I&E Statement No. 1-SR Witness: Rachel Maurer

#### PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

#### METROPOLITAN EDISON COMPANY Docket No. R-2016-2537349

#### PENNSYLVANIA ELECTRIC COMPANY Docket No. R-2016-2537352

#### PENNSYLVANIA POWER COMPANY Docket No. R-2016-2537355

#### WEST PENN POWER COMPANY Docket No. R-2016-2537359

**Surrebuttal Testimony** 

of

#### **Rachel Maurer**

**Bureau of Investigation & Enforcement** 

**Concerning:** 

**Rate of Return** 

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1	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
2	А.	My name is Rachel Maurer. My business address is Pennsylvania Public Utility
3		Commission, P.O. Box 3265, Harrisburg, PA 17105-3265.
4		
5	Q.	BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?
6	А.	I am employed by the Pennsylvania Public Utility Commission (PUC or
7		Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed
8		Utility Financial Analyst.
9		
10	Q.	ARE YOU THE SAME RACHEL MAURER WHO IS RESPONSIBLE FOR
11		THE DIRECT TESTIMONY CONTAINED IN I&E STATEMENT NO. 1
12		AND THE SCHEDULES IN I&E EXHIBIT NO. 1?
13	A.	Yes.
14		
15	Q.	WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?
16	А.	The purpose of my surrebuttal testimony is to address statements made by
17		Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company
18		(Penelec), Pennsylvania Power Company (Penn Power), and West Penn Power
19		Company (West Penn), collectively referred to in this testimony as "the
20		Companies." I will address Ms. Pauline Ahern (Met-Ed/Penelec/Penn
21		Power/West Penn Statement No. 8-R) in her rebuttal testimony regarding the cost
22		of common equity for the Companies and Mr. Joseph Dipre (Penn Power

2		and overall rate of return for Penn Power.
3		
4	<u>SUN</u>	IMARY OF MR. DIPRE'S TESTIMONY
5	Q.	SUMMARIZE THE UPDATES THAT MR. DIPRE MADE FOR PENN
6		POWER IN HIS REBUTTAL TESTIMONY.
7	A.	Although in his direct testimony, Mr. Dipre included a forecasted bond issuance of
8		\$50 million at an interest rate of 5%, in his rebuttal testimony, he updates his
9		estimate. According to Mr. Dipre, his update reflects the actual costs of the bond
10		issued July 11, 2016 with an effective rate of 4.32% which results in an updated
11		overall cost of debt of 5.66%. As a result of the updated cost of debt, Mr. Dipre
12		has changed his overall rate of return recommendation for Penn Power from
13		8.70% to $8.59%$ . <sup>1</sup>
14		
15	Q.	HAS YOUR RECOMMENDATION FOR PENN POWER CHANGED AS A
16		RESULT OF THIS UPDATE?
17	A.	Yes. To reflect Penn Power's updated cost of debt, I have updated my overall rate
18		of return for Penn Power from 7.18% to 7.07% as follows:
		Type of CapitalRatioCost RateWeighted Cost RateLong term Debt49.93%5.66%2.83%Common Equity50.07%8.46%4.24%
		1 otal 100.00% 7.07%

Statement No. 9-R) in his rebuttal testimony updating the cost of long-term debt

19

1

<sup>&</sup>lt;sup>1</sup> Penn Power Statement No. 9-R, page 2.

