

January 31, 2012

**Via Electronic Delivery**

Honorable Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: *New York Independent System Operator, Inc.*, Docket No. ER06-1014-000  
Eleventh Price Validation Informational Report

Dear Ms. Bose:

Pursuant to Ordering Paragraph (B) of the Commission's July 14, 2006 order ("July 14 Order") in the above-captioned proceeding,<sup>1</sup> the New York Independent System Operator, Inc. ("NYISO") respectfully submits this Price Validation Informational Report ("Report"), which details the corrections that the NYISO has made to erroneous locational based marginal prices ("LBMPs") from the period July 1, 2011 through December 31, 2011, as well as actions the NYISO has taken to minimize pricing errors.

Due to the NYISO's continued efforts, conducted in collaboration with its stakeholders, price errors and the need for price corrections continue to be infrequent. In 2005, the NYISO corrected prices in approximately 16% of hours. In 2006, that number was reduced to approximately 3% of hours. In 2007, the number was further reduced to approximately 1% of hours. In 2008, the percentage of hours containing price errors continued to decline to approximately 0.7%. In 2009 the percentage of hours corrected was 0.3%. In 2010 the percentage of hours corrected was 0.2%. In 2011 the correction rate showed a slight increase, with the percentage of hours corrected moving up to 0.3%. This increase in price corrections was due to issues related to the deployment of Enhanced Interregional Transaction Coordination (EITC) code, which introduced 15-minute scheduling of external transactions.<sup>2</sup>

**I. Background**

In its July 14 Order, the Commission conditionally accepted proposed revisions to the NYISO's tariffs to eliminate its Temporary Extraordinary Procedures ("TEPs") and establish a framework and time limits for price corrections outside of the TEPs. In that order, the

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<sup>1</sup> *New York Independent System Operator, Inc.*, 116 FERC ¶ 61,037 (2006).

<sup>2</sup> See *New York Independent System Operator*, Order Conditionally Accepting Proposed Tariff Revisions and Granting Waiver, Docket No. ER11-2547-000, 134 FERC 61,186 (issued March 14, 2011); *New York Independent System Operator*, Order Granting Deferral of Effective Dates and Waivers, Docket Nos. ER11-2454-000 and ER11-2547-000, 135 FERC 61,256 (issued June 20, 2011); *New York Independent System Operator, Inc.*, Letter Order (accepting April 13, 2011 compliance filing on scheduling at proxy buses), Docket No. ER11-2547-001 (issued July 21, 2011).

Commission required the NYISO to submit informational reports every six months thereafter which indicate the causes of pricing errors that occurred during the reporting period, the duration and rate impact of those errors and the associated corrections, and the actions the NYISO took to correct the pricing errors. In addition, the Commission directed the NYISO to summarize and discuss what actions it undertook to reduce or eliminate the types of pricing errors that occurred.

This is the eleventh Report submitted in compliance with the July 14 Order.<sup>3</sup> This Report details all of the price corrections the NYISO made for the period July 1, 2011 through December 31, 2011 in its Real-Time Market.<sup>4</sup> There were no Day-Ahead Market price corrections during the reporting period. The Report identifies the causes of each pricing error, the number of Real-Time Dispatch (“RTD”) intervals affected,<sup>5</sup> and the amount by which each corrected price was changed. In addition, the Report describes the measures taken by the NYISO to minimize the incidence of pricing errors and to improve its price validation and correction practices. Attachments A and B to this Report detail the Real-Time Market price corrections for the period July 1, 2011 through December 31, 2011.

## **II. Communications and Correspondence**

Communications regarding this filing should be directed to:

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<sup>3</sup> The NYISO submitted the ten prior reports to the Commission on January 31, 2007, July 31, 2007, January 31, 2008, August 1, 2008, January 30, 2009, July 31, 2009, January 31, 2010, July 29, 2010, January 28, 2011, and July 29, 2011 respectively.

<sup>4</sup> The Real-Time Market is defined as the “ISO-administered markets for Energy and Ancillary Services, resulting from the operation of the RTC [Real-Time Commitment] and RTD [Real-Time Dispatch]” models. OATT at Section 1.18; Services Tariff at Section 2.18. While the NYISO corrects prices in the hour-ahead market, as necessary, that “market” consists of only advisory prices that are not used in NYISO settlements. Furthermore, the NYISO has corrected relatively few advisory prices during the period covered by this Report.

<sup>5</sup> RTD intervals normally occur every five minutes.

### III. Service

The NYISO will send an electronic link to this filing to the official service list compiled by the Secretary in this proceeding, to the official representative of each of its customers, to the New York Public Service Commission, and to the New Jersey Board of Public Utilities. In addition, a complete copy of this filing will be posted on the NYISO's website at [www.nyiso.com](http://www.nyiso.com).

### IV. Report Details

#### A. Types and Causes of Pricing Errors

Attachment Q of the OATT and Attachment E of the Market Services Tariff define two types of price errors.<sup>6</sup> The first type of error ("Type I") results from a simple miscalculation and can reflect a software programming error or a failure of the software to produce an accurate price calculation. The second type of error ("Type II") results when a price is based on an incorrect price-setting resource.

The NYISO classifies pricing errors at two levels. The first level is the type of error, as described above. The second level provides a more detailed description of the underlying cause of the error. The NYISO recognizes eight second-level error classifications, as follows:

- 1 – Posting Error** – Posting errors occur when prices do not properly post on NYISO's website. These include instances when prices posted incorrectly or did not post at all.
- 2 – Indeterminacy / Penalty or Shift Factor Trade-offs** – Indeterminacies occur when the pricing solution cannot be tied to a specific resource. Penalty and shift factor trade-offs are dispatch schedules that are mathematically correct but inconsistent with actual operating practices or procedures.
- 3 – Static Data Error** – Static data errors are instances when incorrect non-metered data are used in the pricing and scheduling system software.
- 4 – Computer System Failure** – Computer system failures include all IT hardware systems used in compiling data, and calculating and posting prices.
- 5 – Software Error** – Software errors are programming errors in the computer code that is used in the commitment, dispatch and price calculation processes.
- 6 – Telemetry** – Telemetry issues are caused by problems in the metering, compilation and conveyance of meter data from generators, loads, tie lines and phase angle regulators to the NYISO.

