

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Petition of Metropolitan Edison :
Company, Pennsylvania Electric Company :
and Pennsylvania Power Company for : Docket No. M-2009-2123950
Approval of Smart Meter Technology :
Procurement and Installation Plan :

SURREBUTTAL TESTIMONY

of

J. RICHARD HORNBY

On behalf of:

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 16, 2009

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, EMPLOYER, AND PRESENT POSITION.**

3 A. My name is James Richard Hornby. I am a Senior Consultant at Synapse Energy
4 Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

5 **Q. ARE YOU THE SAME J. RICHARD HORNBY WHO SUBMITTED PRE-FILED**
6 **DIRECT TESTIMONY IN THIS PROCEEDING?**

7 A. Yes.

8 **Q. WHAT IS THE PURPOSE OF YOUR SUR-REBUTTAL TESTIMONY?**

9 A. Metropolitan Edison Company, Pennsylvania Electric Company, and Pennsylvania
10 Power Company (collectively First Energy Companies) have proposed a budget of \$29.5
11 million to cover the costs of their proposed activities during their two year Assessment
12 Period and a new “Smart Meter Technologies (SMT-C) Rider to recover those costs from
13 ratepayers. My surrebuttal testimony responds to certain of the statements made by
14 rebuttal witnesses Parrish, Knecht and Baudino regarding the allocation of Assessment
15 Period costs among rate classes. It also responds to the rebuttal testimony of Mr. Parrish
16 regarding the design of the SMT-C rider, including a provision for crediting savings.
17 Finally I respond to the rebuttal testimony of Ms. Morrissey regarding the ratemaking
18 treatment of Assessment Period costs. (The fact that I do not respond to every statement
19 in the rebuttal testimonies of these witnesses should not be interpreted to mean I agree
20 with those statements.)

21

1 **Cost Allocation**

2 **Q. PLEASE SUMMARIZE THE MAJOR CONCLUSION AND**
3 **RECOMMENDATION IN YOUR DIRECT TESTIMONY REGARDING THE**
4 **ALLOCATION OF ASSESSMENT PERIOD COSTS AMONG RATE CLASSES.**

5 A. During the Assessment Period, the Companies are projecting to incur planning and
6 design costs which are common or fundamental to the larger, ultimate costs of system-
7 wide deployment of smart meters. The Companies are proposing to allocate these
8 common Assessment Period costs among rate classes according to the number of
9 customers in each rate class. My Direct Testimony concludes that this allocation is not
10 reasonable because the primary factor causing the Companies to incur these costs is not
11 the number of customers but instead is Act 129, whose goal is to reduce peak load and
12 annual electricity use. Based upon that conclusion, I recommend that the Commission
13 require the Companies to allocate their Assessment Period costs among rate classes
14 according to a composite demand and energy allocation factor that reflects Act 129 and
15 its goals as the source of cost causation

16 **Q. PLEASE SUMMARIZE THE REBUTTAL TESTIMONY OF WITNESSES**
17 **PARRISH, KNECHT AND BAUDINO REGARDING THE NATURE OF THE**
18 **ASSESSMENT PERIOD COSTS**

19 A. Neither Mr. Knecht nor Mr. Baudino dispute my categorization of the Assessment Period
20 costs as common. Mr. Parrish says these costs are “akin to meter costs” but he does not
21 explicitly deny that these are common costs (Parrish rebuttal, p.2). Moreover, the
22 Companies’ response to OSBA I-1 (c) clearly indicates that the Assessment Period costs
23 are common costs that will benefit customers in all rate classes. (Exhibit__(JRH-2)

1 provides that data response as well as the Companies' response to several other data
2 requests to which I refer in this surrebuttal).

3 Establishing the nature of these costs is a key first step in the selection of an
4 allocation factor in this proceeding based on the guidance provided by the Commission in
5 its Implementation Order. That guidance states "Any costs that can be clearly shown to
6 benefit solely one specific class should be assigned wholly to that class. Those costs that
7 provide benefit across multiple classes should be allocated among the appropriate classes
8 using reasonable cost of service practices".