#### 1 <u>SUMMARY OF MS. AHERN'S TESTIMONY</u>

2	Q.	SUMMARIZE MS. AHERN'S RESPONSE TO THE
3		RECOMMENDATIONS MADE IN YOUR DIRECT TESTIMONY.
4	А.	Ms. Ahern disagrees with my analysis of her unregulated proxy group and
5		criticizes the size of my regulated electric barometer group. She disputes my
6		reliance upon the DCF method and questions the reasonableness of the DCF
7		results. In my CAPM, analysis Ms. Ahern disputes the use of a 10-year treasury
8		bond as the risk-free rate, the use of a geometric mean, the use of shorter time
9		periods, and the lack of an ECAPM analysis. Finally, Ms. Ahern disagrees with
10		the absence of a risk or size adjustment in my recommendation.
11		
12	ELE	CTRIC COMPANY BAROMETER GROUP
13	Q.	WHAT IS MS. AHERN'S POSITION REGARDING YOUR BAROMETER
14		GROUP?
15	А.	Ms. Ahern claims that my barometer group size of five companies has weakened
16		the reliability of my rate of return analysis. <sup>2</sup>
17		
18	Q.	DO YOU AGREE WITH MS. AHERN'S CRITIQUE OF THE SIZE OF
19		YOUR BAROMETER GROUP?
20	А.	No. The purpose of a barometer group is to act as a benchmark for determining
21		the subject utility's rate of return in a base rate case. To do so, the barometer

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<sup>&</sup>lt;sup>2</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 4-5.

1 group needs to be constructed of companies that are comparable to the electric 2 distribution company subject in this proceeding. Although a larger barometer 3 group decreases the risk that an anomalous company will affect the results of the 4 analysis, if the barometer group companies do not resemble the subject company, 5 the results of the analysis will be unreliable. Barometer group criteria must be 6 chosen to provide a sufficient number of companies and to create a group that 7 resembles the subject companies. My barometer group includes fewer companies 8 than Ms. Ahern's because Ms. Ahern included companies that operate in states 9 that are not fully deregulated and therefore not comparable to a company operating 10 a distribution-only system in Pennsylvania's deregulated market. Ms. Ahern's 11 inclusion of companies operating in vertically integrated states does make her 12 barometer group larger but does not make it more reliable.

13

#### 14 NON-REGULATED BAROMETER GROUP

# Q. WHAT WAS YOUR RECOMMENDATION IN DIRECT TESTIMONY CONCERNING MS. AHERN'S INCLUSION OF A NON-REGULATED PROXY GROUP?

A. I disagreed with Ms. Ahern's use of an unregulated barometer group, which
included companies that are not in the same industry as Met-Ed, Penelec, Penn
Power, and West Penn. I objected to the inclusion of such companies because

4

1		different industries face different risks and can be significantly more profitable,
2		defying principles of the <i>Hope</i> and <i>Bluefield</i> cases. <sup>3</sup>
3		
4	Q.	WHAT IS MS. AHERN'S RESPONSE REGARDING YOUR
5		DISAGREEMENT WITH HER USE OF A NON-REGULATED PROXY
6		GROUP?
7	A.	In rebuttal testimony, Ms. Ahern claims that the companies contained in her non-
8		regulated proxy group are similar in risk to those in her electric utility proxy group
9		based on the beta and standard error of the regression being similar to that of her
10		electric company proxy group and therefore similar to Met-Ed, Penelec, Penn
11		Power, and West Penn. <sup>4</sup>
12		
13	Q.	HAS MS. AHERN PROVEN THAT THE RISKS FACED BY HER NON-
14		REGULATED PROXY GROUP ARE SIMILAR TO THAT OF HER
15		UTILITY GROUP?
16	A.	No. As stated in I&E Statement No. 1, pages 11-13, the risks faced in each
17		industry for the companies used in Ms. Ahern's unregulated group differ from the
18		risk faced by her electric utility group. Although beta is an indicator of a
19		company's investment risk in relation to the entire stock market, beta is not a
20		quantification of the total investment risk of a given company. Ms. Ahern's

<sup>&</sup>lt;sup>3</sup> I&E Statement No. 1, pages 13-15. <sup>4</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, page 55.

