MEMORANDUM

TO: **NYISO Market Participants**

FROM: **Rick Gonzales**

SUBJECT: **NYISO Provision of Analysis and Data to Market Participants, FERC Docket No. ER09-405 (Tariff Waiver Request Stemming From Waldwick-Ramapo PAR Settings)**

DATE: **March 11, 2009**

Pursuant to the February 9, 2009 order of the Federal Energy Regulatory Commission ("FERC") in Docket No. ER09-405-000 (the "Order"),[1] the NYISO is today providing its market participants with analysis and data, and other related information, as described and explained in this memorandum. This information, posted on the NYISO website at http://www.nyiso.com/public/market_data/reports/waldwickpar.jsp,[2] is designed to facilitate discussions among NYISO and its market participants over the next 60 days (as detailed in paragraph 17 of the Order).

If you have any questions about this memorandum or the referenced analysis and data, please contact Elaine Robinson (erobinson@nyiso.com, 518-356-6178).

I. INTRODUCTION

This proceeding involves the NYISO's December 11, 2008 request to FERC (the Waiver Request"), supported by the affidavit of the NYISO's Independent Market Advisor, David B. Patton, Ph.D,[3] for a limited waiver of tariff provisions necessitated by the modeling values

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1 The Order is posted on the NYISO website at: http://www.nyiso.com/public/webdocs/documents/regulatory/orders/2009/02/FERC_Ordr_NYISO_Rqst_lmtd_Trff_Wvr_2_9_09.pdf.

2 The webpage is titled "Data Postings Associated with Waldwick PAR Issue."

3 The waiver request (with Dr. Patton's affidavit (the "Patton Affidavit")) is posted on the NYISO website at:

(continued...)

incorrectly introduced into the NYISO's Security Constrained Unit Commitment ("SCUC") software for the Waldwick-Ramapo Phase Angle Regulators ("PARs") for the days of January 11, 2008 and January 14-24, 2008 (collectively, the "Waiver Period").

The Order issued by FERC in response to the Waiver Request instituted a three-part effort:

- under paragraph 17 of the Order, the NYISO is today providing market participants with the specified analysis and data, and related information, will discuss with them whether any course of restitution is feasible, and will report the results of those discussions to FERC on May 11, 2009;

- under paragraph 18 of the Order, the NYISO is filing today a report to FERC regarding the timing and means by which the NYISO informed FERC and its market participants about the PAR issue; and

- under paragraph 19 of the Order, the NYISO has begun the development of procedures, and will be initiating discussions with its market participants, regarding: (i) early notification of stakeholders and stakeholder committees of possible errors affecting its markets; (ii) timely follow-up and detailed explanations regarding errors; and (iii) greater transparency and heightened responsiveness to the stakeholders and appropriate committees; the NYISO will file with FERC within 180 days of the Order either proposed tariff changes, or a status report on the development of such procedures.

II. OVERVIEW OF MEMORANDUM

In this memorandum, the NYISO:

- lists and explains the analysis, documents and data being posted on the NYISO's website and provided to individual market participants in response to paragraph 17 of the Order (see **Section III** of this memorandum, and the "checklist" table in **Attachment 1** hereto);

- provides, in response to paragraph 17 of the Order, information regarding what the erroneous inputs were (see **Section IV** of this memorandum);

- offers the NYISO's preliminary views on the feasibility of restitution (see **Section V** of this memorandum);

- describes the proposed process for undertaking the discussions required by paragraph 17 (see **Section VI** of this memorandum); and

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http://www.nyiso.com/public/webdocs/documents/regulatory/filings/2008/12/nyiso_rqst_lmtd_wvr_12_11_08.pdf.

- discusses the proposed process for the development of transparency procedures as discussed in paragraph 19 of the Order (see **Section VII** of this memorandum).

