

**Market Based**  
**Generation Rate Adjustment**  
**Manual**

**For**

**Metropolitan Edison Company**

**And**

**Pennsylvania Electric Company**

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# 1.0 Introduction

This Manual explains the methodologies Metropolitan Edison Company (“Met-Ed”) and Pennsylvania Electric Company (“Penelec”), (collectively, the "Companies" or individually, the "Company") will use to calculate, bill and support the Market-Based Generation Rate Adjustment Riders contained in Met-Ed’s and Penelec’s retail Tariffs.

The Companies are members of PJM Interconnection, L.L.C. (“PJM”), an electric control area in North America, whose objectives are to ensure reliability of the bulk power transmission system and to facilitate an open, competitive wholesale electric market. PJM enables participants to buy and sell energy, schedule bilateral transactions and reserve transmission service. The PJM service area includes all or part of Pennsylvania, New Jersey, Ohio, Maryland, Delaware, Virginia, Illinois, Indiana, Kentucky, Tennessee, West Virginia and the District of Columbia.

Because the Market-Based Generation Rate Adjustments (“MBGRA”) contain some components defined by PJM, users of this Manual are referred to the following documents which can be found on the PJM website at [www.pjm.com](http://www.pjm.com):

- PJM Operating Agreement (“OA”)
- Reliability Assurance Agreement Among Load Serving Entities in the PJM Control Area (“RAA”)
- Attachments to the PJM Open Access Transmission Tariff (“OATT”):
  - First Energy Supplier Energy Obligation Determination
  - First Energy Supplier Peak Load Share Determination

## Overview

This Manual covers the determination of the Standard Pricing Adjustment (“SPA”) in the Companies' retail tariffs. All C&I Customers shall be required to enter into a service/supply contract for a minimum one (1) year term. The supply portion of this contract (“supply contract”) may be suspended by the Customer by exercising its right to shop for Generation Supply under the SPA.

The SPA allows C&I Customers that have returned from shopping for Generation Supply to shop for Generation Supply at any time during the 12 month period following their return to the Company’s retail tariff by paying the SPA for those months of their current supply contract in which they had remained as a Full Service Customer. Customers otherwise pay their applicable retail tariff rates for the entire one year supply contract. The SPA is not charged to C&I customers who elect to shop for Generation Supply after a continuous 12 month period as a Full Service Customer.

*Under no circumstances shall the SPA adjustments be less than zero.*

## 2.0 Terms & Definitions

The following terms and definitions shall apply to this Manual. Capitalized terms not otherwise defined in this section or in the text of this Manual shall have the meanings specified in the Companies' retail tariffs.

**Ancillary Services** shall have the meaning specified in the PJM OATT.

**Ancillary Services Adder** shall be a dollar amount per MW-hour, intended to compensate the Company for Ancillary Services costs arising from serving the Customer. The Ancillary Service Adder shall be \$1.079 per MWh.

**Average Price of All PJM Auction Capacity Credits** shall be the cost to purchase one (1) MW of Capacity Credit determined by volume weight-averaging all of the PJM Capacity Credit Market clearing prices (multi-month, monthly and daily) for forward-month capacity auctions in PJM applicable to the Summer Months. The unit of measure of Capacity Credits is MW-day.

**Average Price of PJM Auction Monthly Capacity Credits** shall be the cost to purchase one (1) MW of Capacity Credit determined by volume weight-averaging all of the PJM *Monthly* Capacity Credit Market clearing prices for forward-month capacity auctions in PJM applicable to the Target Calendar Month as of the Target Calculation Date. The unit of measure of Capacity Credits is MW-day.

**Billing Period** is the interval for which the on-peak energy and off-peak energy was determined.

**Capacity Credit(s)** shall have the meaning specified in the PJM RAA.

**Capacity Credit Markets** shall be as specified in the PJM OA.

**Day Ahead Hourly LMP** shall be the meaning specified in the PJM OATT.

**Energy Load Weighting Factor** shall be the value expressed in a percent which correlates the energy usage from a typical load profile Rate Schedule to the standard 5x16 strip of energy used in transacting forward energy (i.e., futures).