1		unregulated barometer group may have a beta similar to that of her electric group,
2		but that does not mean that the companies face the sufficiently similar risks to be
3		used as a substitute for an industry's market. Both beta and the standard error of
4		regression are measures of the past performance of a stock and as such do not
5		necessarily reflect where an industry is going or what risks it is expected to face.
6		
7	DISC	COUNTED CASH FLOW (DCF)
8	Q.	SUMMARIZE YOUR REASONS FOR USING THE DCF AS THE
9		PRIMARY METHOD IN DETERMINING AN APPROPRIATE COST OF
10		EQUITY.
11	A.	I have used the DCF as a primary method for determining an appropriate cost of
12		equity for multiple reasons. First, the DCF is based upon the concept that the
13		receipt of dividends plus expected appreciation is the total return requirement
14		determined by the market. Additionally, the DCF uses the utilities' own stock
15		prices and growth rates which are directly employed in a formalistic calculation.
16		Finally, the DCF recognizes the time value of money and is forward-looking. <sup>5</sup>
17		
18	Q.	WHAT ARGUMENTS DID MS. AHERN PRESENT IN REBUTTAL
19		TESTIMONY REGARDING THE DCF RESULTS AND YOUR USE OF
20		THE DCF AS THE PRIMARY METHOD IN DETERMINING AN
21		APPROPRIATE COST OF EQUITY?

<sup>&</sup>lt;sup>5</sup> I&E Statement No. 1, page 22.

1	А.	Ms. Ahern claims that the current market-to-book ratios of more than one for the
2		electric industry will cause the DCF results in this proceeding to understate the
3		investor-required return. Ms. Ahern argues that the difference between the market
4		value, on which investors evaluate and receive their returns, and the book value,
5		on which regulators authorize returns, will cause the market based results of the
6		DCF, which are applied to the book value capital structure, to understate the cost
7		of equity. <sup>6</sup>
8		
9	Q.	DO YOU AGREE WITH MS. AHERN'S ARGUMENT THAT THE DCF
10		WILL UNDERSTATE THE COST OF EQUITY DUE TO MARKET-TO-
11		BOOK DIFFERENCES?
12	A.	No. Although there are differences between the market value and the book value
13		of a publicly traded electric company, the Companies are not publicly traded.
14		Ms. Ahern claims that UPWA Exhibit No. PMA-1, Schedule 4, page 2
15		demonstrates that the DCF results understate investors' required return on market
16		value but her calculation is based on a market value and a book value existing for
17		a company. Met-Ed, Penelec, Penn Power, and West Penn are private companies
18		that have no assessable market value that can be input into Ms. Ahern's
19		computation. The accuracy of the DCF result is driven by the accuracy of future
20		cash flow estimates and not by any perceived differences in market or book
21		values

<sup>&</sup>lt;sup>6</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 7-10.

1	Although Ms. Ahern repeats that the DCF can	understate or ov	verstate the	
2	required rate of return when the market to book ratio is not equal to one, she			
3	makes no adjustment to her own DCF results. As seen by the following			
4	calculation, if Ms. Ahern adjusted her DCF to account	for differences	between	
5	market and book values of her electric barometer grou	p, her DCF wo	uld be	
6	significantly above her risk and flotation adjusted reco	ommendation of	f 10.90% and,	
7	furthermore, outside of any of her other analyses. <sup>7</sup>			
	Market Value Per Share of Ms. Ahern's Electric Group Ms. Ahern's DCF Cost Rate	(1) (2) _	\$49.11 8.87%	
	Ms. Ahern's DCF Return in Dollars	$(1)^{*}(2)=(3)$	\$4.36	
	Book Value Per Share of Ms. Ahern's Electric Group	(4)	\$28.99	
	Implied Market DCF required to earn 8.87%	(3)/(4)=(5)	15.03%	
	Basis Point Difference	(5)-(2)=(6)	616	
8	If Ms. Ahern took into account her market-to-b	ook analysis ar	d adjusted	
9	her DCF to account for market and book value differe	nces, she would	l need to	
10	make a 616 basis point adjustment to her 8.87% DCF	result. Based o	on her	
11	calculations in Med-Ed/Penelec/Penn Power/West Per	nn Exhibit PMA	<b>A</b> -1,	
12	Schedule 4, she would have an adjusted DCF result of	15.03% which	is	
13	significantly above her risk and flotation adjusted reco	ommendation of	f 10.90% and,	
14	furthermore, outside of any of her other analyses. <sup>8</sup> Ma	s. Ahern's calcu	ulation of the	
15	"understatement" of the DCF does not prove that any	other cost of eq	uity models	
16	should be used, but rather it merely demonstrates that	attempting to n	neasure and	