III. ANALYSIS, DOCUMENTS AND DATA PROVIDED PURSUANT TO PARAGRAPH 17 OF THE ORDER

A. Delivery methodologies

The information called for in paragraph 17 of the Order is being delivered to market participants via two methods: (i) detailed numerical data and analysis that is not competitively sensitive to individual market participants is being delivered via posting on an OASIS web page (at http://www.nyiso.com/public/market_data/reports/waldwickpar.jsp) dedicated to the PAR issues (the "PAR Issues webpage"); and (ii) information on how the $3.5 million in additional congestion rents and $10.5 million[4] in balancing market residuals estimated in the Waiver Request and the Patton Affidavit as resulting from the PAR settings are allocated to individual NYISO market participants is being provided separately by e-mail(s) to each entity's main contact.

B. Data Relating to Analysis Reflected in the Patton Affidavit

During the Waiver Period, incorrect inputs were used in the Day-Ahead Market ("DAM") modeling software – the SCUC – relating to the settings of the PARs, which affected modeling of flows across the Central-East interface. The use of incorrect inputs led SCUC to estimate modeled flows that were an average of 680 MW lower than the actual flows over the Central-East interface. This led SCUC to schedule flows across the Central-East interface that were not feasible and resulted in certain additional costs being incurred, including congestion rents and balancing market residuals.

1. Information Regarding Increased Congestion Rents and Negative Balancing Market Residuals

a. Hourly Breakdown of Calculation of Increased Congestion Rents and Increased Balancing Market Residuals (posted on PAR Issues Webpage)

The SCUC's over-scheduling in the DAM caused excess congestion revenue to be collected in the DAM. The amount of congestion revenue collected in the DAM for a constrained interface is proportional to the flow over the interface. Hence, when the flows over an interface are scheduled in the DAM at levels that exceed the physical capability of the interface, more congestion revenue is collected as a result. Dr. Patton estimated that the excess congestion rents due to the over-scheduling equaled $3.5 million during the Waiver Period.

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[4] The balancing market residuals were estimated in the Patton Affidavit as totaling $10.9 million, but further analysis (using information not available at the time the affidavit was prepared) by Dr. Patton, as discussed below, has reduced the estimate to $10.5 million.

Whenever DAM schedules are infeasible in the real-time market ("RTM") operation, the NYISO must redispatch generation in the RTM to reduce the flows over the relevant interfaces to feasible operating levels. That is what occurred in this instance. The redispatch was effected in real-time by increasing generation in eastern New York and decreasing generation in western New York relative to the DAM schedules. The costs of this redispatch were recovered through negative balancing market residuals. Dr. Patton now estimates that this led to $10.5 million[5] in negative balancing market residuals. These costs are higher than the excess congestion revenues collected in the DAM because the congestion price levels in the RTM are higher than in the DAM. If the congestion price differences in the DAM and RTM were the same, the excess congestion revenue in the DAM would equal the balancing market residuals. However, because the price differences are larger in the RTM, the balancing market residuals exceed the excess congestion revenue collected in the DAM, resulting in a net cost of approximately $7.0 million.[6]

As requested by intervenors in the Waiver Request proceeding, the ISO is posting on the PAR Issues website Excel spreadsheets providing an hourly breakdown of Dr. Patton's calculation of these estimates. The spreadsheets also provide interface flow, limit and scheduling information, as requested by intervenors.[7] Also posted with the Excel spreadsheets is

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5 This figure differs from the $10.9 million reported in the affidavit, because it reflects the use of more accurate data that was unavailable when the affidavit was prepared. Specifically, the unused DAM interface capability for the Central-East Interface was not available in the SCUC outputs for January 11 and January 15, because the constraint was not active in the DAM on those days. In the affidavit, the $10.9 million was calculated assuming that the unused DAM interface capability was 0 MW for the Central-East Interface on those days. This assumption provided an upper bound on the actual balancing congestion residual shortfalls attributable to the erroneous PAR flows. The $10.5 million was calculated using estimates of the unused DAM interface capability which were provided by the NYISO after the affidavit was filed.

