

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Commission Review of Capacity Charges of Ohio Power Company and Columbus Southern Power Company)	Case No. 10-2929-EL-UNC
In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan)	Case No. 11-346-EL-SSO Case No. 11-348-EL-SSO
In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Approval of Certain Accounting Authority)	Case No. 11-349-EL-AAM Case No. 11-350-EL-AAM
In the Matter of the Application of Ohio Power Company to Adopt a Final Implementation Plan for the Retail Stability Rider)	Case No. 14-1186-EL-RDR

DIRECT TESTIMONY OF
WILLIAM A. ALLEN
ON BEHALF OF
OHIO POWER COMPANY

Filed: October 4, 2016

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WILLIAM A. ALLEN

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BEFORE
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1 **PERSONAL DATA**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is William A. Allen, and my business address is 1 Riverside Plaza, Columbus,
4 Ohio 43215.

5 **Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?**

6 A. I am employed by the American Electric Power Service Corporation (“AEPSC”) as
7 Managing Director of Regulatory Case Management. AEPSC supplies engineering,
8 regulatory, financing, accounting, and planning and advisory services to the electric
9 operating companies of the American Electric Power Co. Inc. (“AEP”) system, one of
10 which is Ohio Power Company (“AEP Ohio” or the “Company”).

11 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
12 **BACKGROUND.**

13 A. I received a Bachelor of Science in Nuclear Engineering from the University of
14 Cincinnati in 1996 and a Master of Business Administration from the Ohio State
15 University in 2004.

16 I was employed by AEPSC beginning in 1992 as a Co-op Engineer in the Nuclear
17 Fuels, Safety, and Analysis Department and, upon completing my degree in 1996, was
18 hired on a permanent basis in the Nuclear Fuel Section of the same Department. In
19 January 1997, the Nuclear Fuel Section became a part of Indiana Michigan Power

1 Company ("I&M") due to a corporate restructuring. In 1999, I transferred to the
2 Business Planning Section of the I&M Nuclear Generation Group as a Financial Analyst.
3 In 2000, I transferred back to AEPSC into the Regulatory Pricing and Analysis Section as
4 a Regulatory Consultant. In 2003, I transferred into the Corporate Financial Forecasting
5 department as a Senior Financial Analyst. In 2007, I was promoted to the position of
6 Director of Operating Company Forecasts. In that role, I was primarily responsible for
7 the supervision of the financial forecasting and analysis of the AEP system's operating
8 companies, including AEP Ohio. In 2010, I transferred to the Regulatory Services
9 Department as Director of Regulatory Case Management. I was named to my current
10 position in January 2013.

11 **Q. WHAT ARE YOUR RESPONSIBILITIES AS MANAGING DIRECTOR OF**
12 **REGULATORY CASE MANAGEMENT?**

13 A. I am primarily responsible for the supervision, oversight, and preparation of major filings
14 with state utility commissions and the Federal Energy Regulatory Commission
15 ("FERC").

16 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN ANY REGULATORY**
17 **PROCEEDINGS?**

18 A. Yes. I have previously testified before the Public Utilities Commission of Ohio
19 ("Commission") on behalf of AEP Ohio. I have also submitted testimony or testified
20 before the Michigan Public Service Commission, the Indiana Utility Regulatory
21 Commission, the Kentucky Public Service Commission, the West Virginia Public Service
22 Commission, and the Virginia State Corporation Commission on behalf of various other
23 electric operating companies of the American Electric Power system.

1 **PURPOSE OF TESTIMONY**

2 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

3 A. The purpose of my testimony is to: (1) describe the history of the proceedings leading up
4 to this filing; (2) demonstrate that, on remand from the Ohio Supreme Court's decision in
5 *In re Commission Review of Capacity Charges of Ohio Power*, 2016-Ohio-1607
6 ("Capacity Charge Appeal"), the appropriate energy credit to be applied to the
7 Company's cost-based capacity charge is \$47.46/MW-day, resulting in a net capacity
8 cost of \$288.83/MW-day (as opposed to the original \$188.88/MW-day rate); (3)
9 demonstrate that the Company's cost of providing capacity to competitive retail electric
10 service ("CRES") providers under the State Compensation Mechanism from August 8,
11 2012 to May 31, 2015 exceeded the revenues the Company collected from those CRES
12 providers by \$1.02 billion; (4) identify that the retail stability rider ("RSR") collection
13 through May 31, 2015 consisted of \$121 million that originally applied to the deferral
14 balance and a non-deferral portion of \$327 million; (5) provide a calculation showing
15 AEP Ohio's corrected capacity costs, subject to regulatory deferral, based upon a
16 corrected capacity charge of \$288.83/MW-day and application of the non-deferral portion
17 of the RSR consistent with the Court's direction as of the end of May 31, 2015, were
18 \$601 million; and (6) provide a calculation of the updated RSR rates that will provide for
19 recovery of the balance of deferred capacity costs through May 2018.

20 **Q. ARE YOU SPONSORING ANY EXHIBITS AS A PART OF YOUR**
21 **TESTIMONY?**

22 A. Yes. I am sponsoring the following exhibits:

23 Exhibit WAA-REM1 – Market Price Comparison

- 1 Exhibit WAA-REM2 – Fuel Cost Comparison
- 2 Exhibit WAA-REM3 – Heat Rate Comparison
- 3 Exhibit WAA-REM4 – Summary of Capacity Regulatory Deferrals
- 4 Exhibit WAA-REM5 – Calculation of Retail Stability Rider

5 **HISTORY OF PROCEEDINGS**

6 **Q. PLEASE IDENTIFY THE CASES AND TOPICS THAT THE COMPANY IS**
7 **ADDRESSING IN THIS FILING.**

8 A. This filing is addressing several interrelated cases that span a number of years beginning
9 in late 2010. The first of these is Case No. 10-2929-EL-UNC (the “*Capacity Charge*”
10 proceeding), which addressed AEP Ohio’s capacity charges to CRES providers that were
11 using the Company’s capacity to serve shopping customers. The second of these is Case
12 Nos. 11-346-EL-SSO et al. (the “*ESP II*” proceeding), which addressed the Company’s
13 second Electric Security Plan (“ESP”) covering the period August 2012 through May
14 2015. The next is Case Nos. 14-1186-EL-RDR et al. (the “*RSR Implementation Plan*”
15 proceeding), which established a rider to collect the balance of deferred capacity costs
16 resulting from the *Capacity Charge* and *ESP II* proceedings. Each of these sets of cases
17 addressed various aspects of the recovery of the Company’s capacity-related costs, either
18 from CRES providers, standard service offer (“SSO”) customers, or all customers.