 <sup>&</sup>lt;sup>7</sup> Med-Ed/Penelec/Penn Power/West Penn Exhibit PMA-1, Schedule 2 and Schedule 4, page 2.
 <sup>8</sup> Med-Ed/Penelec/Penn Power/West Penn Exhibit PMA-1, Schedule 2 and Schedule 4, page 2.

1		take into account any perceived differences between market and book value in a
2		DCF analysis would cause a misstatement of the cost of equity.
3		
4	ALL	EGED EXCLUSIVE USE OF THE DCF
5	Q.	WHAT IS MS. AHERN'S POSITION REGARDING YOUR USE OF THE
6		DCF?
7	A.	Ms. Ahern alleges that my analysis has exclusively employed the DCF method
8		and that because of differences between the book and market value of electric
9		companies, other methods must be relied upon when recommending a cost of
10		common equity. <sup>9</sup>
11		
12	Q.	WERE ANY METHODS OTHER THAN THE DCF FACTORED INTO IN
13		YOUR ANALYSIS?
14	A.	Yes. Although my recommendation was based on the results of my DCF, I also
15		analyzed the CAPM and employed the CAPM as a comparison. The concerns
16		expressed in the articles Ms. Ahern has quoted, which relate to exclusive use of
17		only the DCF while ignoring the CAPM, have been addressed. The result of my
18		DCF is 8.46%, which is above the results of my CAPM range of 8.17% to 8.30%.
19		For the reasons explained in I&E Statement No. 1, and above, I find the DCF
20		method to be the most reliable. I have taken into account the fact that no method
21		can perfectly predict the return on equity, therefore, I also use the CAPM as a

<sup>&</sup>lt;sup>9</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 5-10.

1		comparison to the DCF. Creating a recommendation by averaging multiple
2		methods from multiple barometer groups does not serve to strengthen Ms. Ahern's
3		DCF but rather, in averaging the results of her RP, CAPM, and unregulated group,
4		she makes her recommendation less reliable. I agree with Ms. Ahern that a proper
5		determination of the cost of equity should not consider only one method. Where
6		we disagree is to what extent one should rely on each particular method.
7		
8	<u>CAP</u>	ITAL ASSET PRICING MODEL (CAPM)
9	Q.	WHAT IS MS. AHERN'S POSITION REGARDING YOUR CAPM
10		ANALYSIS?
11	А.	Ms. Ahern claims that my use of a 10-year Treasury bond and use of historical
12		geometric returns for the market as a measure of the expected return results in a
13		flawed CAPM analysis. She claims that the use of a 30-year treasury bond and an
14		arithmetic mean is more appropriate for cost of capital purposes. Ms. Ahern
15		claims that my use of shorter time periods is incorrect and she comments upon my
16		exclusion of the ECAPM method of computing the cost of capital.
17		
18	Q.	WHAT IS MS. AHERN OPINION REGARDING YOUR USE OF THE
19		YIELD ON THE 10-YEAR U.S. TREASURY BOND?
20	A.	Ms. Ahern claims her use of the yield on a 30-year U.S. Treasury Bond is more
21		appropriate than my use of the yield on a 10-year Treasury Bond because the

1 2 horizon of the chosen Treasury security should match the horizon of the investment.<sup>10</sup>