6 This figure differs from the $7.4 million figure reported in the affidavit, because it depends on the negative balancing market residual, which was revised (as discussed above) from $10.9 million to $10.5 million.

7 The spreadsheets are in an Excel document posted on the PAR Issues webpage under the heading "Potomac Economics Hourly Detail Analysis."

For the Central-East Interface and the West-Central Interface, the scheduling algorithm of the SCUC model uses a representation of flows and limits that excludes a subset of non-price sensitive generation and loads that affect the flows across the interface. Consequently, the flows and limits outputted by SCUC are not representative of the flows and limits that would be implied by scheduling in the DAM. For these reasons, Dr. Patton's estimates are based on the differentials between DAM flows and DAM limits rather than the flows and limits that would be implied by scheduling in the DAM. Hence, the differentials rather than the DAM flows and DAM limits are included in the spreadsheet.

a document explaining the columnar data, and how they were utilized to make the calculations.[8]

b. Allocation of Excess Congestion Rents and Negative Balancing Market Residuals (Provided in E-mails to Individual Market Participants)

Each affected NYISO market participant will receive an e-mail today attaching an Excel spreadsheet stating its allocation of the excess congestion rents. Each affected NYISO market participant will receive an e-mail today attaching an Excel spreadsheet stating its allocation of the negative balancing market residuals. Each spreadsheet shows the total (NYISO-wide) amounts of both congestion rents and residuals, as well as the entity's particular share of those receipts/payments.[9]

This methodology of delivery is consistent with the NYISO's obligations under Section 6.3 of the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff") and Section 4.0 of the NYISO's Code of Conduct (Attachment F to the OATT).

2. Information Regarding LBMPs and TCCs

By way of background, and as described in the Patton Affidavit, over-scheduling of flows across the Central-East Interface had several direct and indirect market effects. First, the over-scheduling contributed to reducing day-ahead congestion-related price differences between locations early in the Waiver Period. Second, the over-scheduling contributed to a reduced level of commitment in eastern New York, which led to increased real-time congestion-related price differences between locations. Market participants responded to the inconsistency between the DAM and RTM by engaging in purchases and sales that increased scheduled flows across the Central-East interface in the DAM. These changes in day-ahead purchases and sales in the DAM continued for several days after the inputs were corrected on January 25, resulting in several days when congestion across the Central-East interface in the DAM substantially exceeded congestion in the RTM.

The PAR input error tended to increase DAM-scheduled flows from western New York to eastern New York and to reduce the congestion between the areas. The correct PAR inputs would have led to additional congestion in the DAM early in the Waiver Period across the Central-East interface, as generally indicated in "simulated" DAM results (*i.e.*, using "correct" PAR modeling for the Waiver Period) reviewed by Dr. Patton.

However, the resulting price differences from the simulations overstate the effect of using the correct inputs, because the simulation does not reflect a "but for" world. Most significantly,

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8 The explanation is in a document posted on the PAR Issues webpage under the heading "Potomac Economics Hourly Detail Analysis."

9 The methodology for allocating excess congestion rents is specified in Attachment N of the NYISO OATT. The methodology for allocating balancing market residuals is specified in Schedule 1 of the NYISO OATT.

the simulations reflects the changes in participant behavior that were prompted by the error (*i.e.*, the increased purchases in eastern New York and sales in western New York). These responses by the market participants increased the congestion across Central East in the simulation and, therefore, the simulation overstates the congestion that would have occurred if the erroneous inputs had never been used.

The responses by market participants continued to affect the market after the Waiver Period ended on January 24 because market participants did not know that the inputs were corrected beginning with the DAM for January 25. Hence, day-ahead congestion across the Central-East interface was inflated as the participant response to the prior real-time congestion continued for several days following January 24.[10]

The incorrect PAR modeling also affected the real-time market by changing the commitment and availability of generators. When generator commitments change, the physical supply available to the RTM changes. This change affected congestion patterns and prices during the Waiver Period and in the subsequent several days. During the Waiver Period, the SCUC over-scheduled flows from western to eastern New York, causing a reduction in the commitment of generation in eastern New York compared to the commitments that would have been made absent the error. This is evident from the fact that less capacity in eastern New York was committed in the actual DAM than in the DAM simulations.[11] This likely contributed to increased congestion costs across the Central-East interface in the RTM. Congestion in the RTM exceeded the congestion in the DAM by an average of $24/MWh from the Central Zone to the Capital Zone during the Waiver Period.