**Forecast Pool Requirement** shall have the meaning specified in the PJM RAA Agreement.

**Loss Factor** is a numerical value used to adjust the actual energy delivered due to energy losses regularly incurred on the Company's facilities as specified in the "Metropolitan Edison Company and the Pennsylvania Electric Company Electric Generation Supplier Coordination Tariff, Tariff Electric PAPUC No. 1 Original Page No. 20"

**Market Clearing Price** shall have the common meaning as used in association PJM markets specified in the PJM OATT.

**Met-Ed Zone** shall have the common meaning used generally in the PJM markets and settlement process governed by the PJM Agreements.

**Off-Peak Hours** shall be all hours not designated as On-Peak hours.

**Off-Peak to On-Peak Summer Months Energy Market Price Ratio** shall be the ratio of off-peak price of energy to the on-peak price of energy utilizing the applicable Zone (Met-Ed or Penelec) Day Ahead LMPs from the corresponding Summer Months of the previous year.

**Off-Peak to On-Peak Monthly Energy Market Price Ratio** shall be the ratio of off-peak price of energy to the on-peak price of energy utilizing the applicable Zone (Met-Ed or Penelec) Day Ahead LMPs from the corresponding calendar month of the previous year.

**On-Peak Hours** shall be those contiguous hours beginning at 7:00 A.M. Eastern Standard Time through 11:00 P.M. Eastern Standard Time, Monday through Friday (i.e., 16 hours for each of the 5 weekday days and typically referred to as a 5x16 strip), excluding the following six (6) North American Electric Reliability Council (NERC) holidays – New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day – the specific dates for which are listed in Appendix 1F, Subsection F of the NERC Operating Manual under “Additional off-peak days for Eastern and Western Interconnections” for the applicable calendar year.

**On-Peak Monthly Energy Market Price** – shall be the forward market price for energy for On-Peak hours for the Target Calendar Month.

**On-Peak Summer Months Energy Market Price** shall be the forward market price of hourly energy for On-Peak hours during the Summer Months. The determination shall be at the Company's discretion using publicly available information.

**Peak Load Share** shall be the load component used in PJM Capacity Obligations for the Customer as determined in accordance with the "FirstEnergy Procedure Manual for the Determination of Supplier Peak Load Share (For Capacity and Transmission Obligation Purposes) Commencing June 1, 1999."

**Penelec Zone** shall have the common meaning used generally in the PJM markets and settlement process governed by the PJM Agreements.

**PJM Agreements** shall include the PJM Open Access Transmission Tariff (PJM OATT), the PJM Reliability Assurance Agreement (PJM RAA), PJM Operating Agreement (PJM OA) and any other applicable agreement.

**PJM Western Hub**, or its successor, shall be the trading location (not a physical location) in the PJM control area used by marketers, traders and brokers for pricing electric energy transactions.

**Publicly Available Source** shall be a source, not published by the Company and available to the public, although it may be available only through a subscription, for the forward market price of electric energy for standard traded products (e.g., 5 days x 16 hours on-peak strips) for either or both of the On-Peak and Off-Peak Hours periods.

**Returning Customer** shall mean those C&I Customers who have returned to the Company's Full Service rates after securing Generation Supply from a source other than the Company. Any C&I Customer taking Full Service may be classified as a Returning Customer for no more than 12 consecutive months.

**Target Calculation Date** shall be the target date for the determination of the SPA. The Target Calculation Date will be on or before the 15<sup>th</sup> of the month.

**Target Calendar Month** shall be the month for which the SPA is to be calculated (i.e., the month following the month in which the SPA is actually calculated).

**Zonal Clearing Price** is the equivalent to a Market Clearing Price when the price of a required Ancillary Service is not established by a functioning market, but rather is a charge billed to the entity with the load obligation. It is determined based on the aggregate charge divided by the aggregate load served.