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<sup>6</sup> See OATT, Attachment Q at Sections 23.1.1 and 23.1.2; Services Tariff, Attachment E at Sections 20.1.1 and 20.1.2.

**7 – Prices Inconsistent with Dispatch / No Marginal Unit** – Errors here are the result of the unit dispatch and pricing not being consistent. Also included are instances when no marginal unit can be identified.

**8 – Operator Input** – Operator input errors occur when the system operator enters an erroneous value that results in incorrect pricing.

**B. Discussion of Pricing Errors from July through December 2011**

The NYISO has conducted an analysis of its Real-Time Market from July through December 2011 to determine the number of intervals and hours that required price corrections, as well as the causes of the underlying price errors. Table 1-A below provides a count of hours corrected by month in the Real-Time Market.

**Table 1-A**  
**RTD Hours Corrected**  
**July - December 2011**

2011	Hours		
	Corrected	Total	% Corrected
July	5	744	0.67%
August	1	744	0.13%
September	0	720	0.00%
October	1	744	0.13%
November	0	720	0.00%
December	0	744	0.00%
<b>Total</b>	<b>7</b>	<b>4,416</b>	<b>0.16%</b>

As shown above, the NYISO corrected prices in only 0.16% of the hours in the second half of 2011. It should be noted that any hour that had at least one interval corrected is included in this tabulation. During this period, three months, September, November and December, had no price corrections, August and October each had one hour corrected, and July had almost all of the price corrections for the period due to a problem with scarcity pricing. As a result of errors in the Scarcity Pricing posting logic, the RTD energy and ancillary prices did not accurately reflect Scarcity Pricing as defined in the Market Services Tariff.

Table 1-B below provides a compilation, by month, of the number of RTD intervals corrected from July through December of 2011. As would be expected, the percentage of intervals corrected is significantly less than the percentage of hours corrected because not all intervals in a corrected hour were erroneous.

**Table 1-B**  
**RTD Intervals Corrected**  
**July - December 2011**

2011	Intervals		
	Corrected	Total	% Corrected
July	50	9,060	0.55%
August	2	9,022	0.02%
September	0	8,697	0.00%
October	2	8,989	0.02%
November	0	8,695	0.00%
December	0	8,989	0.00%
<b>Total</b>	<b>54</b>	<b>53,452</b>	<b>0.10%</b>

For the period July through December 2011 there were 54 RTD intervals corrected for a correction rate of 0.1%. Three months (September, November and December) had no corrections. The highest monthly interval correction rate of 0.55% occurred in July due to the scarcity pricing issue described above. All but four intervals corrected were because of this problem.

The price corrections from July through December 2011 were classified by error type and error description for both hours and intervals. Table 2 provides the distribution of price corrections by month between the error types (Type I or Type II).

As Table 2 shows, nearly all of the RTD interval price corrections in the second half of 2011 were Type I – Calculation Errors. On an hourly basis, six of the seven hours were corrected for Type I errors.

**Table 2**  
**RTD Price Correction Error Types**  
**July - December 2011**

2011	Intervals		Hours	
	Type I	Type II	Type I	Type II
July	50	-	5	-
August	2	-	1	-
September	-	-	-	-
October	-	2	-	1
November	-	-	-	-
December	-	-	-	-
<b>Total</b>	<b>52</b>	<b>2</b>	<b>6</b>	<b>1</b>

Table 3 presents a summary of RTD interval price corrections classified by reason for the second half of 2011.

**Table 3**  
**July - December 2011**  
**RTD Interval Price Corrections by Reason**

Reason	Jul	Aug	Sep	Oct	Nov	Dec	Total
1 - Posting Error	-	2	-	-	-	-	2
2 - Indeterminacy / Penalty or Shift Factor Trade-Off	-	-	-	-	-	-	0
3 - Data Error - Static	-	-	-	-	-	-	0
4 - Computer System Failure	-	-	-	-	-	-	0
5 - Software Error	50	-	-	-	-	-	50
6 - Telemetry	-	-	-	-	-	-	0
7 - Prices Inconsistent w/Dispatch / No Marginal Unit	-	-	-	-	-	-	0
8 - Operator Input	-	-	-	2	-	-	2
<b>Total</b>	<b>50</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>54</b>

### July Price Corrections

July had price corrections on two days, the 22<sup>nd</sup> and the 31<sup>st</sup>. The price corrections for July 22 involved incorrect scarcity pricing for five hours totaling forty-seven intervals. High temperatures and loads necessitated the activation of demand-side resource programs. These programs were invoked for HB 12-18. Due to problems with the Scarcity Pricing posting logic, the RTD energy and ancillary prices did not accurately reflect Scarcity Pricing as defined in the Market Services Tariff. Due to the complexity of the Scarcity Pricing rules along with the limited time and resources available for reviewing and revising the Scarcity Pricing posting logic, it was not possible to correct all of the RTD energy and ancillary prices by the correction deadline of July 26. While RTD energy prices were corrected within the three day tariff deadline, RTD ancillary prices were not. Thus a waiver filing was submitted to FERC requesting permission to correct RTD Ancillary Services prices after the July 26 correction deadline.<sup>7</sup> This waiver was approved by FERC on September 01, 2011.<sup>8</sup>

The July 31 price correction involved three intervals in one hour (HB 17). In this case there was a software error in how multiple constraints were handled in the pricing logic for non-competitive, variably scheduled proxy generator buses associated with the deployment of EITC code.