Finally, the reduced day-ahead congestion across the Central-East interface led to two notable changes in the pattern of congestion during the Waiver Period. First, the over-scheduling of the Central-East interface was limited by the Total East interface, which also limits flows between western New York and eastern New York.[12] Hence, a large share of the congestion

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10 A period of four days after the Waiver Period was used by Dr. Patton because he judged it to be a reasonable amount of time for market participants to adapt to the reversal in the pattern of LBMPs. Since January 25 was the first day after the Waiver Period where DAM congestion from west-to-east exceeded RTM congestion, many market participants likely judged this to be an anomaly rather than a recognizable reversal in the pattern. However, after January 27, with two additional days of DAM congestion from west-to-east exceeding RTM congestion, it is likely that market participants adjusted downward their expectations of RTM congestion. Their next opportunity to use this information in their DAM bids was at 5 a.m. on January 28 when the bid window was closing for the DAM auction with a market date of January 29.

11 In the DAM simulations, an additional 138 MW was committed in the Capital Zone and an additional 191 MW was committed in other portions of eastern New York.

12 The Total East interface is a transmission constraint that limits the total volume of imports to the six zones in eastern New York from western New York and from the PJM control area, excluding the Neptune Scheduled Line.

between western New York and eastern New York in the DAM was due to the Total East interface rather than the Central-East interface. Second, over-scheduling of the Central-East interface was also limited by the West-Central interface, which experienced substantially more congestion in the actual DAM than in the DAM simulations or in the RTM during the Waiver Period. A byproduct of restricting west-to-east power flows across the West-Central interface and the Total East interface was to reduce flows and congestion across the Central-East interface. These changes in the pattern of congestion mitigated the impact on clearing prices and commitment from using the incorrect inputs.

Based on Dr. Patton's analyses, the use of incorrect inputs led to elevated day-ahead prices in western New York and lower day-ahead prices in eastern New York during the Waiver Period. However, in the days following the Waiver Period, the pattern was reversed as market participants' reactions to the error led to elevated day-ahead prices in eastern New York and lower day-ahead prices in western New York.

Overall, from January 11 to January 28, the average DAM prices were not substantially different from RTM prices. In the Capital zone, the average price was $92/MWh in the DAM and $92/MWh in the RTM. In the Central zone, the average price was $68/MWh in the DAM and $60/MWh in the RTM.[13] Hence, one may conclude that the effect of incorrect inputs on most load serving entities and generators was likely modest. Likewise, to the extent that market participants held TCCs sourcing west of the Central-East interface and sinking in eastern New York, it is likely that reduced day-ahead congestion revenues during the Waiver Period were substantially offset by increased day-ahead congestion revenues in the days following the Waiver Period.

To assist the market participants in understanding the foregoing analysis, and to respond to their requests as directed by the Commission in the Order, the NYISO is posting to the PAR Issues webpage a variety of data and charts, as discussed below.

a. Actual DAM and RTM LBMPs (by Zone and Node) for the Waiver Period and Four Days Thereafter (posted on PAR Issues webpage)

The NYISO is posting on the PAR Issues webpage comma separated variable (.csv) files showing the zonal and generator DAM and RTM hourly LBMPs for the month of January 2008.[14]

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[13] Note, these are simple averages based on the 18 days from January 11 to January 28, 2008.