9 Neither Mr. Parrish, nor Mr. Knecht nor Mr. Baudino maintains that a portion, or
10 all, of the Assessment Period costs should be assigned to a particular rate class. As a
11 result, what is at issue is the choice of a factor for allocating these joint and common
12 costs among rate classes "... using reasonable cost of service practices."

13 My Direct Testimony interprets the Commission's reference to reasonable cost of
14 service practices to mean allocation of costs among rate classes according to cost
15 causation. Mr. Parrish, Mr. Knecht and Mr. Baudino each have a similar interpretation.
16 However, the choice of an allocation factor to reflect cost causation for joint and common
17 costs is a matter of judgment on which analysts may, and often do, disagree. This is the
18 situation in this proceeding. The opposition expressed by the three rebuttal witnesses to
19 my proposed allocation of these joint and common costs is based upon a fundamental
20 difference between their perspective regarding the factors causing these costs and my
21 perspective on cost causation.

22

1 **Q. ARE THERE EXAMPLES OF PARTIES IN OTHER JURISDICTIONS USING**
2 **DIFFERENT ALLOCATION FACTORS FOR SMART METER COSTS?**

3 A. Yes. In California, Pacific Gas and Electric effectively allocates all smart meter costs
4 among electric rate classes using an energy allocation factor, since it recovers these costs
5 via a Smart Meter Project Balancing Account via an energy rate applied uniformly to
6 every kWh that it distributes¹. In Maryland, Baltimore Gas and Electric is proposing to
7 allocate all smart meter costs among electric rate classes using a demand allocation
8 factor, i.e. a three year average of weather normalized peak load contribution by class
9 measured as an average of five coincident peaks.²

10 **Q. PLEASE RESPOND TO THE REBUTTAL TESTIMONY OF WITNESS**
11 **PARRISH REGARDING THE ALLOCATION OF ASSESSMENT PERIOD**
12 **COSTS AMONG RATE CLASSES.**

13 A. In his rebuttal testimony Mr. Parrish states that the Companies have never allocated costs
14 based on perceived or anticipated benefits (Parrish rebuttal, p.2). While his statement
15 may be true, Mr. Parrish fails to acknowledge that we are not dealing with a traditional
16 rate filing. Instead, the Companies are incurring these costs solely to comply with the
17 smart meter plan requirements of Act 129 and the primary goals of that Act are to reduce
18 annual energy use, peak load and the costs and environmental impacts associated with
19 those two factors.

20 Act 129 is clearly “causing” the Companies to incur incremental costs to deploy
21 smart meter technology. The Companies note that they are submitting a smart meter plan
22 to comply with the Act in their petition on page 3, in their Plan on pages 1 and 3, in the

¹ Pacific Gas and Electric Tariff, Cal. P.U.C. Sheet No. 28089 - E.

² Maryland Docket 9208, Direct Testimony of David Vahos, July 13, 2009, page 26.

1 Direct Testimony of Mr. Paganie on page 7 at lines 7 and 8 and in the Direct Testimony
2 of Mr. Mills on page 12 at lines 16 to 18.

3 Act 129 is also explicitly trying to achieve important public policy goals of
4 reducing annual energy use, reducing the air emissions associated with that annual energy
5 use, and reducing peak load. The General Assembly obviously expects that achieving
6 these public policy goals will provide benefits to all customers in all rate classes. The
7 joint and common costs associated with smart meter technology and energy efficiency are
8 ultimately being caused by current levels of energy and demand, and the goal of Act 129
9 to reduce those current levels. For example, Mr. Paganie lists "...achieving Energy
10 Efficiency and Demand Response" as the first benefits of the Companies' Plan (Paganie
11 Direct, page 7 at line 23). Given the policy goals of Act 129, my recommendation for
12 allocating Assessment Period costs based upon a composite energy and demand
13 allocation factor is consistent with reasonable cost of service practices.

