JERSEY CENTRAL POWER & LIGHT COMPANY,
METROPOLITAN EDISON COMPANY, PENNSYLVANIA
ELECTRIC COMPANY PROCEDURE MANUAL

Determination of Supplier Total Hourly Energy Obligation Commencing June 1, 1999

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Introduction

This document provides an explanation of the methodology and mechanics Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec"), and Jersey Central Power & Light Company ("JCP&L") (collectively "Company") and Third Party Suppliers (New Jersey) and Electric Generation Suppliers (Pennsylvania) (collectively "Suppliers") will apply to calculate and coordinate the information transfer needed to implement retail open access associated with Suppliers' energy obligations at PJM.

The Company will report to the Suppliers and to PJM on a day-after-the-fact basis the Supplier's Total Hourly Energy Obligation ("THEO") for each calendar day for which the Supplier provides energy on the Company's system. This daily report will contain hourly telemetered usage for customers with Advanced Meters and estimated hourly-usage for customers without such meters. The hourly-usage estimate for non-telemetered customers will be the product of a Usage Factor ("UF") and the hourly typical-class usage determined from daily Load Profile, or mathematically derived hourly usage based on weather and other factors. The UF will be calculated with billed usage data available from the immediately-prior billing cycle and the aggregate Load Profile for the corresponding period. This UF will be recalculated at the closing of each billing cycle.

PJM will utilize the information contained in the THEO report in determining the hourly energy-interchange accounting and reconciliation under the terms of the PJM Operating Agreement, the PJM Open Access Transmission Tariff and the Third Party Supplier Agreement (New Jersey) or Electric Generation Supplier Coordination Tariff (Pennsylvania). The difference between the Supplier's THEO estimated by the Company and the energy actually delivered by the Supplier will be the basis for PJM's initial energy-interchange billing. This initial energy-interchange billing will be further adjusted based upon the hourly differences that may exist between the estimated THEO reported to PJM and the customer's actual monthly usage allocated to each of the hours of the month to be adjusted. The estimation of the customer's usage and the calculation of the hourly adjustments are the subject of this manual.

Please see attached Exhibit A for a list of Loss Factors, and Exhibit C for a simplified sample calculation of Energy Obligation for monthly non-telemetered customers. A discussion of each Company's load profiling methodology is posted on each Company's Supplier website.

Determination of the Total Hourly Energy Obligation - For Initial Interchange Billing

The Supplier's THEO will be reported to PJM as 24 hourly numbers. Each hourly number will be the sum of the totals in each customer class, segregated by the Company Zone (Met-Ed, Penelec, or JCP&L) in which the Supplier served load in that hour. The THEO will comprise two components:

THEO= TM+NTM+NM; Where

TM= Sum[(Telemetered)$_p$ * (Loss Factor)$_p$], and

NTM= Sum[(CLP)$_p$*(Loss Factor)$_p$]

NM = Sum [(FHD)$_p$ * (Loss Factor)$_p$]

CLP= Customer Load Profile Usage

FHD = Fixed Hourly Distribution

p= Profile Group

Telemetered Data

The telemetered data will be the sum of the products of the hourly usage recorded in each Advanced Meter in a customer class and that class's loss factor. If, for any reason, an Advanced Meter fails to report hourly data in a given time period, the missing data will be estimated using that customer's historic usage for a similar time period.

Non-Telemetered Data

The non-telemetered data will be the sum of the product of the customer's load-profile usage in a customer class for that hour and that class's loss factor.

The hourly customer Load Profile usage will be calculated as follows:

CLP$_k$=(UF)$_k$*(Class-Profile Hourly Usage)$_p$

Where k=customer

Usage Factor

The UF used to estimate a customer's usage for a given hour will be determined as the ratio of the customer's electric use for the immediately-prior billing period to the aggregate hourly Load Profile for the same period. The estimated customer hourly usage will be this UF multiplied by the typical class use for that hour as reported by the Load Profile.

If a new customer has no historic or billed usage, an estimated hourly UF of one (1) will be imputed to that customer. All others will have a UF equal to the ratio of the customer's prior total billed consumption to the total typical usage in that class. This class-typical usage will be derived from hourly data collected from the Company's Load Profile meters as explained in Exhibit B. During the first few months of transition to retail choice, the Company may use UF based on the customer's historic usage and static load research data.

The resulting hourly numbers reported to PJM will be in whole MWh, or any other increment established by PJM. Currently, fractions of MWh will be carried over and added to the following hour's estimate. The estimate for the hour ending on hour 24 will be rounded to the nearest whole MWh, except if this results in an estimate equal to zero (0). If the estimate for the 24th hour is less than one (1), it will be set to one (1).

Responsibilities for Coordination

To ensure successful coordination the parties will be responsible as follows:

Supplier's Responsibilities

- The Supplier will schedule its physical energy with PJM following PJM requirements.