[14] The comma separated variable (.csv) files are posted on the PAR Issues webpage under the headings:

(i) "Zonal LBMPs" under subheadings "Day Ahead Market Original" and "Time-Weighted/Int. Real-Time" and

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b. Charts Showing Hourly Actual DAM and RTM LBMPs (by Zone) for the Waiver Period and Four Days Thereafter (posted on PAR Issues webpage)

The NYISO is posting on the PAR Issues webpage charts (*i.e.,* plots) showing the zonal DAM and RTM hourly LBMPs for the Waiver Period and four days thereafter.[15]

The charts provide a summary of market outcomes during and after the Waiver Period, illustrating the effects of the input error at each zone in the New York Control Area. During the Waiver Period, the charts show substantially higher LBMPs in eastern areas in the RTM than in the DAM, and substantially lower LBMPs in western areas in the RTM than in the DAM. After the Waiver Period, the charts show this the pattern was reversed, with substantially lower LBMPs in eastern areas in the RTM than in the DAM and substantially higher LBMPs in western areas in the RTM than in the DAM. Hence, market participants who generally experienced elevated or depressed DAM LBMPs during the Waiver Period would have generally experienced the opposite effect after the Waiver Period.

c. Charts Showing Zone-to-Zone Congestion Differences for Top 25 TCC Paths for the Waiver Period and Four Days Thereafter (posted on PAR Issues webpage)

In order to respond to intervenors' requests for information showing impacts on transmission congestion contracts ("TCCs"), the NYISO is posting on the PAR Issues webpage charts (*i.e.,* plots) showing the hourly inter-zone differences in DAM and RTM congestion components on the top 25 zone-to-zone paths (representing approximately 80 percent of the TCCs by total MWs) for which TCCs were in place during the Waiver Period and four days thereafter.[16]

The charts provide a summary of market outcomes for TCC holders during and after the Waiver Period, illustrating the effects of the input error on the most significant TCC paths. During the Waiver Period, the charts show substantially more congestion from western areas to eastern areas in the RTM than in the DAM. After the Waiver Period, the charts show this the pattern was reversed, with substantially less congestion from western areas to eastern areas in the RTM than in the DAM. Hence, TCC holders who generally experienced reduced or increased

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(ii) "Generator LBMPs" under subheadings "Day Ahead Market Original" and "Time-Weighted/Int. Real-Time."

[15] The charts are in documents posted on the PAR Issues webpage under the heading "Zonal LBMP (RTM and Actual DAM) Plots."

[16] The charts are in documents posted on the PAR Issues webpage under the heading "Zonal LBMP (RTM and Actual DAM) Congestion Difference Plots for 25 Most Significant Paths."

DAM congestion during the Waiver Period would have generally experienced the opposite effect after the Waiver Period.

d. Simulated DAM LBMPs (by Zone and Node) for the Waiver Period (posted on PAR Issues webpage)

The NYISO is posting on the PAR Issues webpage data files showing the "simulated" hourly zonal and generator DAM LBMPs for the Waiver Period.[17] As explained below, the NYISO believes that any attempt at settlement analysis using this information would produce highly misleading results.

The simulated DAM LBMP data cannot be used to determine the effects of the error (*e.g.*, by multiplying a market participant's load by the "simulated" DAM LBMP and comparing it with the load multiplied by the actual DAM LBMP) because the DAM simulations do not reflect the state of the world as it would have been without the error, *i.e.*, the "but for" world, because the initial price effects of the error caused changes in behavior of the market participants. These changes in behavior include increased DAM purchases in eastern New York and DAM sales in western New York by virtual traders and external transaction schedulers. These responses by the market participants increase the congestion across the Central-East Interface in the simulation, which causes the DAM simulation to overstate the congestion that would have occurred if the erroneous inputs had never been used.