19 **Q. PLEASE DISCUSS THE HISTORY OF THE *CAPACITY CHARGE* CASE.**

20 A. On November 1, 2010, AEP Ohio filed an application with FERC in FERC Docket No.
21 ER11-1995-000. On November 24, 2010, at the direction of FERC, AEP Ohio refiled its
22 application in FERC Docket No. ER11-2183-000. As a Fixed Resource Requirement
23 (“FRR”) entity, AEP Ohio proposed to implement an existing clause within the PJM

1 Reliability Assurance Agreement (“RAA”) to change the basis of compensation for use
2 of its capacity by CRES providers to an AEP Ohio cost-based method.

3 AEP Ohio had self-supplied its capacity as an FRR entity since the inception of
4 PJM’s Reliability Assurance Agreement (“RAA”) in June 2007, thus opting out of the
5 PJM RPM auction market for purposes of meeting its load obligations each year through
6 planning year 2014/2015. Since the RPM auction inception, AEP Ohio had been
7 compensated at the adjusted PJM RPM auction price for supplying capacity associated
8 with load lost to CRES providers who chose not to self-supply their own capacity. The
9 CRES providers who chose not to self-supply merely acted as middle-men on capacity
10 flowing from AEP Ohio and really were competing for customers based on short-term
11 energy pricing. It is important to note that CRES providers had the ability to self-supply
12 capacity under AEP Ohio’s FRR plan throughout this period but chose not to commit
13 capacity resources to serve customers and instead purchased capacity from AEP Ohio.

14 In its November 2010 FERC application, AEP Ohio proposed cost-based formula
15 tariffs that were based on AEP Ohio’s¹ 2009 FERC Form 1 filings. In response to AEP
16 Ohio’s November 2010 application to the FERC, the Commission represented to FERC
17 that, as of December 8, 2010, it was “adopt[ing] as the state compensation mechanism for
18 [AEP Ohio] the current capacity charges established by the three-year capacity auction
19 conducted by PJM,” which is the PJM RPM auction price. At the same time the
20 Commission initiated a proceeding, the *Capacity Charge* case, to determine what changes

¹ For simplicity, I use the term “AEP Ohio” here to refer to Ohio Power Company and Columbus Southern Power both before and after their merger.

1 to the current state compensation mechanism (“SCM”) were appropriate and to determine
2 AEP Ohio’s FRR capacity charges to CRES providers.

3 On August 31, 2011, AEP Ohio filed testimony in the *Capacity Charge* case to
4 support a cost-based capacity charge that would remedy the situation where CRES
5 providers were receiving a subsidy for their use of the Company’s capacity due to the use
6 of RPM auction prices. That testimony included a cost-based formula rate to determine
7 the appropriate compensation for CRES use of the Company’s capacity. Based upon
8 2010 cost data, the Company supported a cost-based capacity rate of \$355.72/MW-day.
9 A settlement in the Capacity Case was approved by the Commission on December 14,
10 2011, and subsequently rejected on February 23, 2012.

11 Testimony was then filed by various parties, including testimony on behalf of the
12 Commission Staff, and a lengthy evidentiary hearing was undertaken. On July 2, 2012,
13 the Commission issued an Opinion and Order (“*Capacity Charge* Opinion and Order”)
14 finding that a cost-based capacity charge of \$188.88/MW-day was appropriate. The
15 capacity charge of \$188.88/MW-day was based upon a cost of capacity of \$342.95/MW-
16 day, an offset for ancillary service revenues of \$6.66/MW-day, Staff’s proposed energy
17 credit of \$152.41/MW-day, and an adjustment to reflect AEP Ohio’s full requirements
18 contract with Wheeling Power Company of \$5.00/MW-day.

Capacity Charge Adopted in *Capacity Charge* Opinion and Order (pp. 34-35)

	(\$/MW-day)
Filed Cost of Capacity	355.72
Commission Cost of Service Adjustments	(12.77)
Ordered Cost of Capacity	342.95
Ancillary Service Revenues	(6.66)
Staff’s Proposed Energy Credit	(152.41)
Wheeling Power Contract Offset	5.00
Ordered Capacity Charge with Energy Credit	188.88

1 The *Capacity Charge* Opinion and Order also directed the Company to modify its
2 accounting procedures to defer the difference between the adjusted RPM rate and the
3 Company's incurred capacity costs, but only up to the Commission-approved Capacity
4 Charge of \$188.88/MW-day. The Opinion and Order also indicated that recovery of the
5 deferral would be addressed in the *ESP II* proceeding.

6 **Q. PLEASE DISCUSS THE HISTORY OF AEP OHIO'S ESP II.**

7 A. On January 7, 2011 AEP Ohio filed its second ESP. This ESP proposed the continuation
8 of several elements from the first ESP as well as new benefits for AEP Ohio's customers.
9 The case was consolidated with several other cases, including the *Capacity Charge*
10 proceeding, and parties filed a Stipulation and Recommendation on September 7, 2011.
11 The Stipulation was modified and approved by the Commission on December 14, 2011,
12 but was later rejected by the Commission on February 23, 2012.

13 On March 30, 2012, AEP Ohio filed an application to modify its ESP II
14 application for the period of June 1, 2012 through May 15, 2015. This modified
15 application included newly proposed components, including highly discounted capacity
16 charges and a newly proposed RSR. The proposed RSR was to encourage customer
17 shopping through discounted capacity prices while retaining reasonable rates for SSO
18 customers and to ensure that AEP Ohio was not financially harmed as it transitioned
19 toward a competitive auction for SSO supply. This case involved over forty-five
20 intervenors, many of them filing testimony, and several weeks of evidentiary hearings
21 with over seventy witnesses testifying.

