUR RECOMMENDATION REGARDING THE USE OF THE "UNCONSTRAINED OPTION MODEL"?**

A9. I recommend that the Commission reject the use of the unconstrained option (Black) model because the model does not accurately estimate the cost of POLR to the Companies or the value of POLR to customers. If the Commission were to accept the continued use of the Black model, which I do not recommend, it should order the

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<sup>7</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 18 (filed January 27, 2011).

1 Companies to make substantial corrections to the values that the Companies used as  
2 inputs to the model.

3  
4 ***Q10. WHAT IS YOUR RECOMMENDATION REGARDING THE USE OF THE***  
5 ***“CONSTRAINED OPTION MODEL”<sup>8</sup>?***

6 ***A10.*** I recommend that the Commission reject the use of the constrained option model because  
7 it uses the same basic logic and has the same shortcomings as the unconstrained Black  
8 model. If the Commission were to accept the use of the constrained option, which I do  
9 not recommend, it should order the Companies to make substantial corrections to the  
10 values that the Companies used as inputs to the model. The Commission should also  
11 order the Companies to fully disclose the calculations used in the model to PUCO Staff  
12 and intervenors prior to using the constrained model to set the POLR rate.

13  
14 ***Q11. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANIES’***  
15 ***PROPOSAL THAT THE COMMISSION APPROVE THEIR POLR***  
16 ***METHODOLOGY AND ALLOW THEM TO PROVIDE FINAL (COMPLIANCE)***  
17 ***POLR CHARGES ONCE THE ESP RATES, COMPETITIVE BENCHMARK***  
18 ***PRICES, AND SWITCHING RULES BECOME FINAL IN THIS PROCEEDING?<sup>9</sup>***

19 ***A11.*** I recommend that the Commission not separately approve a POLR methodology. An  
20 understanding of how the final inputs to the model could impact the resulting calculation  
21 is critical to the review and approval of the methodology. Assumptions at issue in this

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<sup>8</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 18 (filed January 27, 2011).

<sup>9</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 22 (filed January 27, 2011).

1 proceeding have the potential to either eliminate or more than double the Companies'  
2 calculated POLR charge.

3  
4 **IV. A DESCRIPTION OF THE COMPANIES' POLR OBLIGATION AND THE**  
5 **TRUE COST OF MEETING THE OBLIGATION.**

6  
7 **A. THE POLR OBLIGATION DEFINED.**

8  
9 ***Q12. PLEASE DESCRIBE THE COMPANIES' PROVIDER OF LAST RESORT***  
10 ***OBLIGATION.***

11 ***A12.*** The POLR obligation derives from state statutes. An electric distribution utility ("EDU")  
12 has an obligation to "provide consumers, on a comparable and nondiscriminatory basis  
13 within its certified territory, a standard service offer of all competitive retail electric  
14 services necessary to maintain essential electric generation service."<sup>10</sup> Another statute,  
15 provides that a competitive retail electric service ("CRES") supplier's failure to provide  
16 retail electric generation service to customers within an EDU's certified service territory  
17 results in the customers of that supplier "defaulting to the utility's standard service  
18 offer...until the customer chooses an alternative supplier."<sup>11</sup> Thus, I conclude that an  
19 EDU's POLR obligation is not statutorily linked to the rights of customers to switch to an  
20 alternative generation supplier, but is linked to the need for the EDU to provide SSO

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<sup>10</sup> Ohio Revised Code ("ORC") 4928.141(A).

<sup>11</sup> ORC 4928.14.

1 service to customers returning from CRES service, regardless of the reason for the  
2 customers' return.

3  
4 **Q13. IN HER TESTIMONY, COMPANIES' WITNESS THOMAS CLAIMS THAT THE**  
5 **COMPANIES HAVE A POLR OBLIGATION "BECAUSE ALL CUSTOMERS ARE**  
6 **FREE TO SWITCH TO RECEIVE GENERATION SERVICE FROM A CRES**  
7 **PROVIDER EITHER ON AN INDIVIDUAL BASIS OR AS PART OF**  
8 **GOVERNMENTAL AGGREGATION."**<sup>12</sup> **DO YOU AGREE WITH HER**  
9 **CHARACTERIZATION OF THIS AS A POLR OBLIGATION?**

10 **A13.** No. The POLR obligation is not tied to the ability of customers to switch to a CRES  
11 (Competitive Retail Electric Service) provider. The ability of customers to switch to  
12 another provider of generation service, and the business risk associated with that ability,  
13 is not unique to the Companies. Rather it is a migration risk that EDUs and CRES  
14 providers face as a result of competition. Instead, the POLR obligation is, as noted by the  
15 statute, tied to the ability of customers to return to the Companies' SSO generation  
16 service.

17  
18 **Q14. HOW DOES YOUR DEFINITION OF POLR COMPARE TO THE COMMISSION'S**  
19 **DEFINITION OF POLR IN ITS ORIGINAL OPINION AND ORDER ISSUED IN**  
20 **PUCO CASE NOS. 08-917-EL-SSO ET AL.?**

21 **A14.** In its March 18, 2009 order in Case Nos. 08-917-EL-SSO et al. the Commission found  
22 that:

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<sup>12</sup> Direct Testimony of Laura J Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 13 (filed January 27, 2011).

1           ***“Therefore, based on the record before us, we conclude that the***  
2           ***Companies’ proposed ESP should be modified such that the POLR rider***  
3           ***will be based on the cost to the Companies to be the POLR and carry the***  
4           ***risks associated therewith, including the migration risk.”***<sup>13</sup>

5  
6           In that case the “migration risk” referred to by the Commission was the term used by  
7           Staff witness Cahaan to describe the risk that a customer could leave and take service  
8           from a CRES provider.<sup>14</sup> Notably, Staff Witness Cahaan concluded that the migration  
9           risk was not a POLR risk<sup>15</sup>, which is the very same conclusion I have reached.

10  
11   ***Q15. WHY SHOULD THE COMMISSION MAKE A DIFFERENT FINDING***  
12   ***REGARDING MIGRATION RISK IN THIS CASE?***

13   ***A15.*** As the text quoted above indicates, the Commission made a finding based on the record  
14           before it and the arguments presented by the parties. While precedent is important,  
15           precedent should not preclude the Commission from fully considering the evidence and  
16           arguments presented in this case.

17  
18   ***Q16. DO THE COMPANIES INCUR A POLR COST ASSOCIATED WITH A***  
19   ***CUSTOMER’S RIGHT TO SWITCH TO A CRES PROVIDER?***

---

<sup>13</sup> Opinion and Order in Case Nos. 08-917-EL-SSO et al. dated March 18, 2009, page 40 (emphasis added).

<sup>14</sup> Opinion and Order in Case Nos. 08-917-EL-SSO et al. dated March 18, 2009, Page 39. “[T]he other risk is that the customers leave and take service from a CRES provider (migration risk) (Staff Ex. 10 at 6).”

<sup>15</sup> Case Nos. 08-917-EL-SSO et al., Tr. Vol. XIII at pages 55 and 56.

1   **A16.** No. The Companies will not incur any POLR costs until the customer returns to SSO  
2       service. The Companies may incur lost revenue associated with the loss of a customer to  
3       a CRES supplier, but suppliers in all competitive industries face the risk of customers  
4       switching and the associated lost revenue. CRES suppliers face that risk, and yet no one  
5       would argue that CRES suppliers have a POLR obligation. The revenue lost due to  
6       switching is a consequence of operating in a competitive market; it is not a risk that is  
7       unique to a distribution company providing POLR service and therefore it is not a  
8       consequence of being required to provide POLR service.

9  
10   **Q17. IS THE COMPANIES' ALLEGED INABILITY TO HEDGE THEIR RISK VIA**  
11       **FORWARD SALES A MIGRATION RISK?**

12   **A17.** No. That is a separate issue that requires a determination of the revenue the Companies  
13       could potentially receive from capacity and energy sales if they did not have the POLR  
14       obligation. It is not associated with the risk of customers switching to a CRES provider.  
15       I further explain this issue later in my testimony.

16  
17   **Q18. WHAT WOULD A PAYMENT THAT COMPENSATES THE COMPANIES FOR**  
18       **THE RISK OF REVENUE LOSS DUE TO CUSTOMER SWITCHING**  
19       **REPRESENT?**

20   **A18.** Such a payment would essentially compensate the Companies for their risk of being non-  
21       competitive in the retail market and would advantage the Companies over their

1 competitors.<sup>16</sup> There is no reason for the Commission to favor one generation competitor  
2 in the market (in this case a distribution company) over another competitor.

3  
4 **B. THE COMPANIES WILL BE FULLY COMPENSATED FOR THEIR**  
5 **POLR COSTS UNDER THEIR SSO RATES EVEN WITHOUT THE POLR**  
6 **RIDER.**

7  
8 ***Q19. WHAT COSTS COULD THE COMPANIES INCUR AS A RESULT OF THE POLR***  
9 ***OBLIGATION?***

10 ***A19.*** Upon a customer's return from CRES service, the Companies could incur incremental  
11 capacity and energy costs due to the incremental increase in load associated with a  
12 returning customer; however, as I discuss below, the Companies will be fully  
13 compensated for these incremental costs under their SSO rate even without the POLR  
14 rider.