A document explaining these caveats is being posted on the PAR Issues webpage along with the data files.[18]

e. Comparison of Daily DAM Scheduled Flows With Injections and Withdrawals Corresponding to Outstanding TCCs (posted on PAR Issues webpage)

In order to respond to the request of the New York Transmission Owners, the NYISO is posting a data file and a chart (plot) comparing daily DAM scheduled flows over the Central-East Interface (during the Waiver Period plus four days) with the flows over the Central-East

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[17] The Comma Separated Variable (.csv) files (*i.e.*, separate files for each day of the Waiver Period) are posted on the PAR Issues webpage under the headings:

(i) "Zonal LBMPs" under subheading "Day Ahead Market Simulation" and

(ii) "Generator LBMPs" under subheading "Day Ahead Market Simulation."

[18] The "caveats regarding use of simulated LBMPs" document is posted (twice) on the PAR Issues webpage, in each case under the subheading "Day Ahead Market Simulation," under the headings of both "Zonal LBMPs" and "Generator LBMPs."

Interface that would have resulted if injections and withdrawals of energy in the market matched the injections and withdrawals corresponding to the outstanding TCCs.[19]

The NYISO observes that the analysis comparing the Day-Ahead flows to the flows implied by the TCC holdings that was requested by the New York Transmission Owners will not provide useful information regarding the effects of the error on market participants. While the error effectively caused more day-ahead flows to be scheduled across Central East, it has no effect on the TCC obligations across Central-East. Hence, whether the TCCs are over-sold or under-sold across Central-East is fixed and unaffected by the error. The incremental effect of the error on Day-Ahead congestion revenue remains the amount by which the error caused the interfaces to be oversold. This incremental effect remains the same, regardless of the magnitude of the flows implied by the TCC holdings.

A document explaining the foregoing limitations is being posted on the PAR Issues webpage along with the data file and chart.[20]

IV. INFORMATION REGARDING ERRONEOUS INPUTS

Pursuant to the requirements of Attachment M-1 to the NYISO's Market Services Tariff, the NYISO and PJM administer a joint operating protocol to implement the provisions of two contracts between Consolidated Edison ("ConEd") and Public Service Electric and Gas Company ("PSEG"). Energy scheduled under the contracts flows over two interfaces, including the "ABC" interface and – at issue here – the "JK" interface. The NYISO is responsible under Appendices 1 and 7 of Attachment M-1 of the NYISO Market Service Tariff for: (i) accounting for ConEd's "contract elections" submitted into the DAM, (ii) the flow of energy (by hour and MW) over the JK interface from Ramapo, NY/Waldwick, NJ through PSEG in New Jersey and back into New York through the ABC interface; and (iii) establishing New York Desired Flow schedules for the DAM, including the distribution of flows (in MW) across the interconnections making up the ABC and JK interfaces. The J and K lines in the latter interface are controlled by three PARs. The NYISO's distribution of flows (represented in PAR settings) then becomes part of the data inputs used by the SCUC to run the overall DAM.

The "erroneous inputs" to the DAM at issue in this proceeding were the PAR settings (in MW) for the J and K lines resulting from the NYISO's distribution of flows under Appendices 1 and 7 of Attachment M-1. The source of the erroneous inputs was telemetry data from two of a set of three newly installed redundant meters on the three PARs controlling the J and K lines at Ramapo/Waldwick. The NYISO's Power System Applications Engineering group included the new meters in the NYISO transmission system network model to provide a redundancy designed

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19 The Comma Separated Variable data file is posted on the PAR Issues webpage under the heading "Central-East Interface Flows using Injections/Withdrawals – DAM versus TCC."

20 The "limitations on use of this data" document is posted on the PAR Issues webpage under the heading entitled "Central-East Interface Flows using Injections/Withdrawals – DAM versus TCC."

to produce more accurate real-time data metering, in order to account for the possibility of bad data from the existing single meter on each PAR. The sign convention on the telemetry data produced by two of the three new redundant meters was negative, whereas the existing three meters had always produced data with a positive sign (or zero, meaning that the line was experiencing an outage). For purposes of providing real-time data and for the NYISO's Real-Time Market operation, the sign setting for each meter was properly accounted for. The Power System Applications Engineering group setting the meters had not, during nine years of previous operations, encountered a situation in which the sign setting of a meter needed to be specifically accounted for in the DAM.