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<sup>7</sup> *Notification of Inability to Timely Complete Price Corrections, Request for Limited Tariff Waiver to Permit Ancillary Service Prices to be corrected, and request for shortened notice period and expedited commission action of the New York Independent System Operator, Inc.*, Docket No. ER11-4141-000 (Filed July 29, 2011)

<sup>8</sup> *New York Independent System Operator, Inc.*, 136 FERC ¶ 61,156, Docket No. ER11-4141-000 (2011)

### August Price Corrections

In August there were two intervals corrected on August 23. The correction was necessary because a software deployment resulted in the failure of the two intervals to post to OASIS. The intervals 13:45 and 14:00 were subsequently recovered and posted.

### September Price Corrections

There were no price corrections in September 2011.

### October Price Corrections

There were two intervals corrected on October 27 – 09:10 and 09:15. The erroneous prices were the result of an operator error.

### November Price Corrections

There were no price corrections in November.

### December Price Corrections

There were no price corrections in December.

## **C. Correction of Pricing Errors**

The overwhelming majority of price corrections occur in the real-time market. When erroneous prices are found, there are a number of ways they can be corrected. NYISO uses the following seven correction modes for erroneous LBMPs:

1. Replace with the price of a preceding or subsequent interval
2. Average the preceding and subsequent interval prices
3. Replace with the advisory price of a preceding interval
4. Substitute erroneous LBMP with price from a similar bus
5. Recalculate prices
6. Replace with prices of another market (RTC or SCUC)
7. Repost missing prices

In accordance with NYISO's Market Services Tariff, price corrections must accurately reflect actual system conditions. A correction mode that is appropriate for an error in one circumstance may not be appropriate for the same error in another circumstance due, for example, to different commitment schedules, constraint patterns or external schedules. When pricing errors are found, the NYISO conducts an evaluation of the system conditions in the erroneous pricing interval, and uses a correction mode that most accurately reflects those conditions. The determining factor is how closely the final price reflects the state of the system during the erroneous pricing interval.

## **D. Impact of Price Corrections**

The impact of price corrections on zonal LBMPs was evaluated for the period July through December 2011. In this evaluation, the average change in LBMP was calculated for

each month using zonal prices in the Real-Time Market. The number of price increases and decreases that resulted from the price corrections was also examined. Tables 4 and 5 present the results of this analysis.

**Table 4**  
**Average Zonal Price Change**  
**July - December 2011**

	Jul	Aug	Sep	Oct	Nov	Dec
<b>CAPITAL</b>	210.36	-0.04	-	-21.87	-	-
<b>CENTRAL</b>	287.54	-0.13	-	-60.81	-	-
<b>DUNWOODIE</b>	164.99	0.05	-	-36.41	-	-
<b>GENESEE</b>	278.24	-0.15	-	-2.32	-	-
<b>HUDSON VALLEY</b>	120.24	0.03	-	-36.50	-	-
<b>LONG ISLAND</b>	74.61	0.16	-	-36.53	-	-
<b>MILLWOOD</b>	174.06	0.06	-	-36.35	-	-
<b>MOHAWK VALLEY</b>	281.34	-0.07	-	-34.61	-	-
<b>NEW YORK CITY</b>	218.49	0.07	-	-36.52	-	-
<b>NORTH</b>	184.90	-0.02	-	-18.32	-	-
<b>WEST</b>	279.41	-0.22	-	-475.96	-	-
<b>HQ</b>	258.72	0.02	-	-21.32	-	-
<b>NPX</b>	124.11	0.00	-	-34.13	-	-
<b>OH</b>	157.70	-0.16	-	241.64	-	-
<b>PJM</b>	137.33	-0.40	-	-150.66	-	-

**Table 5**  
**Zonal Price Change Count (Increase/Decrease)**  
**July - December 2011**

	Jul		Aug		Sep		Oct		Nov		Dec		Total	
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
<b>CAPITAL</b>	34	15	1	1	0	0	0	2	0	0	0	0	35	18
<b>CENTRAL</b>	36	0	1	1	0	0	0	2	0	0	0	0	37	3
<b>DUNWOODIE</b>	19	8	2	0	0	0	0	2	0	0	0	0	21	10
<b>GENESEE</b>	36	0	1	1	0	0	1	1	0	0	0	0	38	2
<b>HUDSON VALLEY</b>	29	15	1	1	0	0	0	2	0	0	0	0	30	18
<b>LONG ISLAND</b>	24	0	2	0	0	0	0	2	0	0	0	0	26	2
<b>MILLWOOD</b>	20	6	2	0	0	0	0	2	0	0	0	0	22	8
<b>MOHAWK VALLEY</b>	36	0	1	1	0	0	0	2	0	0	0	0	37	3
<b>NEW YORK CITY</b>	18	1	2	0	0	0	0	2	0	0	0	0	20	3
<b>NORTH</b>	37	0	1	1	0	0	0	2	0	0	0	0	38	3
<b>WEST</b>	37	0	1	1	0	0	0	2	0	0	0	0	38	3
<b>HQ</b>	14	0	1	1	0	0	0	2	0	0	0	0	15	3
<b>NPX</b>	25	13	1	1	0	0	0	2	0	0	0	0	26	16
<b>OH</b>	14	0	0	1	0	0	1	1	0	0	0	0	15	2
<b>PJM</b>	27	0	1	1	0	0	0	2	0	0	0	0	28	3
<b>Total</b>	<b>406</b>	<b>58</b>	<b>18</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>426</b>	<b>97</b>

As can be seen in Table 4, the average zonal price changes were significantly positive in July, generally slightly negative in August, and negative, with the exception of OH, in October. The July average change across all zones was almost \$200. The average changes across all zones in August and October were -\$0.05 and -\$50 respectively. As shown in Table 5, there were a total of 523 zonal interval prices corrected. Of these, 426 zonal interval prices (81%) were increased and 97 (19%) were decreased.

#### **E. Price Correction Mitigation Initiatives**

The NYISO's efforts to improve initial price accuracy have successfully maintained a high level of price accuracy in 2011. This continued success is due to the NYISO's commitment to identifying pricing problems, thoroughly evaluating these problems, and developing, where possible, solutions to mitigate these problems. These efforts have dramatically reduced pricing errors since 2006.