15  
16 ***Q20. HOW DID YOU DETERMINE THAT THE COMPANIES ARE FULLY***  
17 ***COMPENSATED FOR THEIR POLR COSTS THROUGH THE SSO RATE?***

18 ***A20.*** A customer returning from CRES will pay the SSO generation rate. The potential  
19 negative impact associated with a returning customer arises because a customer could  
20 return at a time when the cost of producing/purchasing power is higher than that assumed

---

<sup>16</sup> Companies witness LaCasse confirms that the POLR payment being calculated by the Companies is the value of expected lost revenues. Direct Testimony of Dr. Chantale LaCasse on Behalf of Columbus Southern Power Company and Ohio Power Company filed July 6, 2011, page 14, lines 1-7.

1 when the SSO rate was developed.<sup>17</sup> The Companies may have a negative financial  
2 impact from being the POLR only if there is a cost of providing service to a returning  
3 customer that is not already collected through the remainder of the SSO rate structure.  
4

5 ***Q21. ARE INCREMENTAL CAPACITY COSTS ASSOCIATED WITH A RETURNING***  
6 ***CUSTOMER FULLY RECOVERED VIA THE SSO RATE?***

7 ***A21.*** Yes. The Companies' SSO rates fully compensate the Companies for their cost of  
8 capacity to serve a customer. In compliance with PJM Fixed Resource Requirement  
9 ("FRR") capacity obligations the installed capacity that will be used to supply customer  
10 load (including both shopping and non shopping load) must be identified approximately  
11 three years in advance.<sup>18</sup> This means that the capacity resources required during the ESP  
12 period were known at the time of the ESP filing and the Companies were well positioned  
13 to estimate their cost of capacity and incorporate that cost into their SSO rate. If the  
14 capacity costs associated with serving a customer were not being fully collected via the  
15 SSO rate, the Companies would have quite logically requested a higher SSO rate in order  
16 to obtain adequate compensation. Since capacity costs are fully collected in the SSO rate,  
17 the capacity cost associated with a returning customer is fully collected. In addition,  
18 capacity costs are a component of the FAC rider so if there were unanticipated capacity  
19 costs associated with a returning customer those costs would be automatically collected

---

<sup>17</sup> It should also be noted that a customer could return at a time when the cost of producing/purchasing power is lower than what was assumed when the ESP rate was developed. As I note later in my testimony customers make switching decisions for a variety of reasons.

<sup>18</sup> Reliability Assurance Agreement Among Load Serving Entities in the PJM Region Effective Date 2/14/2011 available on the PJM website at [www.pjm.com](http://www.pjm.com).



1 via the FAC.<sup>19</sup> Thus, there is no need for a separate POLR rider to compensate the  
2 Companies for the capacity costs of a returning customer.

3  
4 ***Q22. ARE INCREMENTAL ENERGY COSTS ASSOCIATED WITH A RETURNING***  
5 ***CUSTOMER FULLY RECOVERED VIA THE SSO RATE?***

6 ***A22.*** Yes. The potential for incremental energy cost could arise due to increases in the cost of  
7 fuel and purchased power relative to those costs assumed in the development of the SSO  
8 rate. However any increases in the cost of fuel or purchased power (including the  
9 capacity component of purchased power) would be collected through the FAC rider.  
10 Since fuel and purchased power costs are fully collected via the FAC rider, the energy  
11 costs associated with a returning customer are fully collected. Thus, there is no need for  
12 a separate POLR rider to compensate for the energy costs of a returning customer.

13  
14 ***Q23. HOW DOES THE FAC RIDER IMPACT A SCENARIO IN WHICH MARKET***  
15 ***PRICES RISE AND CUSTOMERS RETURN FROM CRES SERVICE?***

16 ***A23.*** The FAC rider permits the Companies to pass changes in fuel and purchased power  
17 (including capacity) costs through to customers. In effect the Companies provide  
18 customers with a variable price that rises as market prices for fuel and purchased power  
19 rise. Under a rising market price scenario, customers who return to SSO rates pay prices  
20 which are adjusted upward (along with customers that never switched).

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<sup>19</sup> See Direct Testimony of Philip J Nelson on Behalf of Columbus Southern Power Company and Ohio Power Company in Case No. 08-917-EL-UNC, filed July 31, 2008, for a complete description of the costs recovered via the FAC rider.

1 ***Q24. ARE YOU SAYING THERE IS NO ECONOMIC RISK ASSOCIATED WITH***  
2 ***PROVIDING POLR SERVICE?***

3 ***A24.*** There is an economic risk associated with POLR service (i.e., the incremental cost of  
4 serving a returning customer), but it is not the Companies that bear the risk. Instead the  
5 Companies' SSO customers bear the POLR risk because the increased costs associated  
6 with a returning customer are collected through the FAC.

7  
8 ***Q25. DOES THE POLR CHARGE THAT CUSTOMERS ARE CURRENTLY PAYING***  
9 ***ELIMINATE THE POLR RISK THAT CUSTOMERS ARE CURRENTLY BEARING***  
10 ***OR COMPENSATE CUSTOMERS FOR THE RISK THAT THEY ARE BEARING?***

11 ***A25.*** No. The POLR charge is revenue that flows to the Companies. POLR revenue does not  
12 flow to the customers. Also, there is no mechanism in place that would eliminate the  
13 pass through of costs that may exceed those assumed in the SSO rate should a customer  
14 return from CRES service.

15  
16 ***Q26. IS A POLR RIDER NECESSARY IF THE INCREMENTAL COST ASSOCIATED***  
17 ***WITH THE RETURN OF A SWITCHING CUSTOMER IS ZERO?***

18 ***A26.*** No. The Companies are not at risk of losing money due to the return of a customer.  
19 Therefore, there is no need for a POLR charge that would collect revenue from customers  
20 for the Companies over and above the rest of their SSO pricing structure.

**V. THE BLACK MODEL**

**A. INTRODUCTION AND SUMMARY**

***Q27. HOW DID THE COMPANIES COMPUTE THEIR PROPOSED POLR CHARGE?***

***A27.*** The Companies originally used the Black option pricing methodology to compute POLR charges for the 2009-2011 ESP in Case Nos. 08-917-EL-SSO et al. Companies' witness Thomas, in her direct testimony in this case, subsequently introduced the results of a "constrained option model" which she claims incorporates the impact of tariff based constraints on customer switching.<sup>20</sup> Ms. Thomas also discusses this constrained option model in her direct testimony in 08-917-EL-SSO, et al. on remand.<sup>21</sup> In her testimony in this case she states that: "Both models rely on the same conceptual framework and the same set of model variables. The only difference is the inclusion of the switching constraints."<sup>22</sup> Accordingly, I have focused most of my discussion on the original "unconstrained" Black model recognizing that my observations regarding that model also apply to the Companies' constrained model.

***Q28. WHAT IS THE BLACK MODEL?***

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<sup>20</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 18 (filed January 27, 2011).

<sup>21</sup> Ms. Thomas confirmed during deposition that the constrained option methodology which she sponsors in 08-917-EL-SSO et al. is the same constrained option methodology which she uses in the 11-346-EL-SSO, et al. case. See Deposition of Laura J. Thomas in 08-917-EL-SSO et al. remand dated June 16, 2011, page 71, lines 10-13.

<sup>22</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 18 (filed January 27, 2011).

1   **A28.** As described by the Companies in response to an interrogatory: “the phrase ‘Black  
2       Scholes model’ is commonly used to refer to the pioneering option pricing theory and  
3       model developed by Robert C. Merton, Myron S. Scholes, and Fisher Black. The  
4       derivation of that model as it is applied to options on futures contracts are technically  
5       referred to as the ‘Black model.’”<sup>23</sup> A stock option gives its holder the right to sell (put)  
6       or buy (call) a stock at a specified price at a specified point in the future.<sup>24</sup>  
7       There are five inputs to the Black model. The inputs to the model and the information  
8       that the Companies used for each input are listed below.<sup>25</sup>

- 9       •     Stock price: In place of the stock price, the Companies used their  
10       proposed Competitive Benchmark Price (which was the Companies’  
11       estimate of future retail market price).
- 12       •     Strike (or Exercise) Price: In place of the strike price, the Companies used  
13       a fixed value representing their SSO or ESP (retail) price.
- 14       •     Stock Price Volatility: In place of stock price volatility, the Companies  
15       used an estimate of Competitive Benchmark Price volatility which was  
16       based on historical calendar strip quotes for delivery terms of 1,2, and 3  
17       years out.
- 18       •     Purchase and expiration dates (Term of the Options Contract): The  
19       Companies claim to have used the term of the proposed ESP, which is

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<sup>23</sup> Response to OCC INT-183 in Case 11-346-EL-SSO, et al.

<sup>24</sup> A “European” stock option must be exercised (or struck) at the end of the option term. An “American” stock option may be exercised at any time up to the end of the option term. During her June 16, 2011 deposition, Ms. Thomas confirmed that the Companies calculated the value of a European option. See page 67, lines 18-22 of Thomas deposition.

<sup>25</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, pages 17 and 18 (filed January 27, 2011). See also Attachment MAT-2, AEP Ohio Responses to OCC INT 1-27 and 1-17.

1 January 2012 through May 2014. The implied term is therefore 29  
2 months.

- 3 • Interest rate: The Companies used a fixed rate of 1.0%.

4  
5 ***Q29. WHAT IS YOUR CONCLUSION REGARDING THE USE OF THE BLACK***  
6 ***MODELS, BOTH UNCONSTRAINED AND CONSTRAINED, TO COMPUTE***  
7 ***POLR?***

8 ***A29.*** The Companies' use of the Black model to compute POLR is fatally flawed because of  
9 numerous programming, logic, and input errors. I describe these errors in detail below.  
10 In summary these errors include:

- 11 • Both models completely ignore critical non-price considerations that  
12 influence the customer's decision to switch suppliers.
- 13 • The inputs to the Black model are not appropriate for determining either 1)  
14 the Companies' true cost of providing POLR service, 2) the value of the  
15 POLR option to the customer, or 3) the Companies' alleged costs related  
16 to POLR risk.
- 17 • The Companies made significant errors in their volatility and date  
18 assumptions which, if corrected, would reduce the Black derived estimate  
19 of POLR charges by at least 85 percent and possibly reduce it to zero.