The NYISO's Intelligent Source Selection software ("ISS") takes the telemetry data from meters and creates an historical repository of meter data, including data from each of the PARs. The ISS was modified on January 8, 2008, to begin reading data from the three new meters and placing it into the historical repository. The SCUC, in turn, accesses the data in the historical repository created by the ISS in order to distribute the New York Desired Flows across the PAR-controlled lines. Whereas the PAR metering sign settings were properly accounted for in the real-time markets, the sign setting did inaccurately impact the data in the historical repository that the SCUC accessed to model the DAM, causing the inadvertent error here.

The first SCUC operation affected by the negative telemetry data was for the DAM run for January 11, 2008. The DAMs for January 12 and 13 (a Saturday and a Sunday) were not affected because the SCUC is designed to access the historical repository for "like" days, and the new meters had not been installed as of the preceding weekend (January 5 and 6); therefore, the negative telemetry data from the two meters was not accessed by the SCUC to run the January 12 and 13 DAMs. The PAR input settings are displayed on the SCUC. On the pertinent days (January 11, and January 14 through 24) some of the PAR settings for two of the JK PARs were displayed as negative MW values, whereas they had (until that point) always been positive values. This anomaly was not detected right away, because the SCUC review procedures in place throughout this period (until the error was detected and corrected) were designed simply to verify whether these PAR settings were non-zero values. A zero value would indicate a line outage that needed to be accounted for in the DAM, and a negative sign value would have never appeared before the installation of the second set of meters. Although correctly implementing NYISO procedures in place at the time, the SCUC engineers did not recognize that the negative sign values would be incorrect inputs into the DAM, and therefore did not detect the error.

The correct and erroneous PAR settings for the affected hours for the two affected PARs are contained in a data file posted on the PAR Issues webpage on the NYISO website.[21]

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[21] This Comma Separated Variable (.csv) file is posted on the PAR Issues webpage under the heading "Correct and Erroneous Waldwick PAR Settings for DAM During Waiver Period."

V. PRELIMINARY VIEWS ON THE FEASIBILITY OF RESTITUTION

The NYISO is prepared to engage in discussions with stakeholders regarding the feasibility of restitution under the circumstances presented in the Waiver Request. At this stage, the NYISO offers its following preliminary views on that issue, in compliance with Ordering Paragraph (C) of the Order.

First, the provisions of the NYISO Services Tariff[22] do not permit changes to the actual DAM LBMPs experienced during the Waiver Period, as the dates and hours in question were not "reserved" within the timeframes specified in the tariff provisions. Those provisions were developed through extensive collaboration with the market participants, and reviewed and accepted by FERC. Insofar as restitution would involve revising such prices in order to "resettle the market," those tariff provisions preclude restitution absent FERC action. In any event, and as discussed previously and below, there is no reasonable estimate of "correct" prices that could be made.

Second, even if price revisions were permitted under the NYISO Services Tariff, use of the incorrect inputs (as discussed in Section III.B.2 above) affected the subsequent bid and offer behavior of the market participants, and therefore it is not possible to know what LBMPs would have been if the correct inputs had been used. That is, one cannot mechanistically calculate the "correct" LBMPs and other market results by substituting the "correct" PAR inputs and assuming that market participant bid and offer behavior in response to the correct inputs would have been unchanged, when in fact the actual market participant behavior responded to the incorrect inputs. Thus, there can be no reasonable basis for calculating any pricing-related impacts on individual market participants or categories of market participants, and therefore no reasonable basis for restitution, because the manner in which market participants would have responded to the "correct" PAR inputs is unknown. Indeed, there is reason to believe that net price effects on loads and generators were generally offsetting and modest in magnitude, as discussed in the Patton Affidavit.