14 The position of Mr. Parrish and other rebuttal witnesses that smart meter
15 technology costs incurred to comply with the Act are caused by the number of customers
16 in each rate class is equivalent to a position that energy efficiency program costs incurred
17 to comply with the Act are caused by the number of customers who participate in those
18 programs. Neither of those positions is reasonable.

19 **Q. PLEASE RESPOND TO THE STATEMENT BY MR. PARRISH THAT YOU DID**
20 **NOT PROVIDE SPECIFIC ALLOCATION FACTORS.**

21 A. The Companies could develop energy and demand allocation factors using their most
22 recent 12 months of data on annual energy and peak demand by rate class. A reasonable
23 allocation factor for Assessment Period costs would be a 50 / 50 weighting of energy and

1 demand allocation factors. I present composite factors for allocating the Assessment
2 Period costs among the three Companies, and then for allocating each Company's portion
3 among its three major rate classes, on page 1 of Exhibit___(JRH-3). These allocation
4 factors are derived from the Companies' monthly energy and demand data for 2008, as
5 shown on Exhibit___(JRH-3).

6 **Q. PLEASE RESPOND TO THE REBUTTAL TESTIMONY OF WITNESS**
7 **KNECHT REGARDING YOUR PROPOSED ALLOCATION OF ASSESSMENT**
8 **PERIOD COSTS AMONG RATE CLASSES.**

9 A. Mr. Knecht disagrees with my proposal to allocate these common costs using a composite
10 energy and demand allocator because he interprets that approach to be based upon a
11 "benefits standard" rather than a cost causation standard (Knecht rebuttal, p.4).

12 Mr. Knecht has misinterpreted my position. In fact, I am proposing allocation on
13 the basis of cost causation. However, Mr. Knecht and I have a different perspective on
14 the factors causing these costs. As discussed earlier, I consider the current levels of
15 energy and demand at each of the Companies to be the factors causing or underlying the
16 Act's requirement that the Companies incur smart meter plan costs. Mr. Knecht
17 considers the current number of customers at each of the Companies as the cause of these
18 costs.

19 In his rebuttal Mr. Knecht asserts that the future level of direct benefits will vary
20 by customer (Knecht rebuttal, p.5). I agree. The future level of benefits each customer
21 will receive will vary by rate class, and will also vary by customer within each rate class.
22 However, that point is not relevant to my proposal, which is to allocate the assessment
23 Period costs according to current levels of energy and demand by rate class.

1 **Q. PLEASE RESPOND TO THE REBUTTAL TESTIMONY OF WITNESS**
 2 **KNECHT REGARDING OTHER POSSIBLE APPROACHES TO ALLOCATING**
 3 **ASSESSMENT PERIOD COSTS AMONG RATE CLASSES.**

4 A. Mr. Knecht discusses two possible approaches for allocating these common costs (Knecht
 5 rebuttal, p.6).

6 The first possible approach is a customer allocator, which he states could either be
 7 “...weighted or unweighted”. An unweighted customer allocator is one simply based on
 8 the number of customers in each rate class. A weighted customer allocator is one based
 9 on the number of customers in each rate class and the variation by rate class in the unit
 10 cost of the category of costs being allocated.

11 The table below illustrates the potential for dramatic differences between an
 12 unweighted customer allocator and a weighted customer allocator. This illustration
 13 assumes a utility with 1,000 residential customers, 100 commercial customers and 20
 14 industrial customers. It also assume meters for commercial customers cost 10 times the
 15 cost of a meter for residential customers, and meters for industrial customers cost 30
 16 times the cost of a residential meter. (The Companies did not provide a projection of the
 17 variation in the unit cost of smart meters by rate class in response to OSBA I-2).