**B. THE BLACK MODEL IGNORES CRITICAL NON-PRICE FACTORS.**

***Q30. DOES THE BLACK MODEL ACCOUNT FOR RELEVANT NON-PRICE FACTORS  
RELATED TO CUSTOMER SWITCHING?***

***A30.*** No. The model assumes that the decision to switch is solely a function of the relationship between the SSO price and the competitive retail market price. Implicitly the model assumes that all customers (100 percent) will switch for as little as a penny difference in generation prices which is less than two-hundredths of a percent difference when one considers that retail generation prices exceed \$50 per MWh.

In reality a customer's decision to switch generation suppliers is much more complex. The model ignores non-price considerations such as: customer loyalty to the Companies' brand; the efforts of the Companies' Customer Services and Marketing Department to communicate directly with customers who are considering switching;<sup>26</sup> including proactive communications with customers;<sup>27</sup> the fact that CRES suppliers may not be targeting certain customers; the degree to which the customer is aware of his choices; the degree to which the customer understands or is confused by his choices; the customer's perception of risk and his degree of risk tolerance; and the effort associated with researching prices and executing a transaction. These are critical factors that influence the probability a customer will switch suppliers, but they are completely unaccounted for in the Black model.

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<sup>26</sup> See Attachment MAT-3, Response to OCC INT 2-48 in Case 11-346-EL-SSO, et al.

<sup>27</sup> See Attachment MAT-4, Response to OCC INT 2-49 in Case 11-346-EL-SSO, et al.

1   ***Q31. IS THERE EVIDENCE THAT THESE FACTORS ACTUALLY IMPACT THE***  
2       ***DECISION TO SWITCH?***

3   ***A31.*** Yes. The PUCO's quarterly survey of switch rates from EDUs to CRES suppliers  
4       indicates that only portions of the Companies' customer rate classes have switched  
5       suppliers.<sup>28</sup> If, as the Black model assumes, retail prices were the sole determinant of  
6       switching, then one would expect that all customers in a rate class would switch to a  
7       CRES supplier simultaneously. Since not all customers in a class have switched there  
8       must be non-price factors such as those noted above which are influencing the switch  
9       decision.

10  
11       **C. THE BLACK MODEL DOES NOT ACCURATELY ESTIMATE THE**  
12       **COMPANIES' TRUE COST OF PROVIDING POLR SERVICE.**

13  
14   ***Q32. DOES THE BLACK MODEL ACCURATELY ESTIMATE THE COST OF THE***  
15       ***POLR OBLIGATION TO THE COMPANIES?***

16   ***A32.*** No. The Black model does not quantify the true cost of the POLR obligation to the  
17       Companies. The true cost of POLR is the cost to provide incremental capacity and  
18       energy to a returning customer over and above the costs already recovered in SSO rates.  
19       In order to make that quantification, the model would need to explicitly account for the  
20       manner in which capacity and energy costs are collected from customers in SSO rates,  
21       including the impact of the FAC rider. The Black model ignores these issues and instead  
22       relies solely on a comparison of retail (SSO and market) price inputs.

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<sup>28</sup> See Attachment MAT-5 for a copy of the preliminary December 31, 2010 report.

**D. THE BLACK MODEL DOES NOT ACCURATELY ESTIMATE THE  
VALUE OF THE "POLR OPTION" TO THE CUSTOMER.**

***Q33. DOES THE BLACK MODEL ACCURATELY REFLECT THE VALUE OF THE  
POLR "OPTION" TO THE CUSTOMER?***

***A33.*** No. First of all, for POLR to have the option value implied by the Black model, the customer must be able to return at a fixed price as assumed by the model. This is obviously not the case in reality due to the variable nature of the FAC and other riders that impact the total SSO price. Second, as explained below, the model returns a nonsensical result with respect to the value to the customer.

***Q34. WHY DO YOU CONSIDER THE RESULT NONSENSICAL WITH RESPECT TO  
THE VALUE OF THE POLR "OPTION" TO THE CUSTOMER?***

***A34.*** From a customer's viewpoint the value of returning to the SSO price actually decreases as the SSO price increases -- that is, the more the customer has to pay upon his return the less valuable the ability to return will be to the customer. However, under the Companies' Black model, if you were to increase the SSO price and hold all other inputs constant the model will tell you that the POLR charge should increase.

***Q35. CAN YOU PROVIDE A NUMERICAL EXAMPLE OF THIS PROBLEM?***



1    **A35.**   Yes.<sup>29</sup> If we were to calculate the value of a put option using the Companies'  
2           unconstrained Black model the value of a put option with a three year term, market price  
3           of \$89.60/MWh and SSO price of \$46.40/MWh, is \$2.50/MWh assuming an interest rate  
4           of 3.5% and a volatility of 33.3%.<sup>30</sup> Raising the SSO price to \$66.40/MWh would  
5           increase the calculated value of the put option (and thus the POLR charge) to  
6           \$8.31/MWh. In other words, in this example increasing the SSO price (the price that a  
7           customer would return to) by \$20/MWh would increase the POLR charge to the customer  
8           by \$5.81/MWh. The model incorrectly concludes that the more the customer has to pay  
9           upon his return, the more valuable the ability to return will be to the customer. That is  
10          nonsensical and therefore the Black model does not accurately reflect the value of the  
11          POLR option to the customer.

12  
13    **Q36.   IF IT COULD BE ACCURATELY CALCULATED, SHOULD THE COMPANIES BE**  
14           **AWARDED POLR REVENUE EQUAL TO THE VALUE OF THE POLR OPTION**  
15           **TO THE CUSTOMER?**

16    **A36.**   No. First, the Companies as monopoly providers of the POLR service should not be  
17           allowed to charge a value-based rate for that service, as OCC Witness Duann testifies.  
18           Second, any POLR costs are actually borne by SSO customers, not the Companies. If the  
19           Commission decides to base the POLR charge on perceived value to the customer, which

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<sup>29</sup> I presented the following example in my Direct testimony in the remand phase of 08-917-EL-SSO et al. The input assumptions were based on the assumptions used by the Companies for Ohio Power residential customers. I use the same numbers here in order to provide consistency between that case and this case.

<sup>30</sup> The Companies in 08-917-EL-SSO et al. reported the value as \$2.53/MWh. The model provided by the Companies to OCC produces a value of \$2.50/MWH for the same inputs.

OCC recommends against, then that value should flow to the parties bearing the POLR cost -- the SSO customers.

**E. THE BLACK MODEL DOES NOT ACCURATELY ESTIMATE THE COMPANIES' ALLEGED POLR RISK.**

***Q37. HOW DO THE COMPANIES DEFINE POLR RISK?***

***A37.*** Companies' witness LaCasse uses the term "shopping risk" to describe *both the migration risk* --the risk that customers *will leave* when market prices drop below SSO prices--*and the return risk*, -- the risk that customers will return when market prices exceed SSO prices.<sup>31</sup>

***Q38. IS SHOPPING RISK, AS THE TERM IS USED BY COMPANIES WITNESS LACASSE, A POLR RISK?***

***A38.*** The portion of shopping risk related to the return of a customer to SSO service is POLR risk. The portion of shopping risk related to a customer leaving to take service from a CRES is, as I noted above, competitive business risk, and is not POLR related.

***Q39. DOES THE BLACK MODEL ACCURATELY ESTIMATE THE SHOPPING RISK IDENTIFIED BY DR. LACASSE, WHICH THE COMPANIES CLAIM IS THE COST OF THE POLR OBLIGATION?***

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<sup>31</sup> Direct Testimony of Dr. Chantale LaCasse on Behalf of Columbus Southern Power Company and Ohio Power Company filed July 6, 2011, page 5.

1   **A39.** No. Even if one were to accept Dr. LaCasse's definition of POLR risk as shopping risk,  
2       which I do not, the Black model does not estimate that risk. Dr. LaCasse includes within  
3       her definition of shopping risk, the inability of the Companies, due to the POLR  
4       obligation, to engage in hedging activity. According to Dr. LaCasse "absent its POLR  
5       obligations, an EDU that uses its own generation assets would be in a position to manage  
6       its generation output optimally on a forward basis. A significant aspect of optimally  
7       managing generation output is hedging the financial exposure to the spot market through  
8       forward sales."<sup>32</sup> In other words, Dr. LaCasse is saying that if the Companies were  
9       relieved of their POLR obligation they could optimize their generation output by locking  
10      in long term non-jurisdictional capacity and energy sales, and avoid the risk of losing  
11      revenue if market prices drop. Put another way, Dr. LaCasse is saying that shopping risk  
12      is the loss of the opportunity to hedge.

13  
14      If one were to accept the proposition that the lost hedge opportunity is a proper  
15      component of POLR cost, which I do not, then one would have to determine whether the  
16      Companies could really lock in better deals absent the POLR obligation. This would  
17      require a comparison of the capacity and energy revenues derived from SSO retail sales  
18      versus the capacity and energy revenues that could potentially be derived from a non-  
19      jurisdictional ("off system" ) sale alternative.<sup>33</sup> The Black model does not perform that  
20      analysis. Thus, the model fails to measure the shopping risk as defined by Dr. LaCasse.

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<sup>32</sup> Direct Testimony of Dr. Chantale LaCasse on Behalf of Columbus Southern Power Company and Ohio Power Company filed July 6, 2011, page 6.