3

### 4 Q. WHAT ARE YOUR REASONS FOR USING A 10-YEAR TREASURY 5 BOND AS OPPOSED TO A 30-YEAR TREASURY BOND?

6 A. As stated in I&E Statement No. 1, page 30, I chose the 10-year Treasury Bond 7 because it balances the short-comings of the short-term T-Bill and the 30-year 8 Treasury Bond. Long-term Treasury Bonds have substantial maturity risk 9 associated with the market risk and the risk of unexpected inflation and as such my 10 choice of a 10-year Treasury Bond is appropriate. A longer term bond has more 11 risk associated with it because an increase in the length of time until maturity also 12 increases the difficulty of predicting what will happen with inflation, interest rates, 13 the market as a whole, changes in the tax code, and other unpredictable events that 14 could affect the value of a bond. In addition, Ms. Ahern's quote from the Ibbotson 15 SBBI 2015 Classic yearbook discusses their reasons for approximating a 20-year 16 bond rather than using either a 30 or 10-year bond. The section Ms. Ahern quotes 17 does not corroborate her claims as it supports the use of a 20-year bond over both 18 the 30 and 10-year maturities.

19

## 20 Q. WHAT IS MS. AHERN'S POSITION REGARDING YOUR USE OF A 21 GEOMETRIC MEAN?

<sup>&</sup>lt;sup>10</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 10-12.

A. Ms. Ahern advocates for the use of an arithmetic mean in calculating a risk
 premium, as in her opinion it provides "meaningful insight into the variance and
 standard deviation of those returns/premiums."<sup>11</sup>

4

#### 5 Q. IS THE USE OF A GEOMETRIC MEAN TO CALCULATE THE

#### 6

#### HISTORICAL CAPM INAPPROPRIATE AS MS. AHERN ASSERTS?

7 A. No. The geometric mean normalizes the returns or yields and so it measures the 8 change over more than one period. The arithmetic average is more susceptible to 9 being influenced by outliers and therefore is not as good of a representation of the 10 central tendency of a set of numbers. I have chosen to use the geometric mean to 11 calculate a historical return because I am calculating a historical CAPM. The 12 arithmetic mean is influenced by any outliers in the data set and therefore would 13 be a better representation of the volatility of returns than it is of historical 14 performance. For the historical performance of the market to be a valid 15 representation of the future, a geometric mean should be calculated in order to 16 minimize the effect of any particular years that deviated from normal years. 17 One of the difficulties of calculating the CAPM is that the risk premium is 18 measured by the difference between the return on the market and the risk-free rate. 19 Since the return on the market and the risk-free rate do not always change in the 20 same direction or by the same amount, the risk premium itself is not constant over 21 time. When measuring a historical risk premium, these volatilities and therefore

<sup>11</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, page 16, lines 11-13.

1		the potential inaccuracies of the CAPM are enhanced by the use of the arithmetic
2		mean. The geometric mean more accurately represents the typical value and
3		therefore is a better representation of the historical market risk premium, because
4		it is not as influenced by fluctuation in the market as the arithmetic average.
5		
6	Q.	WHAT IS MS. AHERN'S POSITION REGARDING YOUR USE OF
7		MULTIPLE HISTORICAL TIME PERIODS IN YOUR CAPM ANALYSIS?
8	А.	Ms. Ahern claims that my use of multiple time periods implicitly gives weight to
9		more current historical market returns and market conditions and she argues that
10		risk premiums derived from longer periods are more stable than those derived over
11		shorter periods. <sup>12</sup>
12		
13	Q.	WHY HAVE YOU CHOSEN TO USE MULTIPLE HISTORICAL TIME
14		PERIODS IN YOUR HISTORICAL CAPM ANALYSIS?
15	A.	Although Ms. Ahern is correct that averaging multiple time periods results in an
16		average that is weighted towards more recent periods, I chose the time periods I
17		analyzed for specific reasons. As stated in I&E Statement 1, I have selected
18		multiple time periods to represent a variety of investor experiences and time
19		horizons. The 61-year time period represents the longest time period available
20		from the U.S. Treasury for the 10-year Treasury Bond yield. The 40 and 20-year

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<sup>&</sup>lt;sup>12</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 17-18.