Third, physical real-time commitments and dispatch of generators were made consistent with the incorrect PAR inputs used, and cannot be "unmade." Generators incurred actual costs by operating in accordance with their actual commitment and dispatch instructions. Hence, it would be inequitable to "claw back" the LBMP revenue generators received for following instructions in order to pay restitution to market participants. Because inconsistencies would exist between the actual dispatch and the dispatch levels that would be economic under a set of "corrected" prices, attempting to resettle the market would create significant additional uplift to cover the offers of the generators that were actually committed and dispatched. Similarly, no restitution through adjustment of excess congestion rents can be administered without "docking" one transmission owner in favor of another.

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22 *See* Services Tariff, Attachment E, at ¶ C ("Erroneous prices not reserved and corrected within these timeframes shall not be corrected by the ISO except as directed by the Commission or a court of competent jurisdiction.").

Fourth, and more generally, an attempt at restitution through market resettlement would undermine confidence in the NYISO market. Each day, the day-ahead market uses thousands of data input parameters that are based on estimates of real-time values. If identification of a data input error in a past period could lead to *ex post* resettlement, it would create additional risks for market participants in the future that would affect their behavior and reduce the efficiency of the market. These indirect adverse effects on market efficiency would likely outweigh any potential benefit of a resettlement.

VI. PROCESS FOR UNDERTAKING THE DISCUSSIONS REQUIRED BY PARAGRAPH 17 OF THE ORDER

The NYISO is proposing the following approach to the stakeholder discussions required by paragraph 17 of the Order:

- the NYISO will provide an overview of the data provided herewith, and the goals of the discussions, at the March 25, 2009 Management Committee meeting;
- a more detailed discussion at the April 14, 2009 Business Issues Committee meeting; and
- a follow-up discussion at the April 23, 2009 Management Committee meeting.

VII. PROPOSED PROCESS FOR THE DEVELOPMENT OF TRANSPARENCY PROCEDURES

The Board and senior management of the NYISO have already commenced the development of the transparency procedures required by the Order. The NYISO plans to begin obtaining market participant input on the principles for these procedures at a meeting of the appropriate NYISO committee held in the near future, and develop with the market participants a schedule for considering the principles and procedures.

ATTACHMENT 1

NYISO COMPLIANCE WITH PARAGRAPH 17 DATA REQUIREMENTS

REQUIREMENT (AND SOURCE)	DATA PROVIDED
Full analysis of the impact of the error (Ordering Paragraph (C))	Sections III.B.1-2 (and materials described therein) of the accompanying memorandum
Analysis of effect on prices, interface flows, schedules and limits (P 17)	Information on interface flows, schedules and limits is contained in materials described in Section III.B.1.a of the accompanying memorandum; information on price effects is contained in: overview in Section III.B.2, and materials described in Sections III.B.2.a-c, of the accompanying memorandum (LBMPs and TCCs); "simulated" LBMPs provided in materials described in Section III.B.2.d (subject to stated caveats)
Daily breakdown of the $7.4 million impact that Dr. Patton has estimated (NYTOs)	Materials described in Section III.B.1.a of the accompanying memorandum
Information regarding what the erroneous inputs were (P 17)	Narrative information in Section IV of the accompanying memorandum
Analysis of effects of the modeling error on particular charges to individual market participants (Alcoa); results of simulations with the corrected inputs (NYTOs, P 17)	Individual market participant e-mails as described in Section III.B.1.b of the accompanying memorandum (for allocation of balancing market residuals and excess congestion rents); overview in Section III.B.2, and materials described in Sections III.B.2.a-c, of the accompanying memorandum (LBMPs and TCCs); "simulated" LBMPs provided in materials described in Section III.B.2.d (subject to stated caveats)
Comparison of flows that were scheduled over the Central East Interface in the day-ahead market each day to the flows over Central East that would have resulted if injections and withdrawals of energy in the market matched the injections and withdrawals corresponding to the TCCs outstanding (NYTOs)	Materials described in Section III.B.2.e (subject to stated limitations on use of data) of accompanying memorandum
NYISO views on the feasibility of restitution (Ordering Paragraph (C))	Preliminary NYISO views provided in Section V of accompanying memorandum