<sup>33</sup> Dr. Makhija also proposed the use of a "with POLR obligation" versus "without POLR obligation" comparison to define the cost impact of the POLR obligation. See Direct Testimony of Dr. Anil Makhija On Behalf of Columbus Southern Power Company and Ohio Power Company filed July 6, 2011, page 2.

**Q40. HOW DO THE CAPACITY REVENUES FROM THOSE TWO SCENARIOS  
COMPARE?**

**A40.** During the ESP period the ability to sell capacity is limited by FRR capacity obligations as defined in the PJM RAA.<sup>34</sup> Under FRR rules, designated capacity must be available to serve load in the zone, and therefore the ability to lock in a long term capacity sale at a superior price is not possible. Even if capacity sales outside of the zone were allowed, the PJM capacity prices in effect for the proposed ESP period would yield revenues far below those recovered via SSO rates. The Companies claim that their capacity costs (fully recovered via the SSO rate) are in excess of \$300 per MW-day.<sup>35</sup> During the ESP term the PJM capacity prices which would be applicable to a sale of this capacity never exceeded \$110.00 per MW-day and drop as low as \$16.46 per MW-day.<sup>36</sup>

**Q41. HOW DO THE ENERGY REVENUES FROM THOSE TWO SCENARIOS  
COMPARE?**

**A41.** With respect to energy sales, the Companies' ability to sell off-system at prices superior to the revenues embedded in their SSO rates is subject to several considerations, including the amount of energy related revenue embedded in the SSO rate versus wholesale market prices at the beginning of the ESP period and any constraints or profit sharing implications associated with the AEP Pool agreement.

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<sup>34</sup> Reliability Assurance Agreement Among Load Serving Entities in the PJM Region Effective Date 2/14/2011 available on the PJM website at [www.pjm.com](http://www.pjm.com).

<sup>35</sup> See page 4 of the Ohio Power Company's and Columbus Southern Power Company's Initial Comments in Case No. 10-2929-EL-UNC, filed January 7, 2011. See also Attachment MAT-6.

<sup>36</sup> See Attachment MAT-6.

1   ***Q42. DOES THE BLACK MODEL CAPTURE THESE CONSIDERATIONS?***

2   ***A42.*** No. The Black model is performing a calculation of expected lost revenues at the retail  
3       level. The model simply compares retail prices (SSO and estimated retail market  
4       benchmark) and fails to address the considerations that I have addressed above.  
5       Therefore, the Black model does not accurately estimate the lost hedge opportunity which  
6       the Companies claim is part of the shopping cost associated with the POLR obligation.

7  
8       **F.     THE COMPANIES MADE SIGNIFICANT ERRORS IN THEIR**  
9               **VOLATILITY AND DATE ASSUMPTIONS WHICH, IF CORRECTED,**  
10              **WOULD REDUCE THE BLACK DERIVED ESTIMATE OF POLR BY AT**  
11              **LEAST 85 PERCENT AND POSSIBLY REDUCE IT TO ZERO.**

12  
13   ***Q43. IF THE COMMISSION USES THE COMPANIES' MODELING FOR***  
14       ***CALCULATING POLR CHARGES (REJECTING YOUR CONCLUSION THAT***  
15       ***THE MODEL IS FATALLY FLAWED), HAVE THE COMPANIES USED THE***  
16       ***CORRECT INPUT ASSUMPTIONS?***

17   ***A43.*** No. The Companies made critical errors regarding the assumptions for volatility and  
18       purchase/expiration dates. Correction of the Companies' input errors would reduce the  
19       Black calculated POLR charge by at least 85 percent and possibly reduce it to zero.  
20       Please note that my discussion regarding the correction of these errors does not mean that  
21       I endorse the use of the Black model. In fact, I do not support the use of the  
22       unconstrained Black model or the Companies' "constrained option model" to calculate  
23       POLR charges.

**Q44. WHAT IS THE VOLATILITY ERROR?**

**A44.** In the Black model, “volatility” refers to the extent a stock’s price varies over time. The Companies calculated the volatility value based on historical calendar strip quotes for delivery terms of 1, 2 and 3 years out. The consequence is that the Companies computed the volatility of just one of the ten cost components that make up the Companies’ forecasted market price (the simple swap component) and assumed that the volatility of this single component was a good proxy for the volatility of the total market price. There is no basis for assuming the volatility of just one component of the forecasted market benchmark price is a reasonable estimate for the volatility of all ten of the components which make up the total benchmark price. This is an error.

**Q45. WHY IS IT UNREASONABLE TO ASSUME THAT THE VOLATILITY OF THE ENERGY COMPONENT (SIMPLE SWAP COMPONENT) IS A GOOD PROXY FOR THE OTHER COMPONENTS OF THE BENCHMARK PRICE?**

**A45.** To illustrate my point, let’s review some of the specific cost components that the Companies used to develop their estimate of the competitive benchmark price. The capacity component of the benchmark price is a fixed annual cost which is determined via a PJM administered capacity auction held well in advance of the delivery year. The administrative cost component was assumed to be a fixed value and there is no logical tie between administrative costs and the volatility of energy prices. These two components make up twenty-nine to thirty-six percent of the benchmark price by customer class.<sup>37</sup>

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<sup>37</sup> Attachment MAT-7 Components of Competitive Benchmark Price.

1 The remaining components likely exhibit some degree of market volatility, but the  
2 Companies have presented no statistical evidence or explanation for why these  
3 components would exhibit the same volatility characteristics as the simple swap (energy)  
4 component. As a result, the volatility number that the Companies used in their Black  
5 model is overstated. This is important because the Black model is very sensitive to the  
6 volatility assumption.

7  
8 ***Q46. WHAT SHOULD THE COMPANIES DO TO CORRECT THE VOLATILITY***  
9 ***ERROR?***

10 ***A46.*** The Companies should scale down the volatility input value to reflect the fact that the  
11 data that they used to develop that input value only applies to the simple swap  
12 component. Making this correction would reduce the calculated POLR charge by  
13 approximately 85 percent.<sup>38</sup>

14  
15 ***Q47. WHAT DATE RELATED ERROR DID THE COMPANIES MAKE?***

16 ***A47.*** The Companies propose to charge customers for the cost of a 29 month European option  
17 every month of the proposed ESP period. This approach does not make sense because a  
18 European option can only be exercised at the end of the option term.<sup>39</sup> In effect, while  
19 customers actually have the right to return to SSO service at any time during the ESP  
20 period, the Companies are asking customers to pay for “return to SSO” rights which  
21 theoretically cannot be exercised during the term of this ESP.

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<sup>38</sup> See Attachment MAT-8.

<sup>39</sup> An American option can be exercised at any point up to the expiration date of the option.

1   ***Q48. CAN YOU PROVIDE AN EXAMPLE OF THE PURCHASE/EXPIRATION DATE***  
2   ***ERROR?***

3   ***A48.*** Yes. As an example, the term of this ESP period is January 2012 through May 2014. If a  
4       customer were to pay for a European option based on a 29 month term in February 2012  
5       he would have the right to exercise that option in, but not before, July 2014. If that  
6       customer were to pay for a European option based on a 29 month term in April 2014 he  
7       would have the right to exercise that option in, but not before, September 2016. As these  
8       examples illustrate, the exercise dates for the options that customers are paying for are  
9       well outside of the proposed ESP period and, therefore, there is a significant flaw with  
10      respect to the date assumptions.

11  
12   ***Q49. WHY MUST THE EXERCISE DATES FALL WITHIN THE TERM OF THE***  
13   ***PROPOSED ESP?***

14   ***A49.*** To assume an exercise date that extends beyond the end of the proposed ESP period  
15       would imply an ESP price commitment that has not been made and estimates of market  
16       prices for which there is no supporting evidence. The Companies have not committed to  
17       a strike price (i.e., SSO price) beyond the end of the proposed ESP period nor have they  
18       estimated market prices beyond the end of the ESP period.

19  
20   ***Q50. HAVE THE COMPANIES' WITNESSES BEEN ABLE TO EXPLAIN WHY IT***  
21   ***WOULD BE CORRECT TO CHARGE CUSTOMERS MONTHLY FOR THE COST***  
22   ***OF A 29 MONTH EUROPEAN OPTION?***



1 **A50.** No. There is nothing in the testimony of the Companies' witnesses that explains how it  
2 would be correct to charge customers monthly for the cost of a 29 month European  
3 option.

4  
5 **Q51. COULD THE COMPANIES HAVE USED AN AMERICAN OPTION**  
6 **CALCULATION TO CORRECT THE PURCHASE/EXPIRATION DATE ERROR?**

7 **A51.** Yes. The Companies could have calculated the cost of an American option that would be  
8 paid for once, but which gives a customer the right to strike at any time during the ESP  
9 period. In order to arrive at a monthly cost, the onetime cost of the American option  
10 could be divided by 29, which is the number of months in the ESP period.

11  
12 **Q52. WHAT WOULD BE THE IMPACT ON THE CALCULATED POLR CHARGE IF**  
13 **THE COMPANIES HAD USED THE COST OF AN AMERICAN OPTION SPREAD**  
14 **OVER THE ESP PERIOD?**

15 **A52.** The calculation of an American option requires the use of a binomial model. The  
16 Chicago Board Options Exchange ("CBOE") website provides a tool for calculating the  
17 value of both European and American options.<sup>40</sup> My use of the CBOE tool indicated that  
18 the onetime cost of an American option would not be significantly greater than the  
19 monthly cost of the European option which the Companies calculated. If that were true,  
20 then calculating the onetime cost of an American option and spreading that cost over 29  
21 months would significantly reduce the calculated POLR charge. However, I cannot

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<sup>40</sup> See [www.cboe.com](http://www.cboe.com).