- The Supplier will cooperate with reasonable audit requests by the Company or professional auditing firms acting on the Company's behalf. Such audits are intended to provide the Company with a reasonable confidence in the validity and accuracy of any information that the Company obtains from the Supplier. The Company shall bear the cost of the audit as well as the Supplier's time and expense for cooperation with the audit. The scope of the audit and the terms of payment are to be agreed upon by the Company and the Supplier party prior to commencement of the audit.

Company's Responsibilities

- The Company will compute and report daily to PJM and to the Supplier the Supplier's THEO in a day-after-the-fact basis using PJM's "eSchedules" This THEO will constitute the initial estimate of the Supplier's hourly load in the appropriate Company's Zone for the purpose of hourly energy interchange accounting by PJM.

- The Company will report the Supplier's THEO to PJM and to the Supplier by 12:00 noon each business day, and by 4:00 PM on the next business day following weekends and holidays.

- The Company will provide this data to the Suppliers via Internet, EDI (Electronic Data Interchange), or any other protocol developed and approved by the NJ Board of Public Utilities or the Pa. Public Utility Commission.

- The Company will not forecast the Supplier's THEO.

- The Company will cooperate with reasonable audit requests by Suppliers or professional auditing firms acting on their behalf. Audits are intended to provide the Supplier with reasonable confidence that the Company is calculating the Supplier's energy obligations in accordance with the user manual. The Supplier shall bear the cost of the audit as well as the Company's time and expense for cooperation with the audit. The scope of the audit and the terms of payment are to be agreed upon by the Company and the Supplier prior to commencement of the audit. Specific customer information (unless released by the customer) and proprietary information shall not be provided by the Company. The Company will address audit requests on a first come, first served basis.

- To facilitate the Supplier's calculation and understanding of the Company's reports, the Company will make available via its web site (http://www.firstenergycorp.com/supplierservices), supporting information and sample calculations illustrating the Company's methodology applied in the determination of the Supplier's obligation.

Energy Reconciliation, Settlement and Bill Adjustments - Monthly Adjustments

As mentioned above, the estimated THEO will be the basis for the initial hourly energy interchange accounting by PJM which shall result in a monthly market-energy interchange bill based on the Met-Ed, Penelec, or JCP&L load weighted average zonal Locational Marginal Price ("LMP") to be issued by PJM. Subsequently, the Company will calculate adjustments to THEO based upon additional, more accurate data that the Company may obtain at the end of the full meter-reading cycle.

These adjustments will account for errors including, but not limited to, those due to data transmission, the inherent inaccuracies of using a one-month lagging UF for non-Advanced Meters, and additional errors that may result from the timing differences between the actual reading of the meters and closing of the billing cycle. These additional errors may occur during the first and last few days of a Supplier contract with a customer, since the initial obligation is calculated upon the number of customers in a Supplier's list of customers as of the last billing date; while the Supplier's final obligation is calculated for the period between meter readings. The Company will endeavor to read meters on the estimated date offered to the Supplier and close the billing cycle as soon as practicable following the meter readings.

The new THEO will be the total customer billed usage "shaped" proportionally to the Class Hourly Load Profile and zonal load. This hourly-allocated (shaped) usage will then be adjusted for losses and compared to the previously estimated hourly obligation. The result will be placed in the appropriate hour. Next, the Company will sum the hourly differences for all of the customers served by the appropriate Supplier and report those hourly MWh values to PJM. PJM will then issue a final bill appropriately adjusting the initial bill. The bill adjustments issued by PJM will be calculated using the appropriate Company's LMP for the hours adjusted.

These adjustments will be provided to PJM and the Supplier within two months after the month subject to adjustment. This will constitute a monthly energy reconciliation. These bill adjustments will be calculated as the difference between the initial THEO and a new obligation (new THEO) calculated with the actual customer's billed usage for the period previously estimated. Typically, this period will coincide with the time between meter reads.

For customers with interval non-telemetered as well as customers with hourly telemetered meters, the new THEO will be the actual recorded usage for each hour in the period shaped to the zonal load.

Adjustment calculations (Monthly non-interval metered customers):

Hourly "Shaping" Factor (HSF):

HSF_p= (Hourly Load Profile Usage) $_p$/(Total Load Profile Usage) $_p$

New THEO= Sum [(HSF) $_p$*(Total Billed Customer Usage) $_p$* LF_p]

Final THEO = New THEO + Sum (ZLA_{Hourly});

ZLA_{Hourly} = Zonal Load Allocation calculated hourly

Where

UFE_{Hourly} = (Final Monthly Zonal $Load_{Hourly}$ – Sum (New $THEO_{Hourly}$))

ZLA_{Hourly} = UFE_{Hourly} * (Supplier New $THEO_{Hourly}$/ Sum(New $THEO_{Hourly}$))

The Hourly Adjustment to the monthly bill is: Old THEO – Final New THEO.

The Company will make reasonable efforts to adjust hourly load profile data to account for sampling error prior to the monthly calculation of a Supplier's "New THEO".

Wholesale customers will be assigned energy requirements as accepted by PJM. If no such specific arrangement with a Supplier exists, energy obligations will be imputed to wholesale customers based on the methods described in this manual.