For the July through December 2011 reporting period the NYISO has initiated a number of efforts – both institutional (e.g., software enhancements) and operational – to revise and develop strategies and procedures to mitigate pricing errors. Among the measures undertaken during the reporting period are:

- The Integrated Source Selection (ISS), an automated system that screens telemetry and switches to alternate metering sources when erroneous values are found, has been enhanced to expand and improve monitoring of generators, lines and PARs.
- On-going operator training has an enhanced curriculum to focus on the identification and response to pricing problems.
- The NYISO has continued to enhance its network model and scheduling systems to improve performance.
- Corrections to the Scarcity Pricing posting logic.

#### **V. Conclusion**

WHEREFORE, the New York Independent System Operator, Inc., respectfully requests that the Commission accept this informational report.

Respectfully submitted,

/s/ Mollie Lampi

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ATTACHMENT A  
RTD Price Correction Report  
July - December 2011

Note to Attachment A:

The counts for the number of intervals corrected as compiled in the RTD Price Correction Report below vary from the totals presented in the body of the report (Tables 1-B, 2 and 3). The compilation of the Attachment A Price Correction Report checks for changes to any of the components of the LBMP (i.e., Reference Bus Price, Congestion or Losses) while the data presented in the body of the report (Tables 1-B, 2 and 3) are based only on changes to the LBMP. On July 22 there were four intervals that had LBMP component corrections (congestion and reference bus) that netted out, thus not changing the LBMP.

## RTD Energy Price Correction Report

[illegible]

ATTACHMENT B

RTD Price Correction Impact

July - December 2011

# CAPITAL

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	108.25	482.54
7/22/2011 13:10:00	109.07	482.59
7/22/2011 13:15:00	109.39	496.21
7/22/2011 13:17:00	177.10	481.75
7/22/2011 13:25:00	172.02	480.44
7/22/2011 13:30:00	170.60	480.43
7/22/2011 13:35:00	122.30	479.98
7/22/2011 13:40:00	493.18	480.43
7/22/2011 13:45:00	493.15	480.43
7/22/2011 13:50:00	173.57	480.87
7/22/2011 13:55:00	163.49	480.44
7/22/2011 14:05:00	492.20	479.11
7/22/2011 14:10:00	492.71	479.98
7/22/2011 14:15:00	492.38	479.54
7/22/2011 14:20:00	489.71	480.41
7/22/2011 14:25:00	492.26	479.96
7/22/2011 14:30:00	492.56	480.85
7/22/2011 14:35:00	492.82	480.85
7/22/2011 14:38:42	495.53	481.30
7/22/2011 14:40:12	291.64	479.98
7/22/2011 14:45:00	492.69	480.43
7/22/2011 14:50:00	492.98	480.41
7/22/2011 14:55:00	495.32	480.00
7/22/2011 15:00:00	495.21	479.59
7/22/2011 15:13:00	115.73	496.33
7/22/2011 15:14:48	120.63	496.26
7/22/2011 15:15:00	122.87	496.19
7/22/2011 15:16:24	122.87	496.19
7/22/2011 15:25:00	154.74	495.13
7/22/2011 15:30:00	145.06	495.78
7/22/2011 15:35:00	147.13	495.42
7/22/2011 15:40:00	141.69	495.28
7/22/2011 15:45:00	140.60	495.54
7/22/2011 15:55:00	138.67	495.12
7/22/2011 15:55:48	292.30	492.30
7/22/2011 16:05:00	495.62	481.78
7/22/2011 16:10:00	174.92	482.24
7/22/2011 16:15:00	170.71	482.22
7/22/2011 16:20:00	273.63	480.05
7/22/2011 16:25:00	327.30	480.04
7/22/2011 16:30:00	460.57	480.07
7/22/2011 16:35:00	340.75	479.63
7/22/2011 16:45:00	240.04	480.05
7/22/2011 16:50:00	180.24	479.61
7/22/2011 16:54:48	155.02	480.05
7/22/2011 16:56:18	141.15	479.17
7/22/2011 17:00:00	109.19	479.15
7/22/2011 17:05:00	109.19	479.15
7/22/2011 17:25:00	108.54	495.63
8/23/2011 13:45:00	38.72	38.80
8/23/2011 14:00:00	38.72	38.56
10/27/2011 9:10:00	64.53	45.02
10/27/2011 9:15:00	69.24	45.02

# CENTRAL

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	94.67	461.95
7/22/2011 13:10:00	97.02	461.16
7/22/2011 13:17:00	166.48	459.04
7/22/2011 13:25:00	160.78	457.33
7/22/2011 13:30:00	159.90	457.74
7/22/2011 13:35:00	111.04	457.74
7/22/2011 13:40:00	159.56	457.30
7/22/2011 13:45:00	159.91	457.30
7/22/2011 13:50:00	159.71	457.74
7/22/2011 13:55:00	151.88	456.89
7/22/2011 14:05:00	171.24	458.67
7/22/2011 14:10:00	166.83	458.63
7/22/2011 14:15:00	170.88	458.63
7/22/2011 14:20:00	240.63	458.15
7/22/2011 14:25:00	176.85	457.70
7/22/2011 14:30:00	177.66	457.26
7/22/2011 14:35:00	171.55	457.26
7/22/2011 14:38:42	108.95	455.48
7/22/2011 14:40:12	191.27	458.19
7/22/2011 14:45:00	171.10	458.19
7/22/2011 14:50:00	164.46	459.04
7/22/2011 14:55:00	107.12	457.33
7/22/2011 15:00:00	107.33	457.41
7/22/2011 16:05:00	109.31	455.11
7/22/2011 16:10:00	142.11	454.26
7/22/2011 16:15:00	138.19	455.11
7/22/2011 16:20:00	252.78	453.90
7/22/2011 16:25:00	303.00	453.86
7/22/2011 16:30:00	427.74	453.06
7/22/2011 16:35:00	316.40	453.50
7/22/2011 16:45:00	221.12	453.46
7/22/2011 16:50:00	166.38	453.46
7/22/2011 16:54:48	142.80	453.90
7/22/2011 16:56:18	129.36	454.79
7/22/2011 17:00:00	97.59	456.08
7/22/2011 17:05:00	97.59	456.08
8/23/2011 13:45:00	37.39	37.44
8/23/2011 14:00:00	37.39	37.09
10/27/2011 9:10:00	63.03	43.62
10/27/2011 9:15:00	145.83	43.62