1		time periods coincide with the average useful lives of a utility's assets. The 10-
2		year time period corresponds with the 10-year Treasury Bond I have employed.
3		
4	Q.	HAS MS. AHERN REBUTTAL CRITICIZED YOUR EXCLUSION OF AN
5		ECAPM ANALYSIS?
6	A.	Yes. Ms. Ahern states that numerous tests have confirmed that the Security
7		Market Line is not as steep as the CAPM predicts. In addition, she claims that the
8		Fama and French article referenced on page 25 of I&E Statement No. 1 supports
9		her claim that the traditional CAPM and the ECAPM should be used. <sup>13</sup>
10		
11	Q.	WHY HAS THE ECAPM NOT BEEN EMPLOYED IN YOUR ANALYSIS?
12	A.	I have not employed the ECAPM because it has the same problems as the CAPM,
13		as I previously discussed in I&E Statement No. 1, pages 23 to 25. Although the
14		ECAPM flattens the Security Market Line, it does not change the fact that the
15		CAPM measures the cost of equity indirectly by observing the cost of debt and
16		then adjusting the cost through the use of beta. The ECAPM only seeks to correct
17		the relationship between risk and return but does not remove the disadvantages
18		discusses in my direct testimony.
19		The Fama and French article referenced in I&E Statement No. 1, which
20		Ms. Ahern included in her rebuttal on pages 18 and 19, does not support the use of
21		the ECAPM as she asserts. Ms. Ahern has taken the article out of its context of

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<sup>&</sup>lt;sup>13</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 18-19.

1		invalidating the CAPM method. The Fama and French article does not conclude				
2	that the problems with the CAPM are resolved by the ECAPM but rather states					
3		that,				
4 5 6 7	The synthesis of the evidence on the empirical problems of the CAPM provided by Fama and French (1992) serves as a catalyst, marking the point when it is generally acknowledged that the CAPM has potentially fatal problems. <sup>14</sup>					
8						
9	FLOTATION COST ADJUSTMENT					
10	Q.	HOW DID MS. AHERN'S RESPOND TO YOUR DISMISSAL OF HER				
11		FLOTATION COST ADJUSTMENT?				
12	A.	Ms. Ahern claims that time that has elapsed since 2003 when FirstEnergy issued				
13		its last stock and that the lack of plans for FirstEnergy to issue new stock is not a				
14		reason to adjust her equity cost rate for floatation costs since Mr. Parcell, Ms.				
15		LaConte, or I have not demonstrated that FirstEnergy's historical flotation costs				
16		have been recovered. <sup>15</sup>				
17						
18	Q.	DO YOU AGREE WITH MS. AHERN THAT A FLOTATION COST				
19		ADJUSTMENT IS NEEDED?				
20	A.	No. If FirstEnergy or the Companies were issuing stock on a regular basis or				
21		expected to issue stock in the near future, a flotation cost adjustment could be				
22		considered. Ms. Ahern's adjustment is based on the last time FirstEnergy issued				

 <sup>&</sup>lt;sup>14</sup> Fama, Eugene F. and French, Kenneth R., "The Capital Asset Pricing Model: Theory and Evidence." Journal of Economic Perspectives (2004): Volume 18, Number 3, page 36.
 <sup>15</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 33-35.