"Third-Tier" Reconciliation

In addition to the adjustments mentioned above, PJM's monthly bills to the Company and Supplier or scheduling coordinator shall be subject to adjustment for any errors in arithmetic, computation, meter readings or other errors as agreed upon by the Company and the Supplier or Scheduling Coordinator. Currently, the bills and/or credits will be calculated at the appropriate Company's LMP, until such time as PJM utilizes the Supplier hourly bus distribution submitted by the Company in the determination of Supplier aggregate LMPs, and the Company has provided to each Supplier the initial bus distribution for its customers.

Disputes shall be resolved through the PJM Dispute Resolution process.

Exhibit A

Loss Factors

	MET-ED	PENELEC	JCP&L
Rate Schedule LP, TP & GT	1.0210	1.0407	1.039
Rate Schedule GP	1.0374	1.0606	1.061
All other Rate Schedules	1.0718	1.0945	1.118

Exhibit C

Sample Calculation:

Hourly Obligation Calculation:

Determine the Total Hourly Energy Obligation to be reported to PJM by Noon on March 16, 1999 for a Supplier serving three (3) customers in MetEd's RS No Heat Profile Group during the hour ending at 10 on March 15, 1999.

Available data from Prior (February) Bill

Customer	Bill Dates	Billed Usage	Class Usage	Days
#1	2/3~3/6	2477 kWh	1717 kWh	32
#2	2/4~3/5	1100 kWh	1620 kWh	30
#3	2/3~3/7	1429 kWh	1756 kWh	33

The Class Profile Usage for the 10th hour of March 15th was **2.3 kWh**.

Usage Factor (equivalent customers), and Hourly Obligation:

Customer	Usage Factor	Eq. Cust.	Obligation
#1	(2477/1717)	(1.44)	
#2	(1100/1620)	(0.68)	
#3	(1429/1756)	(0.81)	
Total		2.94 EC*2.3 kWh	6.751 kWh

The Supplier's Total Hourly Energy Obligation reported to PJM for Class RS on the 16th for hour 10 on the 15th is: =

6.751kWh* 1.0718 = 7.236 kWh

Note: These calculations would be repeated for each class in which the Supplier serves customers.

Hourly Total:

The hourly total will be the sum of the hourly telemetered values upgraded for losses plus the hourly totals of the non-telemetered values upgraded for losses calculated following the methodology described above.

Fractions in each hour will be carried and added to the next hourly value. The value for hour ending on the 24th hour will be rounded to the next whole value. The hourly values reported to PJM for the prior 24-hour usage will be in whole MWh units.

Monthly Adjustments/Reconciliation:

Following the completion of the monthly meter-read cycles applicable to that month, the Company will recalculate the Usage Factors for the period previously estimated.

Hence, based on metered usage corresponding to the month of March, the adjustment for hour 10 on March 15th will be calculated as follows:

New/Actual data available for the Month of March

Customer	Bill Dates	New Usage	Class Usage	Days
#1	3/7~4/7	2315 kWh	2021	32
#2	3/6~4/4	1200 kWh	1894	30
#3	3/8~4/9	1630 kWh	2084	33

The Class Profile Usage for the 10th hour of March 15th *continues* to be **2.3 kWh**.

The updated obligation will be "shaped" to the actual hourly typical class values calculated with the new data as follows:

"Shaping" is the methodology used to determine an hourly scaling factor to "shape" the customer's monthly use to the typical class-profile. Shaping also includes reconciliation to the Zonal Load value. These are two ways to determine the hourly adjustments to be sent to PJM for reconciliation.

Customer	"Shaping factor"	Obligation	kWh
#1	(**2.3**/2021)	(2.3/2021)*2315	2.64
#2	(**2.3**/1894)	(2.3/1894)*1200	1.457
#3	(**2.3**/2084)	(2.3/2084)*1630	1.799
Total for the hour			5.891 kWh

Total Hourly Energy Obligation for Class RS = 5.891kWh* 1.0718 = 6.314 kWh

To illustrate the calculation of ZLA for the same hour, assume the following:

Zonal Load Hour 10 on March 15th: 2000 MWh

New THEO Hour 10 on March 15th: 1998 MWh

$UFE_{3/15, HR10}$ = 2000MWh – 1998MWh = 2 MW or 2000 kWh

$ZLA_{3/15, HR10}$ = 2000 kWh * (6.314 kWh / 1998 MWh) = .00632 kWh

Final THEO = 6.314kWh + .00632 kWh = 6.320 kWh

The Company will submit to PJM a calendar-month adjustment file containing adjustment amounts for each hour on that calendar month. The adjustment amounts will be reported on kWh units. For this example the adjustment amount for hour 10th on March 15th will be (7.236kWh - 6.320kWh) = 0.915kWh, plus any other adjustments to the telemetered data. In this case the Company owes PJM payment for 0.915kWh at the Met-Ed Zonal-Load weighted LMP for that hour.