## DUNWOOD

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	261.48	498.21
7/22/2011 13:10:00	233.29	498.21
7/22/2011 13:15:00	225.00	499.43
7/22/2011 13:17:00	221.44	497.77
7/22/2011 13:25:00	228.25	497.78
7/22/2011 13:30:00	221.60	498.22
7/22/2011 13:35:00	221.22	497.78
7/22/2011 13:40:00	499.23	497.78
7/22/2011 13:45:00	499.38	498.22
7/22/2011 13:50:00	272.87	498.22
7/22/2011 13:55:00	230.07	497.78
7/22/2011 14:05:00	499.17	497.78
7/22/2011 14:10:00	499.35	498.22
7/22/2011 14:15:00	499.17	497.78
7/22/2011 14:20:00	499.07	498.22
7/22/2011 14:25:00	499.14	497.77
7/22/2011 16:05:00	499.58	498.22
7/22/2011 16:20:00	364.00	497.78
7/22/2011 16:25:00	415.61	497.78
7/22/2011 16:35:00	415.17	497.79
7/22/2011 16:45:00	331.70	498.23
7/22/2011 16:50:00	255.90	497.78
7/22/2011 16:54:48	225.15	498.23
7/22/2011 16:56:18	225.04	497.78
7/22/2011 17:00:00	221.06	498.23
7/22/2011 17:05:00	221.06	498.23
7/22/2011 17:25:00	210.13	499.62
8/23/2011 13:45:00	40.56	40.65
8/23/2011 14:00:00	40.56	40.58
10/27/2011 9:10:00	67.53	47.28
10/27/2011 9:15:00	99.85	47.28

# GENESEE

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	93.02	453.89
7/22/2011 13:10:00	94.77	450.45
7/22/2011 13:17:00	161.95	446.57
7/22/2011 13:25:00	156.41	444.89
7/22/2011 13:30:00	155.70	445.73
7/22/2011 13:35:00	108.56	447.51
7/22/2011 13:40:00	155.83	446.62
7/22/2011 13:45:00	156.18	446.62
7/22/2011 13:50:00	155.83	446.62
7/22/2011 13:55:00	148.19	445.78
7/22/2011 14:05:00	166.92	447.11
7/22/2011 14:10:00	162.78	447.51
7/22/2011 14:15:00	166.91	447.95
7/22/2011 14:20:00	235.02	447.46
7/22/2011 14:25:00	172.72	447.02
7/22/2011 14:30:00	173.16	445.68
7/22/2011 14:35:00	167.37	446.13
7/22/2011 14:38:42	106.18	443.90
7/22/2011 14:40:12	186.25	446.17
7/22/2011 14:45:00	166.94	447.06
7/22/2011 14:50:00	160.95	449.24
7/22/2011 14:55:00	104.83	447.56
7/22/2011 15:00:00	104.72	446.32
7/22/2011 16:05:00	106.74	442.22
7/22/2011 16:10:00	141.28	440.50
7/22/2011 16:15:00	137.15	441.33
7/22/2011 16:20:00	252.92	440.16
7/22/2011 16:25:00	306.21	440.11
7/22/2011 16:30:00	437.65	438.44
7/22/2011 16:35:00	320.48	439.77
7/22/2011 16:45:00	219.34	439.72
7/22/2011 16:50:00	161.50	440.16
7/22/2011 16:54:48	138.48	440.16
7/22/2011 16:56:18	125.45	441.05
7/22/2011 17:00:00	94.93	443.66
7/22/2011 17:05:00	94.93	443.66
8/23/2011 13:45:00	36.54	36.55
8/23/2011 14:00:00	36.54	36.24
10/27/2011 9:10:00	61.21	42.18
10/27/2011 9:15:00	27.78	42.18

# HUDSON VALLEY

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	223.71	497.76
7/22/2011 13:10:00	202.82	497.77
7/22/2011 13:15:00	196.84	499.34
7/22/2011 13:17:00	211.66	497.33
7/22/2011 13:25:00	215.57	497.33
7/22/2011 13:30:00	210.26	497.78
7/22/2011 13:35:00	197.49	497.33
7/22/2011 13:40:00	499.07	497.33
7/22/2011 13:45:00	499.07	497.33
7/22/2011 13:50:00	249.43	497.78
7/22/2011 13:55:00	214.73	497.33
7/22/2011 14:05:00	499.01	497.33
7/22/2011 14:10:00	499.19	497.78
7/22/2011 14:15:00	499.01	497.33
7/22/2011 14:20:00	498.60	497.33
7/22/2011 14:25:00	498.97	497.33
7/22/2011 14:30:00	499.13	497.77
7/22/2011 14:35:00	499.17	497.77
7/22/2011 14:38:42	499.47	497.77
7/22/2011 14:40:12	471.93	497.78
7/22/2011 14:45:00	499.17	497.78
7/22/2011 14:50:00	499.20	497.77
7/22/2011 14:55:00	499.27	496.89
7/22/2011 15:00:00	499.17	496.45
7/22/2011 15:13:00	428.44	499.42
7/22/2011 15:14:48	446.68	499.48
7/22/2011 15:15:00	452.40	499.47
7/22/2011 15:16:24	452.40	499.47
7/22/2011 15:40:00	457.17	499.36
7/22/2011 15:45:00	456.98	499.47
7/22/2011 15:55:00	434.46	499.36
7/22/2011 16:05:00	499.47	497.78
7/22/2011 16:10:00	465.54	497.78
7/22/2011 16:15:00	464.43	497.78
7/22/2011 16:20:00	343.57	497.34
7/22/2011 16:25:00	395.97	497.34
7/22/2011 16:35:00	399.12	497.34
7/22/2011 16:45:00	310.61	497.34
7/22/2011 16:50:00	238.67	497.34
7/22/2011 16:54:48	208.93	497.34
7/22/2011 16:56:18	205.46	497.34
7/22/2011 17:00:00	194.29	497.78
7/22/2011 17:05:00	194.29	497.78
7/22/2011 17:25:00	185.85	499.52
8/23/2011 13:45:00	40.56	40.65
8/23/2011 14:00:00	40.56	40.54
10/27/2011 9:10:00	67.59	47.28
10/27/2011 9:15:00	99.96	47.28