Rate Class	Number of customers	Unweighted Allocation Factor (%)	Relative unit cost of a meter (weighting factor)	Number of customers	Weighted Allocation Factor (%)
Residential	1,000	89%	1	1,000	38 %
Commercial	100	9 %	10	1000	38%
Industrial	20	2 %	30	600	23 %
Total	1,120	100 %		2,600	100%

1 For this illustrative utility, an unweighted customer allocator would allocate 89% of
2 meter costs to residential customers whereas a weighted customer allocator would
3 allocate less than half that amount, i.e., 38 %.

4 Mr. Knecht states that the Companies' proposal to use an unweighted allocator is
5 "...within the range of normal cost allocation practice for these costs". Mr. Knecht's
6 support for the Company's proposal is inconsistent with his criticism, in the West Penn
7 Power smart meter proceeding, of that Company's failure to reflect the difference in
8 smart meter costs by customer class in its proposed allocation of those costs (Docket No.
9 M-2009-21239512, Knecht Direct, page 5).

10 The second possible approach he discusses is an allocator proportional to the
11 allocation of the direct costs of the Companies' SMIP (Knecht Direct, page 6). Mr.
12 Knecht states that PPL Electric Utilities ('PPL') has proposed this approach in its smart
13 meter proceeding. What Mr. Knecht fails to state is that PPL has proposed this approach
14 to allocate the common costs of its proposed pilot programs, not to allocate its smart
15 meter technology costs.

16 PPL has already deployed smart meters on its system and is currently proposing
17 to conduct certain pilot programs to evaluate possible enhancements of its existing
18 system. PPL is proposing to assign the costs of each pilot program to the customer class
19 participating in that pilot program and to allocate the program management costs
20 associated with its pilot programs among rate classes in proportion of the direct pilot
21 program costs assigned to each class.

1 **Q. PLEASE RESPOND TO THE REBUTTAL TESTIMONY OF WITNESS**
2 **BAUDINO REGARDING THE ALLOCATION OF ASSESSMENT PERIOD**
3 **COSTS AMONG RATE CLASSES.**

4 A. Mr. Baudino, like Mr. Parrish, fails to acknowledge that we are not dealing with a
5 traditional rate filing, but instead that the Companies are incurring these costs solely to
6 comply with the smart meter plan requirements of Act 129. Mr. Baudino also
7 misunderstands my proposal. I am not proposing that these common costs be allocated
8 on hypothetical future class benefits. Instead I am proposing that they be allocated based
9 upon the Companies' current levels of energy and demand which I consider to be the
10 factors causing or underlying the Act's requirement that the Companies incur these costs.
11 Again, Mr. Baudino and I simply have a different perspective on the factors causing these
12 costs.

13
14 **Rate Design**

15 **Q. PLEASE SUMMARIZE THE MAJOR CONCLUSION AND**
16 **RECOMMENDATION IN YOUR DIRECT TESTIMONY REGARDING THE**
17 **DESIGN OF THE SMT-C RATE.**

18 A. My Direct Testimony concludes that the Companies' proposal to recover Assessment
19 Period costs from residential customers through a SMT-C applied as a customer charge is
20 not reasonable. My position is based upon the fact that the Companies' did not provide
21 support demonstrating that it would be reasonable to recover these common costs from
22 residential customers via a customer charge. Therefore I recommend that the Assessment
23 Period costs be recovered from residential customers as a delivery charge. To be clear,

1 my recommendation regarding the design of the SMT-C rate to recover Assessment
2 Period costs was for the residential rate class SMT-C rider, since rate design varies by
3 rate class.

4 **Q. PLEASE RESPOND TO THE REBUTTAL TESTIMONY OF WITNESSES**
5 **PARRISH, KNECHT AND BAUDINO REGARDING THE DESIGN OF THE**
6 **SMT-C RATE.**

7 A. In his rebuttal Mr. Parrish first states that the Companies will incur the Assessment
8 Period costs regardless of the energy (kWh) or demand (kW) of each rate class. While
9 that statement is true it has no relevance to the design of the rates to recover those costs.
10 Next he states that the Companies have historically recovered meter costs via a customer
11 charge. That statement may be overly broad as he provides no evidence to demonstrate
12 whether the residential customer charge approved in its last general rate case was set to
13 recover one hundred percent of the residential revenue requirements associated with
14 residential meters and service lines. Nevertheless, that second statement is also not
15 relevant since the Assessment Period costs are not meter costs that can be assigned to
16 specific rate classes but instead are costs the Companies will incur to plan and design the
17 deployment of smart meter technology, and as such are common costs.