22 On August 8, 2012, the Commission issued an Opinion and Order in the *ESP II*
23 case ("*ESP II* Opinion and Order") approving, among other things, the RSR. The

1 Commission found that the RSR promotes stable retail electric service and ensures
2 customer certainty regarding retail electric service. The Commission set the RSR
3 recovery amounts through May of 2015 and ordered that \$1/MWh of the amount
4 collected be allocated toward AEP Ohio's capacity deferral recovery, as ordered in the
5 *Capacity Charge* case. Any remaining balance of the capacity deferral that remained at
6 the conclusion of the modified ESP period was to be amortized and collected over a three
7 year period. Following the Commission's directive to establish a means of recovering the
8 remaining *Capacity Charge* deferral following the completion of *ESP II*, AEP Ohio filed
9 Case No. 14-1186-EL-RDR (the "*RSR Implementation Plan*" case). On April 2, 2015,
10 the Commission, through its order in the *RSR Implementation Plan* proceeding,
11 confirmed that AEP Ohio should continue to assess the RSR at a rate of \$4.00/MWh until
12 the complete *Capacity Charge* deferral balance was recovered.

13 **ENERGY CREDIT**

14 **Q. DID YOU PROVIDE TESTIMONY IN THE *CAPACITY CHARGE* CASE?**

15 A. Yes. I offered direct and rebuttal testimony in the *Capacity Charge* case.

16 **Q. HAVE YOU REVIEWED THE OHIO SUPREME COURT'S OPINION IN CASE**
17 **NOS. 2012-2098 AND 2013-0228?**

18 A. Yes. I have been advised by counsel that the Court remanded the determination of the
19 energy credit to the Commission to substantively address AEP's input arguments.
20 Specifically, the Court noted that AEP Ohio had raised numerous substantive objections
21 to the energy credit, including, among other things, that the model used by Energy
22 Ventures Analysis ("EVA") "(1) was not properly calibrated, which resulted in overstated
23 gross energy margins by more than 200 percent, (2) wrongly incorporated traditional off-

1 system-sales margins, (3) failed to properly reflect AEP’s System Interconnection
2 Agreement (‘pool agreement’) for off-system sales, (4) overstated forecasted market
3 prices, (5) understated fuel costs for coal units, and (6) understated heat rates for
4 generation facilities.” *In re Commission Review of Capacity Charges of Ohio Power*,
5 2016-Ohio-1607, ¶ 52 (“*Capacity Charge Appeal*”). The Court found that the
6 Commission had erred by “approv[ing] the staff’s proposed energy credit without
7 specifically addressing any of AEP’s challenges to the inputs used in EVA’s
8 methodology.” *Id.* ¶ 53. Thus, the Court “reverse[d] this part of the order and direct[ed]
9 the commission on remand to substantively address AEP’s input arguments.” *Id.* ¶ 57.

10 Of the six items identified in the Court’s opinion, my testimony specifically
11 addresses the last three items – (4) overstated forecasted market prices, (5) understated
12 fuel costs for coal units, and (6) understated heat rates for generation facilities. The first
13 item – related to the model not being properly calibrated – is addressed by my proposed
14 corrections to items four through six. The second item – related to wrongly incorporated
15 traditional off-system-sales margins – results in “phantom” off-system sales (“OSS”)
16 margins from non-shopping customers being improperly included as a component of the
17 OSS margins used to calculate the energy credits. While correcting for this error would
18 reduce the energy credit below the level I have proposed, I have not calculated the impact
19 of correcting this error. The third item – related to the failure to properly reflect AEP’s
20 System Interconnection Agreement (“Pool Agreement”) for off-system sales – is not
21 being addressed in my testimony. The Pool Agreement was terminated at the end of
22 2013. Addressing the impact of the Pool Agreement for the first half of the period would
23 have further reduced the energy credit of \$47.46/MW-day that I am supporting.

1 **Q. CAN YOU DESCRIBE WHAT AN ENERGY CREDIT IS IN THE CONTEXT OF**
2 **A CAPACITY CHARGE?**

3 A. In the PJM “market,” a power plant obtains revenue from two primary sources – sales of
4 capacity and sales of energy. An energy credit is an approach to reduce the overall cost
5 of capacity to reflect potential margins that a power plant could obtain from sales of
6 energy. A cost-based capacity charge developed with an appropriate energy credit allows
7 a power plant to earn revenues from the sale of capacity and energy that are sufficient to
8 cover its full cost of providing capacity and energy. If the capacity charge is developed
9 with an energy credit that is overstated, the power plant will be unable to collect its full
10 cost of providing capacity.

11 **Q. DID YOU ADDRESS OVERSTATED FORECASTED MARKET PRICES,**
12 **UNDERSTATED FUEL COSTS FOR COAL UNITS, AND UNDERSTATED**
13 **HEAT RATES FOR GENERATION FACILITIES IN YOUR REBUTTAL**
14 **TESTIMONY IN THE *CAPACITY CHARGE* CASE?**

15 A. Yes. I addressed each of these items in my rebuttal testimony in the *Capacity Charge*
16 case. In that testimony I demonstrated that these three input errors resulted in an
17 overstatement in the Staff’s proposed energy credit of \$99.95/MW-day. This overstated
18 energy credit resulted in understated costs for AEP Ohio to provide capacity to load
19 served by CRES providers of approximately \$470 million over the period August 2012
20 through May 2015.

	(\$/MW-day)
Medine’s Energy Credit	152.41
Correction to Address Wheeling Power Contract	(5.00)
Approved Energy Credit	147.41
Additional Input Errors	

Understated Fuel Costs for Coal Units	(70.10)
Understated Heat Rate for Gas Units	(1.87)
Overstated Market Prices	(50.42)
Cross Impact of Fuel and Market	22.44
Total Impact of Input Errors	(99.95)
Corrected Energy Credit	47.46

1 **Q. WERE THESE THE ONLY ERRORS THAT YOU IDENTIFIED IN THE STAFF**
2 **CONSULTANT’S PROPOSED ENERGY CREDIT?**

3 A. No, but they are the ones that relate to the scope of this remand proceeding. In the
4 *Capacity Charge* case, the Staff employed an outside party, EVA, to evaluate the energy
5 credit and to present testimony on behalf of the Staff. EVA presented an analysis
6 attempting to calculate an energy credit to be used in developing a capacity charge to be
7 applied to load served by CRES providers who were using the Company’s capacity.
8 EVA initially presented the testimony of Ryan Harter. My initial review of Mr. Harter’s
9 analysis identified a number of significant errors. Further errors were brought out during
10 Mr. Harter’s extensive cross examination at the hearing. Mr. Harter attempted to revise
11 his analysis to correct these errors and submitted an updated analysis in the hearing phase
12 of the proceeding. Upon further review, this updated analysis included “significant,
13 inadvertent errors in estimating the energy credits,”² and a third analysis was prepared by
14 EVA and presented by Emily S. Medine. As described in my rebuttal testimony and the
15 rebuttal testimony of Company witness Nelson, this final analysis continued to include
16 numerous and substantive errors – in terms of assumptions, methodology and inputs. The
17 errors in Mr. Harter’s and Ms. Medine’s testimony began with elements as fundamental

² Memorandum in Support of Staff’s Expedited Motion for Extension of Procedural Schedule and to Accept Testimony, filed May 1, 2012 in Case No. 10-2929-EL-UNC..