1 independently verify the CBOE calculations and I offer them only as an example of the  
2 potential impact.

3  
4 ***Q53. WHAT IS THE COMBINED IMPACT OF THE VOLATILITY AND DATE ERRORS***  
5 ***ON THE BLACK BASED POLR CHARGE?***

6 ***A53.*** The correction of the volatility error would reduce the Black calculated POLR charge by  
7 approximately 85 percent.<sup>41</sup> Correcting the purchase/expiration date error on top of that  
8 has the potential to drive the Black calculated POLR charge to zero.

9  
10 ***Q54. DOES THE COMPANIES' "CONSTRAINED OPTION MODEL" RESOLVE THE***  
11 ***PROBLEMS THAT YOU HAVE IDENTIFIED WITH THE BLACK MODEL?***

12 ***A54.*** No. The constrained option model uses the same basic inputs and logic as the  
13 unconstrained Black model. As a result it does not account for non-price factors which  
14 influence customer switching decisions. It does not accurately estimate the value of the  
15 POLR option to the customer, the true cost of the POLR obligation to the Companies, or  
16 the Companies' alleged lost hedge opportunity cost. Additionally, the flawed volatility  
17 value would be common to both models. The only error that the constrained model could  
18 potentially resolve is the purchase/expiration date error; however, I am not convinced that  
19 the constrained model corrects the date error.

20  
21 ***Q55. WHY ARE YOU NOT CONVINCED THAT THE CONSTRAINED OPTION MODEL***  
22 ***RESOLVES THE DATE ERROR?***

---

<sup>41</sup> See Attachment MAT-8.

1 **A55.** Based on a description of the constrained model which Ms. Thomas provided it appears  
2 that the model computes the values of a series of European options with lengths varying  
3 from one month up to the full term of the ESP period and then averages the results. If  
4 this is true, the model is effectively computing the equivalent of a European option with a  
5 term of half of the ESP period. In the last half of the ESP the strike date will still fall  
6 outside of the ESP period. As a result, the constrained option model may solve half of  
7 the date problem, but it doesn't solve the whole date problem.

8  
9 **Q56. THE COMPANIES PROPOSE THAT THE COMMISSION APPROVE THEIR**  
10 **POLR METHODOLOGY AND ALLOW THEM TO PROVIDE FINAL**  
11 **(COMPLIANCE) POLR CHARGES ONCE THE ESP RATES, COMPETITIVE**  
12 **BENCHMARK PRICES, AND SWITCHING RULES BECOME FINAL IN THIS**  
13 **PROCEEDING.<sup>42</sup> DO YOU AGREE WITH THAT APPROACH?**

14 **A56.** No. The Commission should be fully informed regarding the impact of potential changes  
15 in model inputs before they approve the use of the model. An understanding of how the  
16 final inputs to the model could impact the resulting calculation is critical to the review  
17 and approval of the methodology. Changes in the inputs can result in significant changes  
18 in the POLR charge. For example, the value that the Companies assumed for the  
19 capacity component of the Competitive Benchmark Prices is based on capacity rates that  
20 the Companies have requested, not the capacity rates currently approved by the  
21 Commission. If the Commission were to order the Companies to use Competitive

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<sup>42</sup> Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, page 22 (filed January 27, 2011).

1 Benchmark Prices based on the currently approved rates, the resulting POLR charge  
2 calculated by the model would increase approximately 150%.<sup>43</sup>

3  
4 **VI. COMMENTS ON THE TESTIMONIES OF THE COMPANIES' POLR**  
5 **WITNESSES**  
6

7 ***Q57. ARE THERE ANY COMMENTS THAT YOU WISH TO MAKE REGARDING THE***  
8 ***TESTIMONY OF THE COMPANIES' THREE POLR WITNESSES?***

9 ***A57.*** Yes. I would like to observe that none of the three witnesses makes any attempt to  
10 identify tangible, independently verifiable, out of pocket expenses associated with the  
11 Companies' POLR obligation.  
12

13 ***Q58. DO YOU AGREE WITH DR. MAKHIJA'S ASSERTION THAT THE "VALUE OF***  
14 ***THE [POLR] OPTIONS GIVEN TO THE CUSTOMERS EQUALS THE POLR***  
15 ***COSTS TO THE UTILITY"***<sup>44</sup>?

16 ***A58.*** No. Unless actual cash is changing hands, the cost to the provider and the value to the  
17 recipient are not necessarily equal. Any child who has received a pair of socks as a  
18 Christmas present can vouch for that. A "\$5 off" dinner coupon is not worth the  
19 equivalent of \$5 in cash to its recipient if the recipient has to spend \$5 in gasoline to drive  
20 to the restaurant or if he doesn't like the restaurant's food. Multiple considerations  
21 influence value. For the segment of customers who have no intention (or no ability) to

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<sup>43</sup> See Attachment MAT-8.

<sup>44</sup> Direct Testimony of Dr. Anil Makhija on Behalf of Columbus Southern Power Company and Ohio Power Company filed July 6, 2011, page 3, lines 6-7.

1 switch electric suppliers the POLR option is the equivalent of a \$5 off coupon that will  
2 never be cut out of the newspaper.

3  
4 **VII. CONCLUSION**

5  
6 ***Q59. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANIES'***  
7 ***PROPOSED POLR RIDER?***

8 ***A59.*** I recommend that the Commission reject the Companies' request to charge customers a  
9 POLR rider because any POLR costs to the Companies are already collected from  
10 customers through other Standard Service Offer ("SSO") rate mechanisms. In other  
11 words, the POLR charge should be zero.

12  
13 ***Q60. IF THE COMMISSION WERE TO APPROVE A POLR RIDER, WHO SHOULD***  
14 ***RECEIVE THE REVENUE FROM THAT RIDER?***

15 ***A60.*** If the Commission approves a POLR rider then the revenues generated by the rider  
16 should be used to offset fuel adjustment clause ("FAC") rider charges to the Companies'  
17 customers. This is because it is SSO customers who already pay the entire cost of POLR  
18 via the FAC rider.

19  
20 ***Q61. WHAT IS YOUR RECOMMENDATION REGARDING THE USE OF THE***  
21 ***"UNCONSTRAINED OPTION MODEL"?***

22 ***A61.*** I recommend that the Commission reject the use of the unconstrained option (Black)  
23 model because the use of this model as presented by the Companies will result in rates

1       that do not amount to reasonably priced retail electric service for consumers as the model  
2       does not accurately estimate the cost of POLR to the Companies or the value of POLR to  
3       customers. If the Commission were to accept the continued use of the Black model,  
4       which I do not recommend, it should order the Companies to make substantial corrections  
5       to the values that the Companies used as inputs to the model.

6  
7       ***Q62. WHAT IS YOUR RECOMMENDATION REGARDING THE USE OF THE***  
8       ***“CONSTRAINED OPTION MODEL”?***

9       ***A62.*** I recommend that the Commission reject the use of the constrained option model because  
10       it uses the same basic logic and has the same shortcomings as the unconstrained Black  
11       model. Therefore, the use of this model as presented by the Companies will result in  
12       rates that do not amount to reasonably priced retail electric service for consumers. If the  
13       Commission were to accept the use of the constrained option, which I do not recommend,  
14       it should order the Companies to make substantial corrections to the values that the  
15       Companies used as inputs to the model. The Commission should also order the  
16       Companies to fully disclose the calculations used in the model to PUCO Staff and  
17       intervenors prior to using the constrained model to set the POLR rate.

18  
19       ***Q63. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANIES’***  
20       ***PROPOSAL THAT THE COMMISSION APPROVE THEIR POLR***  
21       ***METHODOLOGY AND ALLOW THEM TO PROVIDE FINAL (COMPLIANCE)***  
22       ***POLR CHARGES ONCE THE ESP RATES, COMPETITIVE BENCHMARK***  
23       ***PRICES AND SWITCHING RULES BECOME FINAL IN THIS PROCEEDING?***

*Direct Testimony of Mack A. Thompson  
On Behalf of the Office of the Ohio Consumers' Counsel  
PUCO Case Nos. 11-346-EL-SSO et al.*

1   **A63.** I recommend that the Commission not separately approve a POLR methodology. An  
2       understanding of how the final inputs to the model could impact the resulting calculation  
3       is critical to the review and approval of the methodology. Assumptions at issue in this  
4       proceeding have the potential to either eliminate or more than double the Companies'  
5       calculated POLR charge.

6  
7   **Q64. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?**

8   **A64.** Yes it does. However I reserve the right to incorporate new information that may  
9       subsequently become available.

**COLUMBUS SOUTHERN POWER COMPANY'S  
AND OHIO POWER COMPANY'S RESPONSE TO  
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL  
DISCOVERY REQUEST  
CASE NO. 11-346-EL-SSO AND 11-348-EL-SSO  
FOURTH SET**

**INTERROGATORY**

INT-149. On page 5, lines 13-15 of Mr. Roush's testimony, there is a reference to "AEP Ohio's obligations under the Fixed Resource Requirement." Please identify and explain what these obligations are; the basis of the obligations; and the ways that AEP Ohio fulfills these obligations

**RESPONSE**

The referenced obligations are pursuant to the PJM Interconnection, LLC Reliability Assurance Agreement which is available on PJM's website ([www.pjm.com](http://www.pjm.com)). As referenced on page 5 of Company witness Roush's testimony, AEP Ohio can meet part of its capacity obligations under the Fixed Resource Requirement alternative under the Reliability Assurance Agreement through the registration of customers taking interruptible service from the Company in PJM's Emergency Demand Response Program.