18 In his rebuttal Mr. Knecht does not oppose my recommendation that the
19 Commission reject the Companies proposal to recover Assessment Period costs via an
20 SMT-C rider applied as a customer charge. Instead, he recommends that, if my proposed
21 cost allocation approach is approved, the Commission require the Companies to recover
22 the costs allocated to each rate class via separate energy and demand charges

1 corresponding to those allocated costs. I do not disagree with his proposed refinement
2 for non-residential rate classes.

3 In his rebuttal Mr. Baudino does not oppose my recommendation that the
4 Commission reject the Companies proposal to recover Assessment Period costs allocated
5 to the residential rate class via a customer charge.
6

7 **Tariff Design**

8 **Q. PLEASE SUMMARIZE THE MAJOR CONCLUSION AND**
9 **RECOMMENDATION IN YOUR DIRECT TESTIMONY REGARDING**
10 **TREATMENT OF OPERATIONAL SAVINGS IN THE CALCULATION OF THE**
11 **SMT-C RATE.**

12 A. The Companies' proposed tariff for the SMT-C makes no reference to crediting
13 customers with savings in distribution service operating costs that result from its smart
14 meter plan. My Direct Testimony concludes that the text of the SMT-C rider should
15 include a provision for crediting such savings to ratepayers when the rate is calculated
16 and recommends that the Commission require the Companies to modify its tariff to
17 include such text.

18 **Q. PLEASE RESPOND TO THE REBUTTAL BY COMPANIES' WITNESS**
19 **PARRISH REGARDING TREATMENT OF OPERATIONAL SAVINGS IN THE**
20 **CALCULATION OF THE SMT-C RATE.**

21 A. As I anticipated in my Direct Testimony, Mr. Parrish begins by stating there will not be
22 any such savings during the Assessment Period. He then indicates that the best
23 mechanism through which to reflect any operational savings would be new base rates

1 established in future distribution rate proceedings. The approach that Mr. Parish is
2 proposing is not consistent with either the Act or the Commission's Implementation
3 Order.

4 The Act, in Section 2807 (f) (7), specifies the Company may recover reasonable
5 and prudent smart meter technology costs net of operating and capital cost savings it
6 realizes from that technology. That Section also gives electric distribution companies
7 (EDCs) the option of recovering their net costs either through deferral and recovery in
8 future base rates or a reconcilable automatic adjustment clause. The Companies have
9 chosen the automatic adjustment clause option, i.e., the SMT-C rider. In its
10 Implementation Order, the Commission states that EDCs such as the Companies who
11 have chosen the adjustment clause option shall include a tariff for that rate mechanism
12 that reflects "...operating and cost savings realized by the EDC from the installation and
13 use of smart meter technology".

14 The Companies have chosen the automatic clause recovery option rather than the
15 base rate recovery option. (Moreover, they have given no commitment to file a base rate
16 case, per response to OCA I-34.) Having elected the automatic clause recovery option,
17 the Act and the Commission's Implementation Order require that the Companies file a
18 tariff that includes a description of the credit they will provide for operating and capital
19 cost savings. If the Companies do not expect any such savings during the Assessment
20 Period, they can propose a value of zero for that credit during the Assessment Period.