1 as a failure to identify the correct generating units to include in their analysis. My
2 rebuttal testimony related to the energy credit was primarily focused on errors in
3 assumptions and inputs. In the remainder of this testimony, I will focus on the input
4 errors that the Supreme Court required the Commission to address on remand.

5 **Q. PLEASE DESCRIBE THE INPUT ERRORS ASSOCIATED WITH**
6 **OVERSTATED FORECASTED MARKET PRICES.**

7 A. Ms. Medine's energy credit calculation included an overstated forecast of market prices,
8 which in turn resulted in an overstated energy credit. When I compared the forecasted
9 market prices used in Ms. Medine's testimony to the then-current forward market prices
10 for the three-year period the rate would be in effect, I determined that the forecasted
11 market prices were overstated by \$4.31/MWh on average or 13%³.

12 **Q. HAVE YOU COMPARED ADDITIONAL FORWARD MARKET PRICES TO**
13 **THE FORECASTED MARKET PRICES PRESENTED BY MS. MEDINE?**

14 A. Yes, I have. In order to determine whether Ms. Medine's forecasted market prices
15 reasonably reflected prices that a generator could have expected to receive, I have
16 compared her prices to the forward prices that existed on the December 31 just prior to
17 the calendar year in question. Forward market prices represent the price at which willing
18 buyers and sellers have agreed to transact in the market. For 2012, I continue to use the
19 April 25, 2012 forwards for comparison purposes, since those were current as of the time
20 of filing my original rebuttal testimony. Review of the data shows that throughout the
21 forecast period, Ms. Medine's forecasted market prices were significantly higher than

³ Case No. 10-2929-EL-UNC Rebuttal Testimony of William A. Allen filed on May 11, 2012, Exhibit WAA-R4

1 forward market prices. In fact, her forecasted prices exceeded the updated forward
2 market prices in each of the thirty-six months included in her forecast. Ms. Medine's
3 forecasted market prices exceeded the updated forward market prices by an average of
4 \$5.24/MWh or 16.1% as reflected in Exhibit WAA-REM1.

5 **Q. HAVE YOU SIMILARLY COMPARED THE UPDATED FORWARD MARKET**
6 **PRICES THAT OCCURRED TO THE FORWARD MARKET PRICES THAT**
7 **YOU PRESENTED IN YOUR REBUTTAL TESTIMONY?**

8 A. Yes. In contrast to the significantly overstated market prices presented by Ms. Medine,
9 the forward market prices presented in my rebuttal testimony align very closely with the
10 updated forward market prices. The forward market prices presented in my rebuttal
11 testimony were only \$0.93/MWh or 2.8% higher than the updated forward market prices.
12 This confirms that the forward market prices presented in my rebuttal testimony were a
13 more appropriate input to use in the analysis of an energy credit than Ms. Medine's
14 forecasted market prices. I have provided this comparison as Exhibit WAA-REM1.

15 **Q. PLEASE DESCRIBE THE INPUT ERRORS ASSOCIATED WITH**
16 **UNDERSTATED FUEL COSTS FOR COAL UNITS.**

17 A. In reviewing the fuel costs data used in Mr. Harter and Ms. Medine's analysis, I observed
18 that the fuel cost data for certain AEP Ohio generation facilities was very low compared
19 to historical data, and use of fuel costs that were too low resulted in an overstated energy
20 credit. As an example, the forecasted fuel costs used in EVA's analysis for the two 1,300
21 MW Gavin units were between \$13/MWh and \$15/MWh, well below the level that I
22 would expect. On cross examination during the *Capacity Charge* case hearing, Ms.
23 Medine admitted that the projected costs for the Gavin units used in her analysis were

1 “certainly aggressive.”⁴ To put these values in perspective, the actual fuel costs for the
2 Gavin units in 2011, the year just prior to the filing of Ms. Medine’s analysis, were
3 \$20.2/MWh.⁵ In reviewing the fuel costs for the other coal units listed in the final
4 workpapers of Staff witness Medine, I observed that the analysis included similar
5 understatements of fuel costs. I estimated that the impact of these understated fuel costs,
6 based on actual 2011 fuel costs, was an overstatement of the energy credit of
7 \$70.10/MWh.⁶

8 **Q. HAVE YOU COMPARED THE ACTUAL FUEL COSTS FOR THE COAL**
9 **PLANTS TO THE FUEL COSTS USED BY MS. MEDINE OR THOSE**
10 **PRESENTED IN YOUR REBUTTAL TESTIMONY?**

11 A. Yes. A comparison of actual fuel costs to those used by Ms. Medine shows that her
12 analysis used significantly understated fuel costs. Focusing first on the Gavin units, the
13 actual fuel costs for Gavin exceeded those used by Ms. Medine by over \$7/MWh in each
14 year from 2012 to 2015. Ms. Medine used fuel costs for the Gavin plant in the range of
15 \$13.1/MWh to \$14.7/MWh, when the actual fuel costs were in the range of \$22.4/MWh
16 to \$24.7/MWh. In my rebuttal testimony, I had suggested that a conservative approach to
17 future fuel costs for the coal plants was to use actual fuel costs for 2011.⁷ For the Gavin
18 plant, actual fuel costs for 2011 were \$20.2/MWh, which is much closer to the actual fuel

⁴ Case No. 10-2929-EL-UNC Tr. Vol. X, at 2288- 2289 (May 9, 2012).

⁵ Case No. 10-2929-EL-UNC, IEU Ex. 120.

⁶ Case No. 10-2929-EL-UNC, AEP Ohio Ex. 142, Rebuttal Testimony of William A. Allen (May 11, 2012), Exhibit WAA-R1.

⁷ Case No. 10-2929-EL-UNC, AEP Ohio Ex. 142, Rebuttal Testimony of William A. Allen (May 11, 2012), at 6:1-7.