1		stock, which was in 2003. In addition, the Companies have stated that they have
2		no expectation of common stock being issued in the near future. <sup>16</sup> The Companies
3		should not now begin to recover a cost incurred by their parent in 2003 when the
4		cost has not been repeated nor do they expect it to occur in the near future.
5		
6	RISK	<u>X ADJUSTMENT</u>
7	Q.	HOW DOES MS. AHERN ATTEMPT TO SUPPORT HER RISK
8		ADJUSTMENT?
9	A.	Ms. Ahern claims that the risk adjustment she made for the size of the Company is
10		valid and that Dr. Annie Wong's study <sup>17</sup> is invalid, and she relies on two articles
11		for support: Thomas Zepp's "Utility Stocks and the Size Effect Revisited," and
12		Michael A. Paschall, ASA, CFA and George B. Hawkins ASA, CFA's "Do
13		Smaller Companies Warrant a Higher Discount Rate for Risk?" <sup>18</sup> In addition, she
14		references a Size Study included in the Duff & Phelps' "2016 Valuation
15		Handbook Guide to Cost of Capital Market Results through 2015" to support her
16		claim of a size effect. <sup>19</sup>
17		

#### 18 WHAT COMMENTS DO YOU HAVE REGARDING THE REFERENCED Q. 19 **ARTICLES?**

<sup>&</sup>lt;sup>16</sup> I&E Exhibit No. 1, Schedule 10.
<sup>17</sup> Wong, Annie, "Utility Stocks and the Size Effect: An Empirical Analysis," *Journal of Midwest Finance Association*, (1993), pages 95-101.
<sup>18</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 57-58.
<sup>19</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 38-40.

1	A.	The article Ms. Ahern references from Dr. Zepp does not re-create Dr. Wong's
2		study, as it simply speculates on other possible reasons for her results and
3		references the results of two other studies. The first study, completed by CPUC
4		Staff in 1991, is not included in the article, and therefore Dr. Zepp's opinions
5		cannot be properly evaluated. Dr. Zepp also draws his conclusions about an entire
6		industry based on the second study, which examines the effects of size on only
7		four water utility companies. This article does not contain enough credible
8		evidence to refute Dr. Wong's findings.
9		Ms. Ahern's second article, "Do Smaller Companies Warrant a Higher
10		Discount Rate for Risk?" is not specific to utility companies and in no way refutes
11		Dr. Wong's utility specific article. The objective of the study done by Dr. Wong
12		is to find whether the size effect exists in the public utility industry. The second
13		article presented by Ms. Ahern argues only for a small stock premium and makes
14		no attempt to differentiate between the public utility industry and the universe of
15		publicly traded companies.
16		The Size Premia Study published in the Duff & Phelps' Handbook relies
17		upon the entire universe of NYSE/NYSE MKT/NASDAQ-listed securities and is
18		not specific to the utility industry.
19		
20	Q.	DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION AS A
21		RESULT OF MS. AHERN'S REBUTTAL TESTIMONY AS IT RELATES
22		TO A RISK ADJUSTMENT?

- A. No. I continue to support Dr. Wong's study showing that size is not a factor in the
   utility industry and that no risk adjustment is warranted.
- 3

#### 4 **<u>RELIABILITY OF TRADITIONAL METHODS</u>**

# Q. WHAT IS MS. AHERN'S REBUTTAL TESTIMONY REGARDING THE PERFECTLY COMPETITIVE CAPITAL MARKET HYPOTHESIS AND THE RELIABILITY OF THE TRADITIONAL METHODS FOR ESTIMATING THE COST OF CAPITAL? A. Ms. Ahern continues to claim that the Federal Reserve Bank's actions in the

market cause it to be a market-mover and therefore she claims that multiple
 models must be viewed with greater scrutiny.<sup>20</sup>

12

#### 13 Q. DO YOU AGREE WITH MS. AHERN'S CONCLUSION THAT THE

#### 14 MODELS SHOULD BE VIEWED WITH SCRUTINY?

A. Yes. Since the markets are continuously changing in response to many different factors, the methods used to estimate the return on equity need to be continuously considered to insure that the assumptions they are built upon remain applicable to current conditions. What I do not agree with is Ms. Ahern's conclusion that the Federal Reserve's actions in the market have invalidated the Perfectly Competitive Capital Market Hypothesis and therefore multiple models must be used. While the DCF and other models used to estimate the cost of equity are built upon

<sup>&</sup>lt;sup>20</sup> Met-Ed/Penelec/Penn Power/West Penn Statement No. 8-R, pages 48-50.