21

1 **Accounting Treatment**

2 **Q. PLEASE RESPOND TO THE REBUTTAL TESTIMONY OF MS. MORRISSEY**
3 **REGARDING THE TREATMENT OF ASSESSMENT PERIOD COSTS FOR**
4 **RATEMAKING PURPOSES.**

5 A. In her Direct Testimony Ms. Morrissey recommends that the Companies' SMT Plan
6 administrative start-up costs and Assessment Period costs be capitalized and depreciated
7 over the useful life of that Plan. In her Rebuttal Testimony she states that my Direct
8 Testimony is not clear as to what portion of the Assessment Period costs should be
9 capitalized. In order to be clear, my Direct Testimony did not address the treatment of
10 Assessment Period costs as either expenses or capital expenditures. That is an accounting
11 issue that is not within my area of expertise.

12 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

13 A. Yes.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Petition of Metropolitan Edison :
Company, Pennsylvania Electric Company :
and Pennsylvania Power Company for : Docket No. M-2009-2123950
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EXHIBITS TO THE
SURREBUTTAL TESTIMONY

of

J. RICHARD HORNBY

On behalf of:

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 16, 2009

Met- Ed / Penelec/ Penn Power Smart Meter Plan
Response to OSBA Interrogatory Set I, No. 1
Witness: R. I. Parrish
Page 1 of 1

**METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC
COMPANY, AND PENNSYLVANIA POWER COMPANY
DOCKET NO. M-2009-2123950**

OFFICE OF SMALL BUSINESS ADVOCATE Set I, No. 1:

“Reference Met-Ed/Penelec/Penn Power Statement No. 3, page 7, lines 14-21:

- a. Does the referenced testimony imply that the costs for all smart meters and supporting systems will be allocated to the three rate class groups based on number of customers?
- b. If your answer to part (a) is in any way affirmative, please explain why the costs of meters are not directly assigned to the class for which they are installed.
- c. If your answer to part (a) is in any way negative, please clarify the referenced testimony.”

RESPONSE:

- a. No.
- b. Not applicable.
- c. Regarding direct expenditures for the benefit of a specific rate class group incurred subsequent to the 24-month Assessment Period, those expenditures would be recovered from the specific rate class group. For example, the costs of residential smart meters would be recovered from the residential rate class group. Similarly, the costs of commercial smart meters would be recovered from the commercial rate class group and the costs of industrial smart meters would be recovered from the industrial rate class group. Common or indirect expenditures benefiting more than one rate class group, such as the backbone infrastructure (e.g., hardware and software), would be allocated among the rate class groups based on the number of metered customers. The allocation of costs incurred during the 24-month Assessment Period and start up costs incurred prior to the 24-month Assessment Period would also be allocated among the Companies and each customer class based on the number of metered customers.

Met- Ed / Penelec/ Penn Power Smart Meter Plan
Response to OSBA Interrogatory Set I, No. 2
Witness: R. I. Parrish
Page 1 of 1

**METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC
COMPANY, AND PENNSYLVANIA POWER COMPANY
DOCKET NO. M-2009-2123950**

OFFICE OF SMALL BUSINESS ADVOCATE Set I, No. 2:

“Reference Met-Ed/Penelec/Penn Power Statement No. 3, page 7, lines 14-21:

- a. Does First Energy expect the cost per smart meter to be the same for single phase and poly-phase service? Please explain your response.
- b. Does First Energy expect the cost per smart meter to be the same for residential and large industrial customers? Please explain your response.”

RESPONSE:

- a. The identification of capital costs including the cost of single phase, poly-phase service, operating costs, and the assignment by rate class will not be determined until after the completion of the 24-month Assessment Period in which capital expenditures and operational and maintenance costs associated with technologies that could be installed to meet the requirements of Act 129 and the Commission’s Implementation Order will be assessed.
- b. See the Response to subpart a, *supra*.

Met- Ed / Penelec / Penn Power Smart Meter Plan
Response to OCA Interrogatory Set I, No. 34
Witness: R. I. Parrish
Page 1 of 1

**METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC
COMPANY, AND PENNSYLVANIA POWER COMPANY
DOCKET NO. M-2009-2123950**

OFFICE OF CONSUMER ADVOCATE Set I, No. 34:

“Re: SMT Surcharges. Is the Company proposing to file a rate case in a specific future year in order to reflect the reductions in its O&M costs from the smart meter investment in its revenue requirements? If yes, what is the future year? If no, why not?”