1 costs incurred in 2012 through 2015 – and, in fact, quite conservative. My review of
2 actual fuel costs for all of the coal plants shows similar results. I have provided a
3 comparison for each of the coal plants as Exhibit WAA-REM2. This exhibit confirms
4 that the historical fuel prices presented in my rebuttal testimony were a more appropriate
5 input to use in the analysis of an energy credit than Ms. Medine’s fuel costs.

6 **Q. PLEASE DESCRIBE THE INPUT ERRORS ASSOCIATED WITH**
7 **UNDERSTATED HEAT RATES FOR GENERATION FACILITIES.**

8 A. Ms. Medine’s energy credit calculation included understated heat rates for several
9 generating units, and use of heat rates that were too low resulted in understated fuel
10 consumption and costs and an overstated energy credit. The impact of understated heat
11 rates for any of the coal units was captured in the fuel cost discussion above. In my
12 rebuttal testimony, I showed that the understated heat rates for the gas plants that Ms.
13 Medine used in her analysis resulted in an energy credit that was overstated by
14 \$1.87/MW-day.⁸

15 **Q. HAVE YOU COMPARED THE ACTUAL HEAT RATES FOR THE GAS**
16 **PLANTS TO THE HEAT RATES USED BY MS. MEDINE OR THOSE**
17 **PRESENTED IN YOUR REBUTTAL TESTIMONY?**

18 A. Yes. The most egregious error in heat rates used in Ms. Medine’s analysis was the use of
19 a 9,000 BTU/kWh heat rate for the Darby Generating Station. In my rebuttal testimony, I
20 pointed out that a more appropriate heat rate to use would have been the actual 2011
21 value of 12,429 BTU/kWh. In reviewing the actual heat rates for 2012 through 2015, I

⁸ Case No. 10-2929-EL-UNC, AEP Ohio Ex. 142, Rebuttal Testimony of William A. Allen (May 11, 2012), Exhibit WAA-R3, at 4.

1 confirmed that the heat rate for the Darby Generating Station was approximately 12,000
2 BTU/kWh. A comparison of Ms. Medine's modeled inputs to the actual heat rates of the
3 gas plants is provided as Exhibit WAA- REM3.

4 **Q. HAVE YOU CALCULATED THE CAPACITY CHARGE THAT WOULD HAVE**
5 **RESULTED FROM THE CORRECTIONS TO INPUTS AND ASSUMPTIONS IN**
6 **MS. MEDINE'S ENERGY AS IDENTIFIED IN YOUR REBUTTAL**
7 **TESTIMONY?**

8 A. Yes. The errors in inputs and assumptions resulted in Ms. Medine's energy credit being
9 overstated by \$99.95/MW-day. Correcting for these errors results in an adjusted energy
10 credit of \$47.46/MW-day and a corrected capacity charge of \$288.83/MW-day.

	(\$/MW-day)
Cost of Capacity	342.95
Ancillary Service Revenues	(6.66)
Adjusted Energy Credit	(47.46)
Corrected Capacity Charge	288.83

11 **BASE GENERATION RATES**

12 **Q. DID THE OVERSTATEMENT OF THE ENERGY CREDIT HAVE AN IMPACT**
13 **ON BASE GENERATION RATES FOR NON-SHOPPING CUSTOMERS?**

14 A. Yes. In its November 13, 2013, Opinion and Order in Case No 12-3254-EL-UNC, the
15 Commission ordered AEP Ohio to blend base generation rates with the cost-based
16 capacity rate determined in the *Capacity Charge* case in a proportion equal to the amount
17 of energy procured through auctions (e.g. 10%, 60%, 100%). The overstatement of the
18 energy credit by \$99.95/MW-day resulted in reduced revenue from non-shopping
19 customers of approximately \$78 million during the term of ESP II. This resulted in an
20 additional financial harm to AEP Ohio from the overstated energy credit. I am not

1 proposing that this \$78 million of reduced revenue be recovered from customers in this
2 filing, but the Commission should be aware that the substantial errors in Ms. Medine's
3 energy credit calculation caused harm beyond the capacity deferral balance at issue here.

4 **DEFERRED CAPACITY COSTS**

5 **Q. PLEASE DESCRIBE HOW THE COMPANY HAS CALCULATED DEFERRED**
6 **CAPACITY COSTS (UP TO THE COMMISSION APPROVED CAPACITY**
7 **CHARGE OF \$188.88/MW-DAY) SINCE THE COMMISSION ISSUED ITS**
8 **AUGUST 8, 2012 OPINION AND ORDER IN THE *ESP II* PROCEEDING.**

9 A. To determine the level of deferred capacity costs, AEP Ohio has taken the incurred
10 capacity cost (up to the Commission-approved capacity charge of \$188.88/MW-day) for
11 capacity provided to CRES providers serving shopping customers and subtracted the
12 actual capacity revenue received from CRES providers based upon the PJM RPM rate for
13 the Rest of RTO. AEP Ohio then applied \$1/MWh of the RSR revenues during the term
14 of ESP II to reduce the level of the deferred balance. Carrying costs were applied to the
15 monthly balance of the deferral. Beginning in June 2015, 100% of the revenues
16 recovered through the RSR have been used to reduce the level of the deferred balance.

17 **Q. ABOVE YOU JUSTIFY A CORRECTED CAPACITY CHARGE OF \$288.83/MW-**
18 **DAY. HAVE YOU CALCULATED THE DIFFERENCE BETWEEN THE**
19 **INCURRED CAPACITY COSTS FOR CAPACITY PROVIDED TO CRES**
20 **PROVIDERS USING THE CORRECTED \$288.83/MW-DAY CAPACITY**
21 **CHARGE AND THE ACTUAL CAPACITY REVENUES RECEIVED FROM**
22 **CRES PROVIDERS FOR THE PERIOD AUGUST 8, 2012 THROUGH MAY 31,**
23 **2015?**

1 A. Yes. Using an energy credit of \$47.46/MW-day and a corrected net incurred capacity
2 cost of \$288.83/MW-day, AEP Ohio's actual incurred capacity costs for capacity
3 provided to CRES providers for that period was \$1.36 billion. The capacity revenues
4 received from CRES providers during that period was only \$358 million. This resulted in
5 an actual under-recovery of capacity costs of \$1.02 billion.