# LONG ISLAND

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	333.78	510.30
7/22/2011 13:10:00	413.27	509.82
7/22/2011 13:15:00	337.01	502.27
7/22/2011 13:17:00	367.87	510.24
7/22/2011 13:25:00	358.66	509.78
7/22/2011 13:30:00	357.30	510.23
7/22/2011 13:35:00	351.23	510.23
7/22/2011 13:40:00	503.58	510.23
7/22/2011 13:45:00	504.04	511.57
7/22/2011 13:50:00	402.63	511.57
7/22/2011 13:55:00	361.39	510.67
7/22/2011 14:05:00	504.48	512.00
7/22/2011 14:10:00	504.04	511.12
7/22/2011 14:15:00	504.48	512.01
7/22/2011 14:20:00	507.02	513.36
7/22/2011 14:25:00	504.82	512.47
7/22/2011 16:20:00	500.17	512.85
7/22/2011 16:45:00	466.85	512.85
7/22/2011 16:50:00	449.70	512.85
7/22/2011 16:54:48	448.92	512.85
7/22/2011 16:56:18	448.68	513.30
7/22/2011 17:00:00	447.81	514.20
7/22/2011 17:05:00	447.81	514.20
7/22/2011 17:25:00	447.81	502.94
8/23/2011 13:45:00	41.52	41.68
8/23/2011 14:00:00	41.52	41.68
10/27/2011 9:10:00	69.22	48.81
10/27/2011 9:15:00	101.46	48.81

## MILLWOOD

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	257.67	500.00
7/22/2011 13:10:00	230.29	500.00
7/22/2011 13:15:00	222.29	499.81
7/22/2011 13:17:00	221.03	499.55
7/22/2011 13:25:00	227.49	499.56
7/22/2011 13:30:00	220.99	500.00
7/22/2011 13:35:00	219.05	499.56
7/22/2011 13:40:00	499.85	499.56
7/22/2011 13:45:00	499.84	499.56
7/22/2011 13:50:00	270.77	499.56
7/22/2011 13:55:00	228.84	499.11
7/22/2011 14:05:00	499.84	499.56
7/22/2011 14:10:00	499.99	500.00
7/22/2011 14:15:00	499.84	499.56
7/22/2011 14:20:00	499.77	499.55
7/22/2011 14:25:00	499.83	499.55
7/22/2011 16:20:00	362.79	499.56
7/22/2011 16:25:00	414.69	499.56
7/22/2011 16:35:00	415.01	500.00
7/22/2011 16:45:00	330.31	500.00
7/22/2011 16:50:00	254.68	499.56
7/22/2011 16:54:48	223.96	500.00
7/22/2011 16:56:18	223.41	499.56
7/22/2011 17:00:00	218.52	500.00
7/22/2011 17:05:00	218.52	500.00
7/22/2011 17:25:00	207.86	500.00
8/23/2011 13:45:00	40.60	40.72
8/23/2011 14:00:00	40.60	40.61
10/27/2011 9:10:00	67.41	47.20
10/27/2011 9:15:00	99.68	47.20

# MOHAWK VALLEY

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	108.48	473.14
7/22/2011 13:10:00	108.65	472.32
7/22/2011 13:17:00	173.50	470.17
7/22/2011 13:25:00	168.89	469.33
7/22/2011 13:30:00	167.57	469.75
7/22/2011 13:35:00	121.29	469.75
7/22/2011 13:40:00	171.22	469.75
7/22/2011 13:45:00	171.72	469.31
7/22/2011 13:50:00	171.14	469.75
7/22/2011 13:55:00	160.74	469.33
7/22/2011 14:05:00	182.41	469.78
7/22/2011 14:10:00	177.80	470.20
7/22/2011 14:15:00	182.22	469.75
7/22/2011 14:20:00	254.25	469.72
7/22/2011 14:25:00	189.20	469.28
7/22/2011 14:30:00	208.77	469.28
7/22/2011 14:35:00	203.00	469.28
7/22/2011 14:38:42	144.60	468.83
7/22/2011 14:40:12	221.30	469.31
7/22/2011 14:45:00	202.09	468.86
7/22/2011 14:50:00	196.20	469.28
7/22/2011 14:55:00	142.36	468.44
7/22/2011 15:00:00	141.83	467.61
7/22/2011 16:05:00	134.89	468.00
7/22/2011 16:10:00	177.21	467.58
7/22/2011 16:15:00	173.48	467.56
7/22/2011 16:20:00	267.48	466.31
7/22/2011 16:25:00	319.83	466.73
7/22/2011 16:30:00	448.15	465.90
7/22/2011 16:35:00	332.62	466.34
7/22/2011 16:45:00	234.88	466.31
7/22/2011 16:50:00	176.66	466.31
7/22/2011 16:54:48	152.04	466.76
7/22/2011 16:56:18	139.10	466.76
7/22/2011 17:00:00	108.65	467.17
7/22/2011 17:05:00	108.65	467.17
8/23/2011 13:45:00	38.38	38.43
8/23/2011 14:00:00	38.38	38.19
10/27/2011 9:10:00	63.84	44.58
10/27/2011 9:15:00	94.54	44.58