RESPONSE:

The Companies have no current plans to file rate cases in a specific year to reflect any changes in O&M costs as part of revenue requirements that may result from smart meter investment.

Composite Energy and Demand Allocation Factors by Company and by Rate Class within each Company (2008 Data)				
A. Composite Factor to Allocate Total Costs Among Companies				
Company		Energy (1)	Demand (1)	Composite Energy and Demand (2)
Met-Ed		42.8%	40.2%	41.5%
Penelec		43.1%	46.0%	44.6%
Penn Power		14.1%	13.8%	13.9%
First Energy Companies		100.0%	100.0%	100.0%
B. Composite Factors to Allocate each Company's costs among its Rate Classes				
Company	Rate Class	Energy (1)	Demand (1)	Composite Energy and Demand (2)
Met-Ed	Residential	39.4%	31.6%	35.5%
	Commercial	33.6%	39.9%	36.7%
	Industrial	27.0%	28.5%	27.8%
	Total	100.0%	100.0%	100.0%
Penelec	Residential	31.6%	45.5%	38.5%
	Commercial	36.0%	33.1%	34.6%
	Industrial	32.4%	21.3%	26.9%
	Total	100.0%	100.0%	100.0%
Penn Power	Residential	35.5%	43.5%	39.5%
	Commercial	29.9%	29.0%	29.5%
	Industrial	34.6%	27.4%	31.0%
	Total	100.0%	100.0%	100.0%
Notes				
1	Exhibit__(JRH-3), page 2 of 2			
2	Composite factor is 50% Energy factor and 50% Demand factor			

Development of Energy and Demand Allocation Factors by Company and by Rate Class Within Each Company								
A. Derivation of Energy Allocation Factor								
Company	Rate Class					Annual Total of Energy Use (mWh) (1)	Percent by Company	Percent by Rate Class Within each Company
Met-Ed	Residential					5,602,348		39.4%
	Commercial					4,771,785		33.6%
	Industrial					3,844,614		27.0%
	Total					14,218,747	42.8%	100.0%
Penelec	Residential					4,527,613		31.6%
	Commercial					5,169,302		36.0%
	Industrial					4,646,252		32.4%
	Total					14,343,167	43.1%	100.0%
Penn Power	Residential					1,663,431		35.5%
	Commercial					1,402,231		29.9%
	Industrial					1,618,862		34.6%
	Total					4,684,524	14.1%	100.0%
First Energy Companies	TOTAL					33,246,438	100%	
B. Derivation of Demand Allocation Factor								
Company	Rate Class	Demand per Month (mW) (2)				Average June to September	Percent by Company	Percent of Total
		June	July	August	September			
Met-Ed	Residential	796.6	752	653.1	758.8	740.1		31.6%
	Commercial	1,015.00	997.6	982.3	747.4	935.6		39.9%
	Industrial	629.6	654.9	712.2	674.3	667.8		28.5%
	Total					2343.5	40.2%	100.0%
Penelec	Residential	1,264.40	1,312.40	1,102.70	1,205.50	1221.3		45.5%
	Commercial	1,010.60	893.9	799.5	853.2	889.3		33.1%
	Industrial	648.3	568.1	531.1	543.4	572.7		21.3%
	Total					2683.3	46.0%	100.0%
Penn Power	Residential	391.9	380.6	337.5	288	349.5		43.5%
	Commercial	280.5	231.3	217.1	204.3	233.3		29.0%
	Industrial	230.9	179.9	195.3	275.8	220.5		27.4%
	Total					803.3	13.8%	100.0%
First Energy Companies	TOTAL					5,830.0	100%	
Sources								
1		Response to OCA Interrogatory Set I, No. 2 Attachment A						
2		Response to OCA Interrogatory Set I, No. 2 Attachment B						