6 **Q. IN THE *ESP II* APPEAL, THE OHIO SUPREME COURT INSTRUCTED THAT**
7 **THE BALANCE OF THE CAPACITY COST DEFERRAL BE ADJUSTED TO**
8 **ELIMINATE THE NON-DEFERRED PORTION OF THE RSR REVENUE**
9 **COLLECTED DURING ESP II. HAVE YOU CALCULATED THE LEVEL OF**
10 **NON-DEFERRED RSR REVENUES THAT WERE COLLECTED FROM**
11 **CUSTOMERS OVER THE PERIOD SEPTEMBER 2012 THROUGH MAY 2015?**

12 A. Yes. Over the period September 2012 through May 2015, \$448 million in RSR revenues
13 were collected. This is inclusive of the \$1/MWh that the Commission directed to be
14 applied to reduce the balance of deferred capacity costs in its August 8, 2012 Opinion and
15 Order in the ESP II case. Of the \$448 million of total RSR revenues collected, \$121
16 million related to the \$1/MWh originally applied to the balance of the capacity cost
17 deferral. Thus, the non-deferred portion of the RSR revenue is \$327 million.

18 **Q. HAVE YOU DEVELOPED A CALCULATION OF THE CORRECTED**
19 **BALANCE OF DEFERRED CAPACITY COSTS TAKING INTO ACCOUNT**
20 **ALL OF THE ADJUSTMENTS YOU HAVE DISCUSSED ABOVE?**

21 A. Yes. I have prepared a calculation of the deferred capacity costs, including carrying costs
22 of \$51 million, through May 31, 2015 based upon an incurred capacity cost of
23 \$288.83/MW-day. This calculation also reflects the application of 100% of RSR

1 revenues being applied against the capacity cost deferral and monthly long-term debt
2 carrying costs beginning in August of 2012 consistent with the directive of the Ohio
3 Supreme Court. This calculation is provided as Exhibit WAA-REM4 and shows total
4 corrected deferred capacity costs of \$601 million as of May 31, 2015. The calculation
5 was performed by first updating the incurred capacity costs on a monthly basis to reflect
6 a capacity charge of \$288.83/MW-day and offsetting these costs with actual CRES
7 revenues received and the deferral portion of the RSR revenues. The next step was to
8 offset the balance of the deferred capacity costs by the non-deferred portion of the RSR
9 on a monthly basis. The final step was to calculate a carrying cost on the net balance
10 subject to regulatory deferral.

11 **Q. WHAT WOULD THE BALANCE OF DEFERRED CAPACITY COSTS HAVE**
12 **BEEN PRIOR TO RECOGNIZING THE CORRECTED CAPACITY CHARGE**
13 **AND APPLYING THE NON-DEFERRAL PORTION OF THE RSR AS AN**
14 **OFFSET TO THE BALANCE?**

15 A. The balance of deferred capacity costs as of May 31, 2015, would have been \$444
16 million versus the corrected balance of \$601 million described above.

17 **UPDATED RSR RATES**

18 **Q. HAVE YOU PREPARED A CALCULATION OF THE RATES THAT WOULD**
19 **PROVIDE FOR RECOVERY OF THE BALANCE OF DEFERRED CAPACITY**
20 **COSTS REFLECTING THE CORRECTED CAPACITY CHARGE OF**
21 **\$288.83/MW-DAY AND THE COURT'S DIRECTIVE WITH REGARD TO THE**
22 **NONDEFERRAL PORTION OF THE RSR?**

1 A. Yes. Based upon a projected capacity deferral balance of \$412 million as of September
2 30, 2016 and new rates effective October 1, 2016, the average RSR rate will be
3 \$5.77/MWh as compared to the current rate of \$4.00/MWh. I have provided a
4 breakdown of the RSR rates by class as Exhibit WAA-REM5.

5 **CONCLUSIONS**

6 **Q. DO YOU HAVE ANY RECOMMENDATIONS OR CONCLUSIONS?**

7 A. Yes, I am recommending that the Commission (1) determine that the appropriate energy
8 credit to be used in determining AEP Ohio's cost based capacity was \$47.46/MW-day;
9 (2) determine that the appropriate cost-based capacity charge to be used in the calculation
10 of AEP Ohio's deferred capacity costs is \$288.83/MW-day; (3) confirm, subject to final
11 audit, that the appropriate balance of deferred capacity costs as of May 31, 2015 is \$601
12 million; and (4) approve the updated RSR rates to recover the corrected capacity deferral
13 balance as set forth in Exhibit WAA-REM5.