## NEW YORK CITY

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	261.45	500.00
7/22/2011 13:10:00	233.69	500.00
7/22/2011 13:15:00	225.58	500.00
7/22/2011 13:17:00	222.25	500.00
7/22/2011 13:25:00	229.04	500.00
7/22/2011 13:30:00	219.85	500.00
7/22/2011 13:35:00	219.41	500.00
7/22/2011 13:40:00	500.01	500.00
7/22/2011 13:50:00	273.50	500.00
7/22/2011 13:55:00	230.81	500.00
7/22/2011 14:10:00	499.99	500.00
7/22/2011 16:20:00	414.14	500.00
7/22/2011 16:35:00	466.36	500.00
7/22/2011 16:50:00	256.73	500.00
7/22/2011 16:54:48	225.72	500.00
7/22/2011 16:56:18	224.77	500.00
7/22/2011 17:00:00	218.99	500.00
7/22/2011 17:05:00	218.99	500.00
7/22/2011 17:25:00	207.44	500.00
8/23/2011 13:45:00	40.85	40.94
8/23/2011 14:00:00	40.85	40.91
10/27/2011 9:10:00	68.03	47.69
10/27/2011 9:15:00	100.38	47.69

# NORTH

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	87.06	424.80
7/22/2011 13:10:00	88.94	422.77
7/22/2011 13:17:00	152.90	421.64
7/22/2011 13:25:00	147.96	420.89
7/22/2011 13:30:00	147.30	421.71
7/22/2011 13:35:00	102.18	421.26
7/22/2011 13:40:00	146.98	421.26
7/22/2011 13:45:00	147.30	421.26
7/22/2011 13:50:00	146.98	421.26
7/22/2011 13:55:00	139.92	420.89
7/22/2011 14:05:00	157.13	420.89
7/22/2011 14:10:00	153.24	421.26
7/22/2011 14:15:00	156.96	421.26
7/22/2011 14:20:00	221.92	422.53
7/22/2011 14:25:00	163.60	423.42
7/22/2011 14:30:00	164.34	422.97
7/22/2011 14:35:00	158.52	422.53
7/22/2011 14:38:42	101.18	422.97
7/22/2011 14:40:12	176.04	421.71
7/22/2011 14:45:00	157.31	421.26
7/22/2011 14:50:00	151.06	421.64
7/22/2011 14:55:00	98.58	420.89
7/22/2011 15:00:00	98.47	419.70
7/22/2011 16:05:00	96.30	421.33
7/22/2011 16:10:00	99.00	421.40
7/22/2011 16:15:00	98.36	421.78
7/22/2011 16:20:00	235.61	421.10
7/22/2011 16:25:00	283.72	422.36
7/22/2011 16:30:00	400.98	421.17
7/22/2011 16:35:00	164.12	420.28
7/22/2011 16:40:00	175.02	419.91
7/22/2011 16:45:00	177.44	421.54
7/22/2011 16:50:00	154.67	421.54
7/22/2011 16:54:48	132.62	421.54
7/22/2011 16:56:18	119.90	421.54
7/22/2011 17:00:00	89.89	420.14
7/22/2011 17:05:00	89.89	420.14
8/23/2011 13:45:00	36.06	36.14
8/23/2011 14:00:00	36.06	35.95
10/27/2011 9:10:00	56.95	40.74
10/27/2011 9:15:00	61.16	40.74

# WEST

Time Stamp	Original LBMP	Final LBMP
7/22/2011 13:05:00	87.52	427.04
7/22/2011 13:10:00	88.94	422.77
7/22/2011 13:17:00	152.10	419.41
7/22/2011 13:25:00	146.72	417.33
7/22/2011 13:30:00	146.07	418.15
7/22/2011 13:35:00	102.08	420.82
7/22/2011 13:40:00	146.36	419.48
7/22/2011 13:45:00	146.53	419.04
7/22/2011 13:50:00	146.36	419.48
7/22/2011 13:55:00	139.18	418.67
7/22/2011 14:05:00	157.13	420.89
7/22/2011 14:10:00	153.24	421.26
7/22/2011 14:15:00	157.62	423.04
7/22/2011 14:20:00	221.69	422.08
7/22/2011 14:25:00	162.74	421.19
7/22/2011 14:30:00	162.78	418.97
7/22/2011 14:35:00	157.52	419.86
7/22/2011 14:38:42	99.58	416.30
7/22/2011 14:40:12	176.04	421.71
7/22/2011 14:45:00	157.81	422.60
7/22/2011 14:50:00	152.34	425.20
7/22/2011 14:55:00	99.00	422.67
7/22/2011 15:00:00	99.00	421.92
7/22/2011 16:05:00	95.10	415.11
7/22/2011 16:10:00	98.23	412.52
7/22/2011 16:15:00	97.88	414.22
7/22/2011 16:20:00	160.59	412.68
7/22/2011 16:25:00	165.45	412.60
7/22/2011 16:30:00	177.45	410.98
7/22/2011 16:35:00	166.76	412.75
7/22/2011 16:40:00	180.02	409.73
7/22/2011 16:45:00	157.34	412.23
7/22/2011 16:50:00	151.74	413.56
7/22/2011 16:54:48	130.11	413.56
7/22/2011 16:56:18	118.26	415.78
7/22/2011 17:00:00	89.80	419.70
7/22/2011 17:05:00	89.80	419.70
8/23/2011 13:45:00	35.44	35.48
8/23/2011 14:00:00	35.44	34.96
10/27/2011 9:10:00	60.97	41.57
10/27/2011 9:15:00	974.09	41.57