Prepared By: David M. Roush



**COLUMBUS SOUTHERN POWER COMPANY'S  
AND OHIO POWER COMPANY'S RESPONSES TO  
FIRSTENERGY SOLUTIONS CORP.'S  
DATA REQUEST  
CASE NO. 11-346-EL-SSO AND 11-348-EL-SSO  
FIRST SET**

**INTERROGATORY**

INT-027      How did You calculate the "Volatility of Competitive Benchmark Prices (Volatility of Market Prices)" used in connection with this ESP, as referenced on page 17:13 of Ms. Thomas's testimony?

**RESPONSE**

The volatility of competitive benchmark prices used in the Company's current ESP filing was calculated based on historical calendar strip quotes for delivery terms of 1, 2 and 3 years out See the Company's response to OCC INT-017

Prepared By: Laura J Thomas

**COLUMBUS SOUTHERN POWER COMPANY'S  
AND OHIO POWER COMPANY'S RESPONSE TO  
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL  
DISCOVERY REQUEST  
CASE NO. 11-346-EL-SSO AND 11-348-EL-SSO  
FIRST SET**

**INTERROGATORY**

INT-017. Please identify the AEP Ohio, and individual company inputs (OP, CSP) to the Black Scholes Model for the constrained model and unconstrained model for the following:

- a. the market price or competitive benchmark price used (and if it varied on a yearly basis, over the term of the ESP, identify the variation);
- b. the proposed ESP price (and if it varied on a yearly basis, over the term of the ESP, identify the variation);
- c. the time frame;
- d. the interest rate (and if it varied on a yearly basis, over the term of the ESP, identify the variation); and,
- e. the volatility of the futures contract (and if it varied on a yearly basis, over the term of the ESP, identify the variation)

**RESPONSE**

Below are the inputs to the constrained option pricing model used to determine the Company's POLR cost

- a. See filed workpapers of Company witness Thomas, page 1 for the Competitive Benchmark prices.
- b. See filed workpapers of Company witness Thomas, page 9, titled 'POLR Evaluation' for the ESP Prices by residential, commercial and industrial for 2012 and Jan 2013-May 2014. These prices are also provided in the filed workpapers of Company witness Roush on the pages titled 'Market Comparable Generation Prices - 2012' and 'Market Comparable Generation Prices - January 2013 through May 2014'.
- c. The time frame for the POLR calculations is January 2012 - May 2014 (the proposed ESP period) However, the POLR model requires inputs for 2012, 2013, and 2014 then adjusts back to include only through May 2014

**INT-017 (CONTINUED)**

- d. A fixed value of 1% for the interest rate was used for the term.
- e. See filed workpapers of Company witness Thomas, page 9, titled 'POLR Evaluation' for the annual volatilities of market prices

Prepared by: Laura J. Thomas

**COLUMBUS SOUTHERN POWER COMPANY'S  
AND OHIO POWER COMPANY'S RESPONSE TO  
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL  
DISCOVERY REQUEST  
CASE NO. 11-346-EL-SSO AND 11-348-EL-SSO  
SECOND SET**

**INTERROGATORY**

INT-048 Referring to the October 19, 2010 Third Quarter Earnings Analysts Conference of AEP, the following statement was transcribed and attributed to Mr. Hamrock: "But one of the things that our team has done is our customers nearly always reach out to our team. Many of my colleagues have talked about the relationships that we have. And customers when presented with these options and these opportunities to switch always come and ask how should I evaluate this. And we want them to do that in the most informed way possible."

- a. Please identify the division or department within AEP Ohio that would be interacting with customers who seek information on how to evaluate the switching options. Identify the management employees in that division or department;
- b. Please identify how AEP Ohio assures that the customers referenced above make an informed evaluation about switching;
- c. Identify what documents are provided to customers referenced above that are used to assist them in making informed evaluation of the options discussed; and,
- d. Is it AEP Ohio's experience that the process described by Mr. Hamrock has reduced the shopping risks that AEP Ohio faces? If so, does the Black Scholes model take into account the reduced risks associated with these activities? Please indicate specifically how this is accomplished, if at all, in the Black Scholes model.

**RESPONSE**

a. Customer Services and Marketing is the department that is typically involved with such customer contacts. The management for the group consists of Karen Sloneker, Customer Services and Marketing Director, and Greg Earl, Customer Services and Marketing Manager.

**INT-48 (CONTINUED)**

b. The Company can't assure that customers are making an informed decision because all the Company can really do is attempt to make sure they understand their current Standard Service Offer, and more specifically, their "Price to Compare." The Company educates customers about what is included in the "Price to Compare" and ensure that the "Price to Compare" is accurate based on their current usage and billing history with AEP Ohio.

c. The information provided varies and depends on the customer's specific questions. The Company provides information verbally, or direct customers to where they can find information, such as AEP Ohio's web site or the PUCO web site

d. No, the Company has not evaluated the impact of the communication on customer switching. The constrained option pricing model used to determine the cost of the Company's POLR obligation is not based on qualitative factors

Prepared By: Karen L. Sloneker/Laura J. Thomas

**COLUMBUS SOUTHERN POWER COMPANY'S  
AND OHIO POWER COMPANY'S RESPONSE TO  
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL  
DISCOVERY REQUEST  
CASE NO. 11-346-EL-SSO AND 11-348-EL-SSO  
SECOND SET**

**INTERROGATORY**

INT-49.

Referring to the October 19, 2010 Third Quarter Earnings Analysts Conference of AEP, the following statement was transcribed and attributed to Mr. Hamrock: "And so we're proactively reaching out to customers, making sure that they are making informed decisions. We think that will help with switching that will be very rational in the near term. It will allow us to position more competitively in the longer term with those customers."

- a Are the "proactive" efforts in reaching out to customers different from the efforts described when customers come to AEP with questions about how to evaluate their switching options? If so, please describe the efforts AEP has made to reach out to customers as referenced by Mr. Hamrock;
- b Please identify the division or department within AEP Ohio that would be proactively reaching out to customers. Identify the management employees in that division or department;
- c Please identify how AEP Ohio identifies or targets customers that it should be proactively reaching out to with regard to switching. What customers in particular are targeted and why?;
- d Identify what documents are provided to customers that AEP Ohio is proactively reaching out to as referenced above;
- e Is it AEP Ohio's experience that the proactive efforts described by Mr. Hamrock have reduced the shopping risks that AEP Ohio faces? If so, does the Black Scholes model take into account the reduced risks associated with these activities? Please indicate specifically how this is accomplished, if at all, in the Black Scholes model?;

**INT-049 (CONTINUED)**

- f Has the Company identified whether the efforts described by Mr. Hamrock have helped with switching so that it is "rational" in the near term?; and,
- g. Please define "rational" switching as described by Mr Hamrock.

**RESPONSE**

a. Like the communications that occur when a customer contacts the Company, the proactive communications as referenced by Mr. Hamrock involve providing information to the customers to make sure they are making informed decisions. The referenced proactive communications were initiated with customers who take service on the Company's GS-2 and GS-3 tariff to make sure they understood our 2011 ESP fuel adjustment clause impacts.

b See OCC INT-048 part a

c AEP Ohio initiates such communications based on specific facts and circumstances presented. For example, in the Fall of 2010, the Company initiated a single, mass proactive communication to CSP, nonresidential customers served under the GS-2 and GS-3 tariffs. These customers were selected because they were in the category of customers who were receiving inaccurate information from CRES providers or their marketers.

d For the example listed in OCC INT-049 part c., the attached letters "OCC INT-049 Attachment 1.pdf" and "OCC INT-049 Attachment 2.pdf" were sent to unmanaged, CSP customers served under the GS-2 and GS-3 tariffs.

e The Company does not know if the letter had any impact on the shopping risks or not, though the numbers of shopping customers have continued to climb. The constrained option pricing model used to determine the cost of the Company's POLR obligation is not based on qualitative factors.

f No, the Company has not evaluated the impact of the communication on customer switching.

g. "Rational" switching was intended to mean customers made switching decisions based on accurate information relative to the available options.

Prepared By: Karen L. Sloneker/Laura J. Thomas



*A unit of American Electric Power*

Dear Columbus Southern Power customer,

You may have recently heard or received inaccurate information from a Competitive Retail Energy Supplier or their energy marketer related to a chance to save on your electric bill. Some customers have been advised that AEP Ohio's Columbus Southern Power has announced a 6% price increase effective January 2011. **Columbus Southern Power does not intend to have any increases which will impact the "Price to Compare" in January 2011.** Columbus Southern Power does plan to file a request for an environmental carrying cost rider in February, 2011 that would likely take effect in July, 2011 resulting in expected increases of less than one percent of the total bill on an annual basis for most customers. If approved, this would be a slight increase over the current "Price to Compare."

In addition, some information associated with longer term offers from marketers may imply that there will definitely be increases that impact the "Price to Compare" in 2012 and 2013. It is premature to make assumptions about whether Columbus Southern Power's rates for 2012 or 2013 will increase or decrease.

Please contact your customer service representative by calling 1-800-277-2177 for more precise information about Columbus Southern Power tariffs and your "Price to Compare."

Sincerely,

A handwritten signature in black ink that reads "Karen L. Sloneker".