14 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

15 A. Yes.

Market Price Comparison

	Time Period	EVA AEP Zone Projection (\$/MWh)	Allen AEP Gen Hub Projection (\$/MWh)	AEP Gen Hub Forwards (\$/MWh)	EVA Variance (\$/MWh)	Allen Variance (\$/MWh)
	2012_06	\$33.32	\$28.38	\$28.38	\$4.94	\$0.00
	2012_07	\$35.81	\$31.74	\$31.74	\$4.07	\$0.00
	2012_08	\$35.72	\$31.74	\$31.74	\$3.98	\$0.00
	2012_09	\$32.16	\$27.16	\$27.16	\$5.00	\$0.00
	2012_10	\$30.95	\$28.43	\$28.43	\$2.52	\$0.00
	2012_11	\$32.30	\$28.43	\$28.43	\$3.87	\$0.00
	2012_12	\$32.11	\$28.43	\$28.43	\$3.68	\$0.00
2012 Average Price		\$33.19	\$29.19	\$29.19	\$4.00	\$0.00
	2013_01	\$40.55	\$32.55	\$38.40	\$2.15	(\$5.85)
	2013_02	\$40.83	\$32.55	\$32.68	\$8.15	(\$0.13)
	2013_03	\$37.89	\$31.58	\$31.51	\$6.38	\$0.07
	2013_04	\$35.12	\$31.58	\$30.91	\$4.21	\$0.67
	2013_05	\$35.78	\$31.75	\$30.83	\$4.95	\$0.92
	2013_06	\$38.21	\$33.51	\$31.35	\$6.86	\$2.16
	2013_07	\$41.00	\$36.43	\$36.28	\$4.72	\$0.15
	2013_08	\$41.64	\$36.43	\$35.41	\$6.23	\$1.02
	2013_09	\$37.55	\$32.30	\$30.70	\$6.85	\$1.60
	2013_10	\$36.25	\$31.78	\$31.84	\$4.41	(\$0.06)
	2013_11	\$37.29	\$31.78	\$32.04	\$5.25	(\$0.26)
	2013_12	\$38.91	\$31.78	\$31.23	\$7.68	\$0.55
2013 Average Price		\$38.42	\$32.84	\$32.76	\$5.66	\$0.08
	2014_01	\$42.57	\$35.28	\$37.35	\$5.22	(\$2.07)
	2014_02	\$42.20	\$35.28	\$35.21	\$6.99	\$0.07
	2014_03	\$37.89	\$35.28	\$34.45	\$3.44	\$0.83
	2014_04	\$35.51	\$35.28	\$32.35	\$3.16	\$2.93
	2014_05	\$36.87	\$35.28	\$30.91	\$5.96	\$4.37
	2014_06	\$39.03	\$35.28	\$32.50	\$6.53	\$2.78
	2014_07	\$42.23	\$35.28	\$38.87	\$3.36	(\$3.59)
	2014_08	\$42.22	\$35.28	\$35.75	\$6.47	(\$0.47)
	2014_09	\$38.26	\$35.28	\$30.69	\$7.57	\$4.59
	2014_10	\$37.24	\$35.28	\$30.13	\$7.11	\$5.15
	2014_11	\$37.97	\$35.28	\$31.33	\$6.64	\$3.95
	2014_12	\$40.57	\$35.28	\$32.82	\$7.75	\$2.46
2014 Average Price		\$39.38	\$35.28	\$33.53	\$5.85	\$1.75
	2015_01	\$43.25	\$37.37	\$40.12	\$3.13	(\$2.75)
	2015_02	\$43.89	\$37.37	\$38.19	\$5.70	(\$0.82)
	2015_03	\$38.35	\$37.37	\$33.81	\$4.54	\$3.56
	2015_04	\$35.75	\$37.37	\$32.23	\$3.52	\$5.14
	2015_05	\$36.58	\$37.37	\$30.83	\$5.75	\$6.54
2015 Average Price		\$39.56	\$37.37	\$35.03	\$4.53	\$2.34
Total Period Average		\$37.88	\$33.57	\$32.64	\$5.24	\$0.93

Fuel Cost Comparison (\$/MWh)

	2011	2012			2013			2014			2015		
Plant	Actual	EVA	Actual	Variance	EVA	Actual	Variance	EVA	Actual	Variance	EVA	Actual	Variance
Cardinal 1	20.18	14.03	19.75	(5.72)	15.01	20.26	(5.25)	15.99	17.90	(1.91)	16.37	21.55	(5.18)
Conesville 3, 5, 6	28.24	26.22	33.72	(7.50)	27.04	27.07	(0.03)	27.95	27.45	0.50	28.22	28.94	(0.72)
Conesville 4	39.58	23.92	50.03	(26.11)	24.57	47.42	(22.85)	25.59	42.74	(17.15)	25.95	31.01	(5.06)
Gavin	20.16	13.14	23.37	(10.23)	13.52	24.75	(11.23)	14.33	24.29	(9.96)	14.68	22.43	(7.75)
Kammer	35.59	26.62	38.41	(11.79)	26.59	39.33	(12.74)	28.38	36.28	(7.90)	29.39	33.76	(4.37)
Muskingum River	26.69	24.41	34.02	(9.61)	29.79	37.97	(8.18)	N/A	33.10	N/A	30.36	31.69	(1.33)
Stuart	29.11	23.70	30.78	(7.08)	23.59	25.51	(1.92)	24.54	25.98	(1.44)	25.38	26.76	(1.38)
Zimmer	26.88	15.95	31.98	(16.03)	16.52	23.13	(6.61)	17.06	26.06	(9.00)	17.26	23.78	(6.52)

Heat Rate Comparison

	Heat Rate (BTU/kWh)					
	EVA Input	Actual				
	All Years	2011	2012	2013	2014	2015
Waterford CC	7,000	7,308	7,196	6,954	7,218	7,064
Darby CT	9,000	12,429	12,105	11,959	11,965	12,172
Lawrenceburg CC	7,000	7,190	7,074	7,245	7,236	7,045

Waterford & Darby- Ohio Power FF1 for 2011-2013, AEPGR FF1 for 2014, GADS for 2015
 Lawrenceburg- AEG FF1 all years