HQ		
Time Stamp	Original LBMP	Final LBMP
7/22/2011 16:05:00	97.65	427.11
7/22/2011 16:10:00	100.40	426.73
7/22/2011 16:15:00	99.72	427.11
7/22/2011 16:20:00	238.58	426.42
7/22/2011 16:25:00	287.00	427.24
7/22/2011 16:30:00	405.62	426.04
7/22/2011 16:35:00	166.67	425.60
7/22/2011 16:40:00	178.16	425.22
7/22/2011 16:45:00	179.56	426.42
7/22/2011 16:50:00	156.46	426.42
7/22/2011 16:54:48	134.16	426.42
7/22/2011 16:56:18	121.29	426.42
7/22/2011 17:00:00	91.22	426.35
7/22/2011 17:05:00	91.22	426.35
8/23/2011 13:45:00	35.88	36.00
8/23/2011 14:00:00	35.88	35.80
10/27/2011 9:10:00	62.59	43.62
10/27/2011 9:15:00	67.29	43.62

# NPX

Time Stamp	Original LBMP	Final LBMP
7/22/2011 14:05:00	492.20	479.11
7/22/2011 14:10:00	492.55	479.54
7/22/2011 14:15:00	492.21	479.09
7/22/2011 14:20:00	489.25	479.52
7/22/2011 14:25:00	492.09	479.52
7/22/2011 14:30:00	492.21	479.96
7/22/2011 14:35:00	492.49	479.96
7/22/2011 14:38:42	495.42	480.85
7/22/2011 14:40:12	345.94	479.54
7/22/2011 14:45:00	492.52	479.98
7/22/2011 14:50:00	492.82	479.96
7/22/2011 14:55:00	495.21	479.56
7/22/2011 15:00:00	495.00	478.70
7/22/2011 15:13:00	274.77	496.08
7/22/2011 15:14:48	286.54	496.09
7/22/2011 15:15:00	290.54	496.01
7/22/2011 15:16:24	290.54	496.01
7/22/2011 15:25:00	354.76	494.90
7/22/2011 15:30:00	372.08	495.57
7/22/2011 15:35:00	347.60	495.21
7/22/2011 15:40:00	301.68	495.07
7/22/2011 15:45:00	301.13	495.33
7/22/2011 15:55:00	288.55	495.01
7/22/2011 15:55:48	416.93	492.30
7/22/2011 16:05:00	495.52	481.33
7/22/2011 16:10:00	321.48	481.35
7/22/2011 16:15:00	318.93	481.33
7/22/2011 16:20:00	304.26	480.05
7/22/2011 16:25:00	356.06	480.04
7/22/2011 16:30:00	479.75	480.07
7/22/2011 16:35:00	364.04	480.07
7/22/2011 16:45:00	271.76	480.05
7/22/2011 16:50:00	207.11	480.05
7/22/2011 16:54:48	179.95	480.05
7/22/2011 16:56:18	171.57	479.17
7/22/2011 17:00:00	150.82	478.70
7/22/2011 17:05:00	150.82	478.70
7/22/2011 17:25:00	146.23	495.53
8/23/2011 13:45:00	39.12	39.21
8/23/2011 14:00:00	39.12	39.03
10/27/2011 9:10:00	65.53	45.80
10/27/2011 9:15:00	94.32	45.80

OH		
Time Stamp	Original LBMP	Final LBMP
7/22/2011 16:05:00	90.06	395.56
7/22/2011 16:10:00	89.80	392.98
7/22/2011 16:15:00	89.82	394.67
7/22/2011 16:20:00	144.72	393.62
7/22/2011 16:25:00	144.37	393.52
7/22/2011 16:30:00	143.07	391.50
7/22/2011 16:35:00	144.27	393.71
7/22/2011 16:40:00	142.82	390.71
7/22/2011 16:45:00	144.73	393.17
7/22/2011 16:50:00	144.91	394.95
7/22/2011 16:54:48	124.12	394.50
7/22/2011 16:56:18	112.59	395.83
7/22/2011 17:00:00	85.63	400.18
7/22/2011 17:05:00	85.63	400.18
8/23/2011 14:00:00	34.26	33.93
10/27/2011 9:10:00	58.70	40.04
10/27/2011 9:15:00	-461.90	40.04

PJM		
Time Stamp	Original LBMP	Final LBMP
7/22/2011 14:05:00	225.80	445.33
7/22/2011 14:10:00	219.28	445.28
7/22/2011 14:15:00	226.39	445.28
7/22/2011 14:20:00	296.13	443.01
7/22/2011 14:25:00	237.32	442.56
7/22/2011 14:30:00	393.87	441.23
7/22/2011 14:35:00	392.05	440.78
7/22/2011 14:38:42	377.49	436.78
7/22/2011 14:40:12	399.84	446.17
7/22/2011 14:45:00	405.30	476.87
7/22/2011 14:50:00	395.78	445.68
7/22/2011 14:55:00	378.29	442.67
7/22/2011 15:00:00	374.65	445.43
7/22/2011 16:05:00	297.59	474.67
7/22/2011 16:10:00	381.32	436.94
7/22/2011 16:15:00	380.72	437.33
7/22/2011 16:20:00	284.03	436.17
7/22/2011 16:25:00	322.37	435.67
7/22/2011 16:30:00	409.94	434.90
7/22/2011 16:35:00	323.96	435.78
7/22/2011 16:40:00	424.84	433.19
7/22/2011 16:45:00	259.04	434.84
7/22/2011 16:50:00	205.25	435.73
7/22/2011 16:54:48	179.74	436.61
7/22/2011 16:56:18	176.64	439.27
7/22/2011 17:00:00	172.85	476.49
7/22/2011 17:05:00	172.85	476.49
8/23/2011 13:45:00	36.43	36.48
8/23/2011 14:00:00	36.43	35.58
10/27/2011 9:10:00	64.97	45.10
10/27/2011 9:15:00	326.54	45.10

## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of Rule 2010 of the Rules of Practice and Procedure, 18 C.F.R. §385.2010.

Dated at Rensselaer, NY this 31<sup>st</sup> day of January, 2012.

/s/ Joy A. Zimmerlin

Joy A. Zimmerlin  
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