**Zonal-R** shall be the aggregation point, which represents the residual load of a designated zone in PJM.

**Zonal Scaling Factor** shall be as specified in the PJM Manual for Load Data Systems.

### 3.0 Tables

**Table 1 – Energy Load Weighting Factor by Tariff Rate Schedule *n***

Met-Ed	Factor
GP	109.710%
GS	115.221%
GS.E	115.221%
GS.F	115.221%
GST	114.415%
TP	106.702%
MS	115.221%

Penelec	Factor
GP	112.861 %
GS	118.863%
GS.F	118.863%
GS.G	118.863%
GST	117.475%
LP	108.277%
H	118.863%

**Table 2 - Loss Factor by Tariff Rate Schedule *n***

	Met-Ed	Penelec
LP & TP	1.0210	1.0407
GP	1.0374	1.0606
All other Rate Schedules	1.0718	1.0945

## **4.0 Standard Pricing Adjustment (“SPA”)**

### **4.1 Eligibility**

To be eligible for the SPA C&I Customers must:

- Have returned from shopping for Generation Supply during the past 12 months.
- Take Full Service on the Companies’ retail tariff schedules.

### **4.2 Overview**

This section of the Manual addresses the SPA and includes

- ⇒ The method for calculating the SPA
- ⇒ An illustrative example of the SPA
- ⇒ Billing & Payment of the SPA
- ⇒ Publishing of data pertinent to the SPA

The SPA is based on the Company providing market-based pricing for Generation Supply to C&I Customers taking Full Service/POLR service. Returning Customers will pay their applicable C&I retail tariff rates for their entire one-year supply contract, but may leave to shop at any time prior to the expiration of that one year supply contract by paying the SPA pricing for those months of their current supply contract in which they had remained with the Company as a Full Service Customer.

The SPA is based on costs for Generation Supply which (i) are determined on a prospective basis to reflect future calendar month prices for such supply in the wholesale market in the succeeding month and which (ii) reflect the incremental cost above the applicable C&I retail tariff generation rate. Under no circumstances shall the SPA be less than zero.

### 4.3 Determination of the SPA

The following calculation shall be used by the Company to calculate the SPA for each Billing Period.

$$SPA_n = \{ [ (SPAC_n \times (1 \div (1 - T))) ] - \text{Tariff GEN}_n \} + \text{Administration Fee}$$

**SPA<sub>n</sub>** is the Standard Pricing Adjustment for C&I Customers on Tariff Rate Schedule *n* determined on the load-weighted average month-ahead all-hours basis for the Billing Period.

**SPAC<sub>n</sub>** is the Standard Pricing Adjustment Cost for Tariff Rate Schedule *n* determined on the load-weighted average month-ahead all-hours basis for the Billing Period.

**T** is the applicable state gross receipts tax rate in effect during the Billing Period, expressed in decimal form.

**Tariff Rate Schedule** is an individual Rate Schedule as defined in each of the Penelec and Met-Ed Electric Service Tariffs.

**n** is the computational index that will, in turn, represent each of the Tariff Rate Schedules of commercial and industrial Customers.

**Tariff GEN<sub>n</sub>** is the Generation Rate Charges for Tariff Rate Schedule *n* in effect during the Billing Period:

**Administration Fee** is a fee charged each Billing Period when a Customer shops prior to the anniversary date of its current supply contract. The Administration Fee is intended to recover the Company's costs to administer the SPA including, but not limited to, (1) forecasting of the SPA (2) bill production, (3) billing system changes, and (4) implementation and maintenance of publication systems related to the SPA. Except for Customers served under Rate Schedule GS with a monthly billing demand of 10 kW or less, the Administration Fee is 10% of the SPAC<sub>n</sub> charges, not to exceed \$200. For Customers served under Rate Schedule GS with a monthly billing demand of 10 kW or less, the Administration Fee is \$5 per month. The Administration Fee will be charged only for the Billing Periods in which there is an actual SPA being billed to the Customer.

