NEW YORK INDEPENDENT SYSTEM OPERATOR

10 Krey Boulevard Rensselaer, NY 12144

July 29, 2011

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. ER06-1014-010
Tenth Price Validation Informational Report

Dear Ms. Bose:

Pursuant to Ordering Paragraph (B) of the Commission's January 14, 2006 order ("January 14 Order") in the above-captioned proceeding,[1] 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 January 1, 2011 through June 30, 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 the first half of 2011 the correction rate showed a slight increase, with the percentage of hours corrected moving up to 0.4%. This increase in price corrections was due to issues related to the deployment of Enhanced Interregional Transaction Coordination (EITC) code, which will allow for 15-minute scheduling of external transactions.[2]

[1] *New York Independent System Operator, Inc.*, 116 FERC ¶ 61,037 (2006).

[2] See *New York Independent System Operator*, Order Conditionally Accepting Proposed Tariff Revisions and Granting Waiver, Docket No. ER11-2547-000, 134 FERC 61,186 (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 (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 (July 21, 2011).

I. Background

In its January 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 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 during the preceding six months to reduce or eliminate the types of pricing errors that occurred.

This is the tenth Report submitted in compliance with the January 14 Order.[3] This Report details all of the price corrections the NYISO made for the period January 1, 2011 through June 30, 2011 in its Real-Time Market.[4] 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,[5] 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 January 1, 2011 through June 30, 2011.

II. Communications and Correspondence

Communications regarding this filing should be directed to:

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[3] The NYISO submitted the nine 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, and January 28, 2011 respectively.

[4] 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.

[5] RTD intervals normally occur every five minutes.

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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.

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.[6] 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.

[6] *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.

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.

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 January through June 2011

The NYISO has conducted an analysis of its Real-Time Market from January through June 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
January - June 2011

2011	Hours		
	Corrected	Total	% Corrected
January	1	744	0.13%
February	0	672	0.00%
March	1	744	0.13%
April	0	720	0.00%
May	9	744	1.21%
June	4	720	0.56%
Total	**15**	**4,344**	**0.35%**

As shown above, the NYISO corrected prices in only 0.35% of the hours in the first 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, two months, February and April, had no price corrections. The months of May and June had nearly all of the price corrections. It was during this period when the code for the EITC was deployed. This code will support the scheduling of external transactions every 15-minutes, which commences in July 2011. With this deployment there were a number of issues encountered that resulted in price corrections.

Table 1-B below provides a compilation, by month, of the number of RTD intervals corrected from January through June 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 require correction.

Table 1-B
RTD Intervals Corrected
January - June 2011

2011	Intervals		
	Corrected	Total	% Corrected
January	1	8,956	0.01%
February	0	8,085	0.00%
March	1	8,928	0.01%
April	0	8,671	0.00%
May	37	8,972	0.41%
June	12	8,760	0.14%
Total	**51**	**52,372**	**0.10%**

For the period January through June 2011 there were 51 RTD intervals corrected for a correction rate of 0.1%. Two months (February and April) had no corrections. The highest interval correction rate of 0.41% occurred in May; June had a correction rate of 0.14%, and the remaining four months had correction rates of 0.0% or 0.1%. All but two intervals corrected were related to the EITC deployment described above.

The price corrections from January through June 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, roughly one-third (35%) of the RTD interval price corrections in the first half of 2011 were Type I - Calculation Errors that occurred in May. All of these errors were caused by posting problems that resulted in the failure to properly apply special pricing rules for external interfaces. The remaining intervals were Type II errors. On an hourly basis, only 20% of the corrections were for Type I errors.

Table 2
RTD Price Correction Error Types
January - June 2011

2011	Intervals		Hours	
	Type I	Type II	Type I	Type II
January	-	1	-	1
February	-	-	-	-
March	-	1	-	1
April	-	-	-	-
May	18	19	3	6
June	-	12	-	4
Total	**18**	**33**	**3**	**12**

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

Table 3
January - June 2011
RTD Interval Price Corrections by Reason

Reason	Jan	Feb	Mar	Apr	May	Jun	Total
1- PostingError	-	-	-	-	18	-	**18**
2- Indeterminacy / Penalty orShift FactorTrade-Off	-	-	-	-	-	-	**0**
3- DataError-Static	-	-	-	-	-	-	**0**
4- ComputerSystemFailure	-	-	-	-	-	1	**1**
5 - Software Error	1	-	-	-	19	-	**20**
6 - Telemetry	-	-	1	-	-	6	**7**
7- Prices Inconsistentw/Dispatch/NoMarginalUnit	-	-	-	-	-	-	**0**
8- OperatorInput	-	-	-	-	-	5	**5**
Total	**1**	**0**	**1**	**0**	**37**	**12**	**51**

January Price Corrections

There was one price correction in January 2011. On January 1, a software error resulted in an incorrect generator schedule in a single interval.

February Price Corrections

There were no price corrections in February 2011.

March Price Corrections

There was one price correction in March 2011. On March 5 a large Long Island generator experienced a metering error that significantly altered dispatch for a single interval.