Karen L. Sloneker  
AEP Ohio  
Director - Customer Service and Marketing



Dear Columbus Southern Power customer,

You may have recently heard or received inaccurate information from a Competitive Retail Energy Supplier or their energy marketer related to a chance to save on your electric bill. Some customers have been advised that AEP Ohio's Columbus Southern Power has announced a 6% price increase effective January 2011. **Columbus Southern Power does not intend to have any increases which will impact the "Price to Compare" in January 2011.** Columbus Southern Power does plan to file a request for an environmental carrying cost rider in February, 2011 that would likely take effect in July, 2011 resulting in expected increases of less than one percent of the total bill on an annual basis for most customers. If approved, this would be a slight increase over the current "Price to Compare."

In addition, some information associated with longer term offers from marketers may imply that there will definitely be increases that impact the "Price to Compare" in 2012 and 2013. It is premature to make assumptions about whether Columbus Southern Power's rates for 2012 or 2013 will increase or decrease.

Please contact me for more precise information about Columbus Southern Power tariffs and your "Price to Compare."

Sincerely,

Assigned CSE, CSAM or National Account Manager  
AEP Ohio

**Summary of Switch Rates from EDUs to CRES Providers in Terms of Sales  
For the Month Ending December 31, 2010  
(MWh)**

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
Cleveland Electric Illuminating Company	CEI	31-Dec	2010	137790	76393	248022	474617
CRES Providers	CEI	31-Dec	2010	355624	453132	217666	1042468
Total Sales	CEI	31-Dec	2010	493414	529525	465688	1517085
EDU Share	CEI	31-Dec	2010	27.93%	14.43%	53.26%	31.28%
Electric Choice Sales Switch Rates	CEI	31-Dec	2010	72.07%	85.57%	46.74%	68.72%

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
Duke Energy Ohio	DUKE	31-Dec	2010	468902	149952	48433	677497
CRES Providers	DUKE	31-Dec	2010	160952	469367	337559	1012790
Total Sales	DUKE	31-Dec	2010	627854	619319	385992	1690287
EDU Share	DUKE	31-Dec	2010	74.36%	24.21%	12.55%	40.08%
Electric Choice Sales Switch Rates	DUKE	31-Dec	2010	25.64%	75.79%	87.45%	59.92%

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
Columbus Southern Power Company	CSP	31-Dec	2010	616431	573843	360948	1555700
CRES Providers	CSP	31-Dec	2010	1	97595	19366	116962
Total Sales	CSP	31-Dec	2010	616432	671438	380314	1672662
EDU Share	CSP	31-Dec	2010	100.000%	85.465%	94.908%	93.007%
Electric Choice Sales Switch Rates	CSP	31-Dec	2010	0.000%	14.535%	5.092%	6.993%

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
The Dayton Power and Light Company	DPL	31-Dec	2010	331451	158847	51428	588724
CRES Providers	DPL	31-Dec	2010	65	136504	235502	448572
Total Sales	DPL	31-Dec	2010	331516	295351	286930	1037296
EDU Share	DPL	31-Dec	2010	99.98%	53.78%	17.92%	56.76%
Electric Choice Sales Switch Rates	DPL	31-Dec	2010	0.02%	46.22%	82.08%	43.24%

Source: PUCO, Division of Market Monitoring & Assessment.

Note1: Total sales includes residential, commercial, industrial and other sales.

Note2: The switch rate calculation is intended to present the broadest possible picture of the state of retail electric competition in Ohio.

Appropriate calculations made for other purposes may be based on different data, and may yield different results.

\*Preliminary Data - will update upon receipt of additional CRES data

**Summary of Switch Rates from EDUs to CRES Providers in Terms of Sales  
For the Month Ending December 31, 2010  
(MWh)**

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
Ohio Edison Company	OEC	31-Dec	2010	347736	119728	173749	653628
CRES Providers	OEC	31-Dec	2010	477048	495207	357812	1342375
Total Sales	OEC	31-Dec	2010	824784	614935	531561	1996003
EDU Share	OEC	31-Dec	2010	42.16%	19.47%	32.69%	32.75%
Electric Choice Sales Switch Rates	OEC	31-Dec	2010	57.84%	80.53%	67.31%	67.25%

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
Ohio Power Company	OP	31-Dec	2010	628585	485696	1116821	2238888
CRES Providers	OP	31-Dec	2010	0	954	0	954
Total Sales	OP	31-Dec	2010	628585	486650	1116821	2239842
EDU Share	OP	31-Dec	2010	100.00%	99.80%	100.00%	99.96%
Electric Choice Sales Switch Rates	OP	31-Dec	2010	0.00%	0.20%	0.00%	0.04%

Provider Name	EDU Service Area	Quarter Ending	Year	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
Toledo Edison Company	TE	31-Dec	2010	102530	43700	115020	265504
CRES Providers	TE	31-Dec	2010	119121	203072	244991	569300
Total Sales	TE	31-Dec	2010	221651	246772	360011	834804
EDU Share	TE	31-Dec	2010	46.26%	17.71%	31.95%	31.80%
Electric Choice Sales Switch Rates	TE	31-Dec	2010	53.74%	82.29%	68.05%	68.20%

Source: PUCO, Division of Market Monitoring & Assessment.

Note1: Total sales includes residential, commercial, industrial and other sales.

Note2: The switch rate calculation is intended to present the broadest possible picture of the state of retail electric competition in Ohio.

Appropriate calculations made for other purposes may be based on different data, and may yield different results.

\*Preliminary Data - will update upon receipt of additional CRES data

**COLUMBUS SOUTHERN POWER COMPANY'S  
AND OHIO POWER COMPANY'S RESPONSE TO  
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL  
DISCOVERY REQUEST  
CASE NO. 11-346-EL-SSO AND 11-348-EL-SSO  
SECOND SET**

**INTERROGATORY**

- INT-056 Referring to the testimony of witness Thomas at 7, which states "[t]he cost reflected in the capacity component is based on the rates provided in AEP Ohio's Initial Comments filed in Case No. 10-2929-EL-UNC on January 7, 2011:"
- a Please quantify the difference between the rates that AEP Ohio filed in its Initial Comments in Case No. 10-2929-EL-UNC and the capacity rates that result from the three-year capacity auction conducted by PJM which is the basis for the state compensation mechanism established by the PUCO in that case;
  - d Identify all exhibits and testimony in this proceeding that are impacted by AEP Ohio's decision to base its capacity costs on the rates provided in AEP Ohio's Initial Comments filed in Case No. 10-2929-EL-UNC on January 7, 2011 instead of the values established by the commission;
  - e Referring to the table included in the testimony of Witness Thomas at 9, please explain and quantify how using AEP Ohio's capacity rate assumption, instead of the values currently established by the commission, impacts the values in the table;
  - f Referring to Exhibits LJT-1 and LJT-2 please explain and quantify how using AEP Ohio's capacity rate assumption, instead of the values currently established by the commission, impacts the values in the exhibits; and,
  - g Referring to the testimony of witness Thomas at 20, please explain and quantify how using AEP Ohio's capacity rate assumption, instead of the values currently established by the commission, impacts the POLR values.

**INT-056 (CONTINUED)**

**RESPONSE**

The Company objects to the characterization of testimony in these questions as being inaccurate. Without waiving this objection or any general objection the Company may have, the Company states as follows:

a. See OCC INT-056 a, Attachment 1.

b. The exhibits and testimony that reflect the use of a capacity component based on the rates provided in AEP Ohio's Initial Comments filed in Case No. 10-2929-EL-UNC on January 7, 2011 include: the Competitive Benchmark prices shown on Page 9 of the testimony of Company witness Thomas, Exhibit LJT-1, Exhibit LJT-2, the POLR charge on Page 20 of the testimony of Company witness Thomas, Riders IRP-D and ECS as discussed on Page 5 through 6 of the testimony of Company witness Roush, the market-based price relationship as discussed on Pages 8 through 10 of the testimony of Company witness Roush, Exhibit DMR-1, Exhibit DMR-2, Exhibit DMR-3, Exhibit DMR-5, Exhibit DMR-6 and Exhibit DMR-7. See the Company's response to OCC INT-057.

c. Assuming no other changes, if a lower capacity cost is used, the Competitive Benchmark prices shown on Page 9 of the testimony of Company witness Thomas and in Exhibit LJT-1 will decrease.

d. See the Company's response to OCC INT-56, part c and OCC RPD-036. The weighted average/total Competitive Benchmark price is used in Exhibit LJT-2.

e. Assuming no other changes, if a lower capacity cost is used in the Competitive Benchmark price, the POLR cost will increase.