The preceding formula shows the manner in which the  $SPAn$  is determined; however, it does not show how the  $SPACn$  itself is derived. The  $SPACn$  is expressed as:

$$SPACn = (\text{SPACn of On-Peak Energy and Ancillary Services}) + (\text{SPACn of Off-Peak Energy and Ancillary Services}) + (\text{SPACn of Capacity})$$

Where:

<b>SPACn of On-Peak Energy &amp; Ancillary Services (\$)</b>	=	Energy Load Weighting Factor for Tariff Rate Schedule $n$	See Table 1
	*	( On-Peak Monthly Energy Market Price for Target Calendar Month	Varies by Month
	+	Ancillary Services Adder)	\$ 1.079 / MWh
	*	(Customer's On-Peak Energy in the Target Calendar Month	Varies by Month
	*	Loss Factor for Tariff Rate Schedule $n$ )	See Table 2

+

<b>SPACn of Off-Peak Energy &amp; Ancillary Services (\$)</b>	=	Energy Load Weighting Factor for Tariff Rate Schedule $n$	See Table 1
	*	( On-Peak Monthly Energy Market Price for the Target Calendar Month	Varies by Month
	+	Ancillary Services Adder)	\$ 1.079 / MWh
	*	Off-Peak to On-Peak Monthly Energy Market Price Ratio for the Target Calendar Month	Varies by Month
	*	(Customer's Off-Peak Energy in the Target Calendar Month	Varies by Month
	*	Loss Factor for Tariff Rate Schedule $n$ )	See Table 2

+

<b>SPACn of Capacity (\$)</b>	=	Average Price of PJM Auction Monthly Capacity Credits for the Target Calendar Month	Varies by Month
	*	Days in Billing Period	Varies by Month
	*	Customer's Peak Load Share for the Target Calendar Month	Varies by Customer
	*	Forecast Pool Requirement for the Target Calendar Month	Varies by Planning Year
	*	Zonal Scaling Factor for the applicable Zone (Met-Ed or Penelec) for the Target Calendar Month	Varies by Season

#### 4.4 Example of SPA Applied to a Customer's Bill

-- The data used herein is for illustrative purposes only --

##### **Summary of Billing Details for a Met-Ed Rate Schedule TP Customer:**

Billing Period	June 2003
Days in Billing Period	30 days
Zone	Met-Ed
Shopping Status	POLR
Tariff Rate Schedule	TP
Load Profile Rate Schedule	TPI
Peak Load Share (kW)	974.7231
On-peak kWh	6,502,235
Off-peak kWh	3,147,501
Total kWh	9,649,736
Tariff GEN Charges for June 2003	\$389,559.84
PA Gross Receipts Tax for June 2003	4.40%

##### **Information Published on First Energy's website**

On-Peak Price of Energy Market for June 2003	\$ 50.897 / MWh
Off-Peak to On-Peak Energy Market Price Ratio for June 2003	0.46444
Average Price of PJM Auction Monthly Capacity Credits for June 2003	\$ 7.93 / MW-day

##### **Information Published on PJM's website**

Zonal Scaling Factor for the Met-Ed Zone for June 2003	1.01559
Forecast Pool Requirement for the PJM Pool, including the Met-Ed Zone for June 2003	1.0950

**Sample Calculations of the SPACTP:**

<b>SPACTP of On-Peak Energy &amp; Ancillary Services (\$)</b>	=	Energy Load Weighting Factor for Rate Schedule TP	106.702%
	*	( On-Peak Monthly Energy Market Price for June 2003	\$ 50.897 / MWh
	+	Ancillary Services Adder)	\$ 1.079 / MWh
	*	(Customer's On-Peak Energy in June 2003	6,502,235 kWh
	*	Loss Factor for Rate Schedule TP)	1.0210