April Price Corrections

There were no price corrections in April 2011.

May Price Corrections

May 2011 had five days with RTD price corrections totaling thirty-seven affected intervals over nine hours. Most of the corrections were related to the deployment of the software to be used for the quarter hour scheduling of external transactions.

On May 17, 2011 there were three separate issues. In HB 17 there was a single interval for which RTD Ancillary Services prices incorrectly posted as $0.00. In HB 19 incorrect external schedules were used for two intervals. Finally, for HB 22 on May 17 a posting error resulted in erroneous external prices for the entire hour.

May 18 had three intervals corrected in HB 11 & 12 due to problems associated with transaction schedule adjustments that did not post in a timely manner. On May 19 there were six intervals corrected in HB 06 & 07 due to posting errors on an external interface.

The May 25 price corrections, spanning twelve intervals across two hours, were due to a software problem that resulted in incorrect outage schedules in the scheduling systems. The May 27 price correction was due to a software error that improperly changed a unit's UOL when its derate was extended.

June Price Corrections

In June 2011 there were four days with price corrections totaling twelve intervals and four hours. The first of the price corrections on June 6 spanned four intervals in one hour and was due to an operator error. The second price correction, on June 7, impacted pricing in one interval because of a load forecaster error that resulted in a significant load increase. The third June price correction, totaling six intervals in a single hour was on June 9 and was the result of a metering error on a large New York City generator that impacted the load forecast. June 28 had one interval corrected due to a software error that caused an incorrect limit to be used.

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 a preceding or subsequent interval's price
2. Average the preceding and subsequent interval prices
3. Replace with a preceding interval's advisory price
4. Substitute erroneous LBMP with price from a similar bus
5. Recalculate prices
6. Replace with another market's prices (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 January through June 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
January - June 2011

	Jan	Feb	Mar	Apr	May	Jun
CAPITAL	118.97	-	($5.02)	-	$78.62	($113.13)
CENTRAL	111.53	-	($4.77)	-	($34.52)	($51.80)
DUNWOODIE	122.05	-	($5.35)	-	($300.74)	($440.78)
GENESEE	106.00	-	($4.53)	-	($44.09)	($51.74)
HUDSON VALLEY	122.20	-	($5.31)	-	($260.90)	($364.31)
LONG ISLAND	126.06	-	($1,539.06)	-	($292.96)	($446.47)
MILLWOOD	122.12	-	($5.33)	-	($295.62)	($433.89)
MOHAWK VALLEY	115.83	-	($4.93)	-	($14.23)	($75.68)
NEW YORK CITY	122.61	-	($5.38)	-	($283.76)	($457.86)
NORTH	112.43	-	($4.58)	-	$42.43	($50.58)
WEST	100.82	-	($4.31)	-	($96.83)	($48.09)
HQ	111.33	-	($4.63)	-	$40.89	($39.82)
NPX	120.05	-	($5.13)	-	($23.49)	($42.58)
OH	97.36	-	($4.15)	-	($70.01)	($46.79)
PJM	110.12	-	($2.82)	-	($129.75)	($38.80)

Table 5
Zonal Price Change Count (Increase/Decrease)
January - June 2011

	Jan		Feb		Mar		Apr		May		Jun		Total	
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
CAPITAL	1	0	0	0	0	1	0	0	16	3	1	11	18	15
CENTRAL	1	0	0	0	0	1	0	0	15	4	2	10	18	15
DUNWOODIE	1	0	0	0	0	1	0	0	5	14	0	12	6	27
GENESEE	1	0	0	0	0	1	0	0	15	4	2	10	18	15
HUDSON VALLEY	1	0	0	0	0	1	0	0	5	14	1	11	7	26
LONG ISLAND	1	0	0	0	0	1	0	0	5	14	0	12	6	27
MILLWOOD	1	0	0	0	0	1	0	0	5	14	1	11	7	26
MOHAWK VALLEY	1	0	0	0	0	1	0	0	14	5	1	11	16	17
NEW YORK CITY	1	0	0	0	0	1	0	0	5	14	1	11	7	26
NORTH	1	0	0	0	0	1	0	0	15	4	2	10	18	15
WEST	1	0	0	0	0	1	0	0	10	9	2	10	13	20
HQ	1	0	0	0	0	1	0	0	30	7	0	6	31	14
NPX	1	0	0	0	0	1	0	0	20	11	0	6	21	18
OH	1	0	0	0	0	1	0	0	13	7	2	10	16	18
PJM	1	0	0	0	0	1	0	0	15	16	1	5	17	22
Total	15	0	0	0	0	15	0	0	188	140	16	146	219	301

As can be seen in Table 4, the average zonal price changes were positive in January and negative in March, May and June. The January average change was about $115. The average changes in March, May and June were -$107, -$112 and -$180 respectively. As shown in Table 5, there were a total of 520 zonal interval prices corrected. Of these, 219 zonal interval prices (42.1%) were increased and 301 (57.9%) 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 January through June 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.

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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