Summary of Capacity Regulatory Deferrals

	Incurring Capacity Costs @ \$288.83/MW-day	CRES Capacity Payments	Deferral Portion of RSR Revenues	Non-Deferral Portion of RSR Revenues	Carrying Costs	Cummulative Deferred Capacity Costs
Aug-12	\$ 19,191,518	\$ (1,333,795)	\$ -	\$ -	\$ -	\$ 17,857,723
Sep-12	\$ 26,061,486	\$ (1,811,252)	\$ (3,619,686)	\$ (9,231,650)	\$ 82,155	\$ 29,338,778
Oct-12	\$ 29,436,242	\$ (2,045,794)	\$ (3,457,783)	\$ (8,228,644)	\$ 134,957	\$ 45,177,756
Nov-12	\$ 31,166,698	\$ (2,166,060)	\$ (2,852,025)	\$ (7,343,490)	\$ 207,816	\$ 64,190,696
Dec-12	\$ 33,532,470	\$ (2,330,479)	\$ (4,218,795)	\$ (10,450,222)	\$ 295,249	\$ 81,018,918
Jan-13	\$ 34,847,302	\$ (2,421,868)	\$ (4,292,225)	\$ (11,084,436)	\$ 372,573	\$ 98,440,264
Feb-13	\$ 32,247,329	\$ (2,241,542)	\$ (3,911,387)	\$ (10,100,854)	\$ 452,583	\$ 114,886,394
Mar-13	\$ 36,574,280	\$ (2,542,304)	\$ (3,857,071)	\$ (9,844,342)	\$ 546,613	\$ 135,763,570
Apr-13	\$ 35,983,894	\$ (2,500,850)	\$ (3,770,419)	\$ (9,399,509)	\$ 597,970	\$ 156,674,656
May-13	\$ 37,805,392	\$ (2,627,443)	\$ (3,160,832)	\$ (7,728,358)	\$ 690,861	\$ 181,654,276
Jun-13	\$ 39,078,988	\$ (4,583,014)	\$ (3,694,944)	\$ (9,041,392)	\$ 799,439	\$ 204,213,353
Jul-13	\$ 40,997,218	\$ (4,807,974)	\$ (4,162,806)	\$ (10,408,356)	\$ 889,163	\$ 226,720,598
Aug-13	\$ 41,548,926	\$ (4,872,678)	\$ (3,662,506)	\$ (9,245,178)	\$ 877,082	\$ 251,366,244
Sep-13	\$ 40,720,256	\$ (4,775,494)	\$ (3,677,643)	\$ (9,248,487)	\$ 963,164	\$ 275,348,039
Oct-13	\$ 42,408,120	\$ (4,973,440)	\$ (3,528,691)	\$ (8,508,174)	\$ 1,041,396	\$ 301,787,250
Nov-13	\$ 41,457,177	\$ (4,861,918)	\$ (3,133,452)	\$ (7,802,883)	\$ 1,143,279	\$ 328,589,454
Dec-13	\$ 43,110,061	\$ (5,055,760)	\$ (3,839,289)	\$ (9,895,056)	\$ 1,260,329	\$ 354,169,740
Jan-14	\$ 43,423,936	\$ (5,092,570)	\$ (4,187,006)	\$ (11,072,915)	\$ 1,683,397	\$ 378,924,581
Feb-14	\$ 39,434,558	\$ (4,624,714)	\$ (4,065,798)	\$ (10,812,252)	\$ 1,843,999	\$ 400,700,374
Mar-14	\$ 43,920,010	\$ (5,150,748)	\$ (3,696,426)	\$ (9,672,549)	\$ 1,819,998	\$ 427,920,659
Apr-14	\$ 42,873,172	\$ (5,027,979)	\$ (3,356,982)	\$ (8,452,350)	\$ 2,030,689	\$ 455,987,208
May-14	\$ 44,483,363	\$ (5,216,816)	\$ (3,316,372)	\$ (8,031,131)	\$ 2,163,500	\$ 486,069,751
Jun-14	\$ 42,799,054	\$ (22,166,758)	\$ (3,481,447)	\$ (10,237,584)	\$ 2,307,157	\$ 495,290,173
Jul-14	\$ 44,461,137	\$ (23,027,594)	\$ (3,778,824)	\$ (11,473,885)	\$ 2,410,570	\$ 503,881,578
Aug-14	\$ 44,624,400	\$ (23,112,152)	\$ (3,620,249)	\$ (10,856,365)	\$ 2,447,928	\$ 513,365,138
Sep-14	\$ 43,210,676	\$ (22,379,947)	\$ (3,745,480)	\$ (11,270,495)	\$ 2,516,438	\$ 521,696,329
Oct-14	\$ 44,739,264	\$ (23,171,644)	\$ (3,362,852)	\$ (9,751,809)	\$ 2,557,217	\$ 532,706,506
Nov-14	\$ 43,378,734	\$ (22,466,989)	\$ (3,002,799)	\$ (9,000,683)	\$ 2,611,934	\$ 544,226,703
Dec-14	\$ 45,913,962	\$ (23,780,051)	\$ (3,945,829)	\$ (12,080,355)	\$ 2,665,710	\$ 553,000,140
Jan-15	\$ 45,797,161	\$ (23,719,556)	\$ (4,204,809)	\$ (13,136,153)	\$ 2,700,677	\$ 560,437,460
Feb-15	\$ 41,475,410	\$ (21,481,207)	\$ (3,929,530)	\$ (12,298,229)	\$ 2,735,157	\$ 566,939,059
Mar-15	\$ 46,320,146	\$ (23,900,424)	\$ (3,874,061)	\$ (12,077,003)	\$ 2,764,265	\$ 576,171,984
Apr-15	\$ 45,295,195	\$ (23,459,575)	\$ (3,310,524)	\$ (9,920,570)	\$ 2,810,581	\$ 587,587,091
May-15	\$ 46,657,070	\$ (24,164,926)	\$ (3,138,754)	\$ (9,234,802)	\$ 2,926,516	\$ 600,632,195
Total	\$ 1,354,974,603	\$ (357,895,315)	\$ (120,857,295)	\$ (326,940,161)	\$ 51,350,362	\$ 600,632,195

Calculation of Retail Stability Rider

<u>Line No.</u>	<u>Description</u>	<u>Residential</u>	<u>GS-1, FL</u>	<u>GS-2/3/4, SBS, EHG, EHS, SS</u>	<u>AL/OL, SL</u>	<u>Total</u>
1	5 CP Demand	3,886	127	5,339	-	9,352
2	Allocation Percentage	41.55%	1.36%	57.09%	0.00%	100.00%
3	Class Allocation of Revenue Requirement	\$ 180,003,043	\$ 5,882,755	\$ 247,307,321	\$ -	\$ 433,193,119
4	All Metered kWh	23,293,335,360	1,185,141,933	50,183,788,149	353,401,225	75,015,666,667
5	Proposed RSR Rate \$/MWh	7.7277	4.9638	4.9280	0.0000	5.7747
6	Proposed Collection	\$ 180,003,908	\$ 5,882,808	\$ 247,305,708	\$ -	\$ 433,192,423
7	Revenue Verification				\$	696
8	Current RSR Rate \$/MWh	5.3154	3.4143	3.3897	0.0000	
9	Addition to RSR Rate \$/MWh	2.4123	1.5495	1.5383	0.0000	

Line 1	Average Demand at time of PJM's five highest peak loads for AEP Ohio
Line 2	Class 5 CP Demand (Line 3) Divided by Total 5 CP Demand
Line 3	Retail Stability Rider Revenue Requirement - Estimated Balance to be recovered over 20 months
Line 4	AEP Ohio Forecast Metered kWh - 20 months
Line 5	Line 3 Divided by Line 4
Line 6	Line 4 Times Line 5
Line 7	Line 3 Total Minus Line 6 Total
Line 8	Input
Line 9	Line 5 Minus Line 8

CERTIFICATE OF SERVICE

In accordance with Rule 4901-1-05, Ohio Administrative Code, the PUCO's e-filing system will electronically serve notice of the filing of this document upon the following parties. In addition, I hereby certify that a service copy of the foregoing *Direct Testimony of William A. Allen* was sent by, or on behalf of, the undersigned counsel to the following parties of record this 4th day of October 2016, via electronic transmission.

/s/ Steven T. Nourse
Steven T. Nourse

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Summary: Testimony - Direct Testimony of William A. Allen electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company