Prepared By: David M. Roush/Laura J. Thomas

Ohio Power Company (\$-MW/Day)				
Planning Year	11/12	12/13	13/14	
FRR	387.78	387.78	387.78	
RPM	110.00	16.46	27.73	
Delta	277.78	371.32	360.05	

Columbus Southern Power (\$-MW/Day)				
Planning Year	11/12	12/13	13/14	
FRR	299.81	299.81	299.81	
RPM	110.00	16.46	27.73	
Delta	189.81	283.35	272.08	

## MARKET PRICES DEVELOPED BY COMPANIES - SOURCE LAURA J THOMAS FILED WORKPAPERS

	2012	2013	2014	Jan-13 - May-14	2012	2013	2014	Jan-13 - May-14	2012	2013	2014	Jan-13 - May-14
ATC Simple Swap	40.59	43.50	47.68	45.06	40.59	43.50	47.68	45.06	40.59	43.50	47.68	45.06
Base	0.58	0.98	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Load Shape and Following	6.54	6.85	7.27	6.90	3.17	3.24	3.38	3.09	2.77	2.85	3.04	2.95
Retail Administration	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
All Energy Req.	0.54	0.75	0.91	0.78	0.54	0.75	0.91	0.78	0.54	0.75	0.91	0.78
Arbitrage	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Losses	3.04	3.24	3.53	3.32	1.78	1.85	2.06	1.95	0.79	0.84	0.92	0.87
Capacity	28.50	28.14	28.22	28.31	25.04	22.20	22.04	22.39	18.28	16.50	16.64	16.39
ARR Credit	(1.40)	(1.39)	(1.40)	(1.40)	(1.06)	(1.05)	(1.04)	(1.06)	(0.93)	(0.93)	(0.94)	(0.92)
Transaction Risk Adder	4.20	4.36	4.62	4.44	3.71	3.84	4.06	3.92	3.31	3.49	3.72	3.57
Total \$/MWh	88.16	91.63	97.01	93.20	77.84	80.54	85.28	82.34	69.53	73.15	78.15	74.90

## PERCENT CONTRIBUTION OF EACH COMPONENT OF THE COMPANIES' FORECASTED MARKET PRICE

	2012	2013	2014	Jan-13 - May-14	2012	2013	2014	Jan-13 - May-14	2012	2013	2014	Jan-13 - May-14
ATC Simple Swap	46%	47%	48%	48%	52%	54%	50%	50%	56%	56%	56%	56%
Base	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Load Shape and Following	7%	7%	7%	7%	4%	4%	4%	4%	4%	4%	4%	4%
Retail Administration	6%	5%	5%	5%	6%	6%	6%	6%	7%	7%	6%	7%
All Energy Req.	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Arbitrage	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Losses	3%	4%	4%	4%	2%	2%	2%	2%	1%	1%	1%	1%
Capacity	32%	31%	29%	29%	30%	28%	26%	26%	23%	23%	21%	21%
ARR Credit	-2%	-2%	-1%	-1%	-1%	-1%	-1%	-1%	-1%	-1%	-1%	-1%
Transaction Risk Adder	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Total \$/MWh	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Tot Res	48%	1%	54%	50%
Tot Com	1%	1%	1%	1%
Tot Ind	49%	7%	45%	49%

## MARKET PRICES ADJUSTED TO REFLECT THE USE OF THE COMMISSIONS APPROVED METHOD FOR DETERMINING CAPACITY COSTS

Capacity costs embedded in Companies' market price estimates - from Attachment MAT-6

OP	387.78	387.78	387.78	387.78	387.78	387.78	387.78	387.78
CS	298.81	299.81	299.81	299.81	299.81	299.81	299.81	299.81
Avg (\$/MWh Day)	343.795	343.795	343.795	343.795	343.795	343.795	343.795	343.795

RPM costs used in Commission approved state capacity compensation mechanism - from Attachment MAT-6

RPM (\$/MWh-day)	63.23	22.095	27.73	63.23	22.095	27.73	63.23	22.095	27.73
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RPM/Company Rates

RPM/Company Rates	0.184	0.064	0.081	0.184	0.064	0.081	0.184	0.064	0.081
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Resulting Market Prices

	2012	2013	2014	Jan-13 - May-14	2012	2013	2014	Jan-13 - May-14	2012	2013	2014	Jan-13 - May-14
ATC Simple Swap	40.59	43.50	47.68	45.06	40.59	43.50	47.68	45.06	40.59	43.50	47.68	45.06
Base	0.58	0.98	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Load Shape and Following	6.54	6.85	7.27	6.90	3.17	3.24	3.38	3.09	2.77	2.85	3.04	2.95
Retail Administration	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
All Energy Req.	0.54	0.75	0.91	0.78	0.54	0.75	0.91	0.78	0.54	0.75	0.91	0.78
Arbitrage	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Losses	3.04	3.24	3.53	3.32	1.78	1.85	2.06	1.95	0.79	0.84	0.92	0.87
Capacity	28.50	28.14	28.22	28.31	25.04	22.20	22.04	22.39	18.28	16.50	16.64	16.39
ARR Credit	(1.40)	(1.39)	(1.40)	(1.40)	(1.06)	(1.05)	(1.04)	(1.06)	(0.93)	(0.93)	(0.94)	(0.92)
Transaction Risk Adder	4.20	4.36	4.62	4.44	3.71	3.84	4.06	3.92	3.31	3.49	3.72	3.57
Total \$/MWh	64.92	68.30	71.08	68.14	59.78	65.02	69.78	66.02	56.25	57.75	62.05	59.05

INPUTS FROM LAURA J THOMAS FILED WORKPAPER TITLED JAN 07 POLR EVALUATION AND UNCONSTRAINED EXCEL POLR FORMULAS PROVIDED BY AEP

	Residential				Commercial				Industrial			
	2012	1/1/2012	5/31/2012	Average	2012	1/1/2012	5/31/2012	Average	2012	1/1/2012	5/31/2012	Average
Valuation Date		1/1/2012	5/31/2012			1/1/2012	5/31/2012			1/1/2012	5/31/2012	
Option Expiry		5/31/2014	5/31/2014			5/31/2014	5/31/2014			5/31/2014	5/31/2014	
Underlying		\$86.18	\$91.63	\$88.90		\$77.94	\$80.54	\$79.24		\$69.53	\$73.19	\$71.36
Strike		\$67.73	\$71.05	\$69.39		\$57.56	\$59.84	\$58.70		\$51.32	\$53.10	\$52.21
Volatility		21%	25%	23%		27%	25%	26%		27%	25%	26%
Interest Rate		0.01	0.01	0.01		0.01	0.01	0.01		0.01	0.01	0.01
Put Value	\$ 5.0295	\$ 4.6654	\$ 3.3789	\$ 4.3326	\$ 3.7238	\$ 3.3279	\$ 2.3544	\$ 3.1097	\$ 3.3134	\$ 2.6922	\$ 1.8014	\$ 2.5554
							\$ 3.1354				\$ 2.5880	

INPUTS FROM LAURA J THOMAS FILED WORKPAPER TITLED JAN 07 POLR EVALUATION AND UNCONSTRAINED EXCEL POLR FORMULAS PROVIDED BY AEP  
WITH VOLATILITY VALUES SCALED DOWN

	Residential				Commercial				Industrial			
	2012	1/1/2012	5/31/2012	Average	2012	1/1/2012	5/31/2012	Average	2012	1/1/2012	5/31/2012	Average
Valuation Date		1/1/2012	5/31/2012			1/1/2012	5/31/2012			1/1/2012	5/31/2012	
Option Expiry		5/31/2014	5/31/2014			5/31/2014	5/31/2014			5/31/2014	5/31/2014	
Underlying		\$86.19	\$91.63	\$88.91		\$77.94	\$80.54	\$79.25		\$69.53	\$73.19	\$71.36
Strike		\$67.73	\$71.05	\$69.39		\$57.56	\$59.84	\$58.70		\$51.32	\$53.10	\$52.21
Volatility		13%	12%	12%		15%	14%	14%		15%	14%	14%
Interest Rate		0.01	0.01	0.01		0.01	0.01	0.01		0.01	0.01	0.01
Put Value	\$ 0.6740	\$ 0.5903	\$ 0.2397	\$ 0.4668	\$ 0.6186	\$ 0.5006	\$ 0.2210	\$ 0.4201	\$ 0.6080	\$ 0.5444	\$ 0.2395	\$ 0.4878
							\$ 0.4467				\$ 0.5308	
Impact of Change in Volatility Value (By Class)				\$ (3.87)				\$ (2.69)				\$ (2.07)
Impact of Change in Volatility Value (By Class)				-6%				-6%				-6%
Class Weighted Impact of Change in Volatility Value				-85%				-85%				-81%

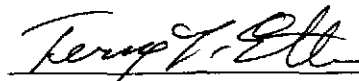
INPUTS FROM LAURA J THOMAS FILED WORKPAPER TITLED JAN 07 POLR EVALUATION AND UNCONSTRAINED EXCEL POLR FORMULAS PROVIDED BY AEP  
WITH MARKET PRICES (UNDERLYING) REDUCED TO REFLECT COMMISSION APPROVED CAPACITY COMPENSATION MECHANISM

	Residential				Commercial				Industrial			
	2012	1/1/2012	5/31/2012	Average	2012	1/1/2012	5/31/2012	Average	2012	1/1/2012	5/31/2012	Average
Valuation Date		1/1/2012	5/31/2012			1/1/2012	5/31/2012			1/1/2012	5/31/2012	
Option Expiry		5/31/2014	5/31/2014			5/31/2014	5/31/2014			5/31/2014	5/31/2014	
Underlying		\$64.92	\$65.30	\$65.11		\$58.14	\$58.78	\$58.46		\$58.25	\$58.75	\$58.50
Strike		\$67.73	\$71.05	\$69.39		\$57.56	\$59.84	\$58.70		\$51.32	\$53.10	\$52.21
Volatility		21%	25%	23%		27%	25%	26%		27%	25%	26%
Interest Rate		0.01	0.01	0.01		0.01	0.01	0.01		0.01	0.01	0.01
Put Value	\$ 12.1793	\$ 13.2916	\$ 10.2522	\$ 11.8821	\$ 8.7107	\$ 9.0212	\$ 6.7033	\$ 8.1176	\$ 6.5215	\$ 6.2527	\$ 4.4402	\$ 5.7016
							\$ 8.1451				\$ 5.7381	
Impact of Change in Capacity Cost (By Class)				\$ 7.55				\$ 5.01				\$ 3.15
Impact of Change in Capacity Cost (By Class)				174%				161%				123%
Class Weighted Impact of Change in Capacity Cost				150%								



## CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of Mack A. Thompson* was served via electronic transmission to the persons listed below on this 25<sup>th</sup> day of July, 2011.

  
Terry L. Etter  
Assistant Consumers' Counsel

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