1	assumptions and theories that hold true most of the time, there has never been a
2	perfectly reliable way to estimate what the future cost of equity will be. In
3	addition, Ms. Ahern seems to assume that it is the Federal Reserve's actions alone
4	causing long-term interest rates to remain low, but as discussed in the Duff &
5	Phelps 2016 Valuation Handbook – Guide to Cost of Capital,
6 7 8 9 10 11 12 13 14	It is almost undisputed that aggressive monetary policies implemented as a response to the Financial Crisis drove long- term interest rates in the U.S. and several advanced economies to historically low levels. But many economists claim that the current low rate environment is not just a cyclical story and that we can expect to see a lower level of interest rates in the long term (although not as low as today's). A number of explanatory factors and theories have emerged, some more pessimistic than others. <sup>21</sup>
15	And again when discussing "Long-Term Interest Rates: A Survey"
16	by the Council of Economic Advisors: <sup>22</sup>
17 18 19 20 21 22	The report concludes that it remains an open question whether the underlying factors linked to the currently low interest rates are transitory, or do they imply that the long-run equilibrium for long-term interest rates is lower than before the Financial Crisis. <sup>23</sup>
23	<b>OVERALL RATE OF RETURN</b>
24	Q. MS. AHERN RECOMMENDED CHANGES TO YOUR RETURN ON
25	EQUITY RECOMMENDATION. DO YOU AGREE WITH THOSE

26 **CHANGES?** 

 <sup>&</sup>lt;sup>21</sup> Duff & Phelps, 2016 Valuation Handbook Guide to Cost of Capital. (2016) Wiley, page 3-9.
 <sup>22</sup> Long-Term Interest Rates: A Survey, Council of Economic Advisers, July 2015, https://www.whitehouse.gov/sites/default/files/docs/interest\_rate\_report\_final.pdf
 <sup>23</sup> Duff & Phelps, 2016 Valuation Handbook Guide to Cost of Capital. (2016) Wiley, page 3-10.

1	A.	No. As discussed in direct testimony, my return on equity recommendation is
2		8.46% and that recommendation has not changed. Ms. Ahern's changes to my
3		recommendation, which include the results of a CAPM and ECAPM analysis, are
4		unwarranted and unsupported.
5		
6	Q.	HAS YOUR OVERALL RATE OF RETURN RECOMMENDATION
7		CHANGED FROM YOUR DIRECT TESTIMONY?
8	A.	Yes. In recognition of the updates to Penn Power's cost of debt from 5.88% to
9		5.66%, made in Penn Power Statement No. 9-R, I have changed my overall
10		recommendation for Penn Power from 7.18% to 7.07%. My recommendations for
11		Met-Ed, Penelec, and West Penn remain the same.

#### 1 Q. SUMMARIZE YOUR OVERALL RATE OF RETURN

#### 2 **RECOMMENDATION.**

#### 3 A. I recommend the following for the Companies:

Type of Capital	Ratio	Cost Rate	Weighted Cost				
Metropolitan Edison Company							
Long-term Debt	48.83%	5.25%	2.56%				
Common Equity	51.17%	8.46%	4.33%				
Total	100.00%		6.89%				
Pennsylvania Electric Company							
Long-term Debt	47.44%	5.56%	2.64%				
Common Equity	52.56%	8.46%	4.45%				
Total	100.00%		7.09%				
Pennsylvania Power Company							
Long-term Debt	49.93%	5.66%	2.83%				
Common Equity	50.07%	8.46%	4.24%				
Total	100.00%		7.07%				
West Penn Power							
Long-term Debt	49.68%	4.87%	2.42%				
<b>Common Equity</b>	50.32%	8.46%	4.26%				
Total	100.00%		6.68%				

#### 4

#### 5 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

#### 6 A. Yes, it does.