+

<b>SPACTP of Off-Peak Energy &amp; Ancillary Services (\$)</b>	=	Energy Load Weighting Factor for Rate Schedule TP	106.702%
	*	( On-Peak Monthly Energy Market Price for June 2003	\$ 50.897 / MWh
	+	Ancillary Services Adder)	\$ 1.079 / MWh
	*	Off-Peak to On-Peak Monthly Energy Market Price Ratio for June 2003	0.46444
	*	(Customers Off-Peak Energy in June 2003	3,147,501 kWh
	*	Loss Factor for Rate Schedule TP)	1.0210

+

<b>SPACn of Capacity (\$)</b>	=	Average Price of PJM Auction Monthly Capacity Credits for June 2003	\$ 7.93 \$/ MW-day
	*	Days in June 2003	30
	*	Customer's Peak Load Share for June 2003	974.7231 kW
	*	Forecast Pool Requirement for June 2003	1.0950
	*	Zonal Scaling Factor for the Met-Ed Zone for June 2003	1.01559

Therefore:

$$\begin{aligned}\mathbf{SPAC}_{TP} &= (\mathbf{SPAC}_{TP} \text{ of On-Peak Energy and Ancillary Services}) \\ &+ (\mathbf{SPAC}_{TP} \text{ of Off-Peak Energy and Ancillary Services}) \\ &+ (\mathbf{SPAC}_{TP} \text{ of Capacity}) \\ &= \$368,183.07 + \$82,774.52 + \$257.87 \\ &= \$451,215.46\end{aligned}$$

And

$$\begin{aligned}\mathbf{Admin Fee} &= \text{Lesser of } \$200.00 \text{ or } 10\% \text{ of } \mathbf{SPAC}_{TP} \\ &= \text{Lesser of } \$200.00 \text{ or } 10\% * \$451,215.46 \\ &= \text{Lesser of } \$200.00 \text{ or } \$ 45,121.55 = \$200.00\end{aligned}$$

Therefore,

$$\begin{aligned}\mathbf{SPA}_{TP} &= \{ [ \mathbf{SPAC}_{TP} * (1 \div (1 - T)) ] - \text{Tariff GEN}_{TP} \} + \text{Administration Fee} \\ &= \{ [ \$451,215.46 * (1 \div (1 - 4.40\%)) ] - \$389,559.84 \} + \$200.00 \\ &= \{ [ \$451,215.46 * 1.046 ] - \$ 389,559.84 \} + \$200.00 \\ &= \{ \$471,971.37 - \$ 389,559.84 \} + \$200.00 \\ &= \$82,411.53 + \$200.00 \\ &= \$82,611.53\end{aligned}$$

To convert the  $\mathbf{SPAC}_{TP}$  to “cents per kWh” follow these steps:

$$\begin{aligned}&= [ (\mathbf{SPAC}_{TP} + \text{Admin Fee}) * 100 ] \div \text{Total kWh} \\ &= [ ( \$451,215.46 + \$200.00 ) * 100 ] \div 9,649,736 \text{ kWh} \\ &= 4.6780 \text{ cents per kWh}\end{aligned}$$

To convert the  $\mathbf{SPA}_{TP}$  to “cents per kWh” follow these steps:

$$\begin{aligned}&= (\mathbf{SPA}_{TP} * 100) \div \text{Total kWh} \\ &= ( \$82,611.53 * 100 ) \div 9,649,736 \text{ kWh} \\ &= .8561 \text{ cents per kWh}\end{aligned}$$

#### **4.5 Billing & Payment of the SPA**

Charges for the SPA will be included on the Customer's monthly invoice from the Company. Energy consumption for the Billing Period will be prorated into calendar month usage. The SPA pricing for the calendar month will be multiplied by the C&I Customer's appropriate calendar month usage to determine the  $SPAC_n$  and  $SPAN_n$ .

#### **4.6 Publishing of Data Pertinent to the SPA**

The Company shall publish the following SPA components on its website by the 15<sup>th</sup> of each month, which shall be applicable for the succeeding month.

- ⇒ On-Peak Monthly Energy Market Price
- ⇒ Off-Peak to On-Peak Monthly Energy Market Price Ratio
- ⇒ Average Price of PJM Auction Monthly Capacity Credits