UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.) Docket No. _____

REQUEST FOR LIMITED TARIFF WAIVER OF NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

The New York Independent System Operator, Inc. ("NYISO") submits this filing to (i) formally notify the Federal Energy Regulatory Commission ("Commission") of a system modeling error in its Security Constrained Unit Commitment ("SCUC") software that affected certain day-ahead market schedules and prices; (ii) describe steps the NYISO has taken to correct the error and to prevent its recurrence; and (iii) request a limited waiver of the tariff provisions implicated by the system modeling error, and any other waivers that the Commission may deem necessary, so that the NYISO will not be required to retroactively change prices or settlements.

Upon learning of the error reported in this filing, the NYISO moved quickly to correct it and informed Commission staff. In addition, the NYISO undertook measures to prevent similar errors going forward. Those measures included a thorough review of the cause of the error and the development and implementation of improvements to the NYISO's software and procedures. Finally, the NYISO undertook an analysis of the market impacts of the error with assistance from its Independent Market Advisor, Dr. David Patton of Potomac Economics, as described below. Dr. Patton's affidavit follows this request as Attachment I. With this filing, the NYISO does not request any change to its tariffs and does not propose any retroactive change to market clearing prices or settlements.

I. Copies of Correspondence

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II. Background

The NYISO uses its SCUC to determine schedules, commitments, and prices in its day-ahead market based on numerous data inputs, including load forecasts, transmission system information, and bids and offers submitted. On January 8, 2008, the NYISO made updates to its Intelligent Source Selection program, a system that enhances the NYISO's real-time market pricing accuracy by improving the evaluation of certain metering data inputs.[2] In the course of making these changes, the NYISO inadvertently introduced incorrect values for two of the three Ramapo-Waldwick phase angle regulators ("PARs") in the SCUC. The resulting PAR settings were inconsistent with the requirements of Appendix 1 of Attachment M-1 of the Market Administration and Control Area Services Tariff ("Services Tariff"). Attachment M-1

[1] The NYISO respectfully requests waiver of 18 C.F.R. § 385.203(b)(3) (2004) to permit service on counsel for the NYISO in both Washington, D.C. and Richmond, Virginia.

[2] The Intelligent Source Selection ("ISS") is real-time market software that, upon identification of metering errors, automatically switches to alternative metering points to ensure data integrity. The ISS checks and filters erroneous data and reduces the incidence of real-time market price errors.

establishes the operating protocols for the planning, operation, control, and scheduling of certain PAR-controlled interconnections between the NYISO and PJM control areas pursuant to grandfathered contracts between Consolidated Edison Company of New York ("ConEd") and Public Service Electric and Gas Company.[3]

The PAR modeling error caused the SCUC to underestimate the flows on the Central-East interface by an average of 680 MW for twelve days in January 2008, specifically January 11 and 14 through 24 ("Waiver Period").[4] As a consequence, the SCUC set schedules and prices in the day-ahead market with an expectation of greater available transmission capacity from western New York to eastern New York than would be physically available in real-time market operations. The effects of this error are explained below.

III. Analysis of Market Impacts

After identifying and correcting the PAR modeling error, the NYISO engaged its Independent Market Advisor, Dr. David Patton of Potomac Economics, to assess the related market impacts. As the basis for his analysis, Dr. Patton reviewed the results of the day-ahead and real-time markets during the Waiver Period compared to market simulations for the same period using corrected PAR modeling inputs. Dr. Patton identified various impacts on market clearing prices and uplift costs. While the impacts on market clearing prices are difficult to determine with accuracy due to the influence of market participant behavior in reaction to prevailing market conditions, Dr. Patton concluded that the overall effects were substantially offsetting. Dr. Patton also concluded that the PAR modeling error resulted in increased uplift

[3] Specifically, Appendix 1 of Attachment M-1 establishes that the NYISO shall operate the day-ahead market consistent with certain contract elections submitted by ConEd. Services Tariff, Attachment M-1, Appendix 1 at PP 4-7. The NYISO inadvertently applied an incorrect value for these contract elections during the Waiver Period.

[4] In addition to the Central-East interface, the West-Central interface flows were also underestimated by SCUC during the Waiver Period.

costs during the Waiver Period of approximately $10.9 million as a result of associated redispatch costs incurred in the real-time market. These increased uplift costs were partially offset by a related reduction in transmission costs of approximately $3.5 million, resulting in a net impact of approximately $7.4 million.

A. Energy Market Clearing Prices

During the Waiver Period, the PAR modeling error caused the SCUC to calculate schedules, commitments, and prices for the day-ahead market based on an assumption of greater transmission capacity from west to east than would actually be available in real-time operations. The over-scheduling of the Central-East interface resulted in reduced congestion on this interface, producing relatively higher day-ahead market prices in western New York and relatively lower day-ahead market prices in eastern New York. The NYISO estimated these day-ahead market price impacts using simulations run with corrected PAR settings. During the Waiver Period, the average day-ahead congestion price between the Central Zone and the Capital Zone was $12/MWh, whereas it was calculated to be $25/MWh when using corrected inputs in the simulations.[5]

As indicated in Dr. Patton's affidavit, the simulations tend to overstate the direct impact of the PAR modeling error, and therefore provide only an upper bound for reference.[6] First, the simulations did not (and could not) control for the additional demand created in the day-ahead market in eastern New York as market participants engaged in virtual transactions to arbitrage the price difference between day-ahead and real-time prices.[7] As such, the simulations tend to

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[5] Affidavit of David Patton, Ph.D., Attachment I to this *Request for Limited Tariff Waiver of New York Independent System Operator, Inc.* at P 10 ("Patton Affidavit").

[6] *See id.* at P 11.

[7] *See id.*

overstate the congestion costs from west to east.[8] Second, the simulations did not (and could not) account for the indirect and offsetting effects of market participant reactions to the price impacts of the PAR modeling error that persisted for several days after it was corrected.[9]

As described above, the PAR modeling error resulted in an increased price difference between day-ahead and real-time markets. Virtual traders responded to this price spread by buying in the depressed day-ahead market and selling in the higher real-time market. This tended to ameliorate the impacts of the PAR modeling error by increasing demand in the day-ahead market, therefore tending to increase congestion to levels that better reflected the real-time congestion. Market participants' reaction to the PAR modeling error continued for several days after it was corrected. As a result, while initially a decrease in congestion was experienced across the Central-East interface in the day-ahead market during the Waiver Period, an increase in congestion was experienced in the four days that followed as market participants continued to respond to the expected price spread between the day-ahead and real-time markets. Hence, the price effects during the Waiver Period were offset by the price effects that followed the Waiver Period.[10]

During the Waiver Period, the average congestion price difference between the Central Zone and the Capital Zone was $12/MWh in the day-ahead market compared to $36/MWh in the real-time market.[11] During the four days following the Waiver Period, the average congestion price difference between the Central Zone and the Capital Zone was $41/MWh in the day-ahead

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[8] *See id.*

[9] *See id.* at P 12.

[10] *See id.*

[11] *See Patton Affidavit* at P 10.

market compared to $13/MWh in the real-time market.[12] As a result of this reversal of congestion patterns, average day-ahead market prices were not substantially different from average real-time market prices when examining the entire period from January 11 to January 28. In the Capital Zone, the load-weighted average price was $92/MWh in day-ahead market and $92/MWh in the real-time market, amounting to no difference in price.[13] In the Central Zone, the load-weighted average price was $68/MWh in day-ahead market and $60/MWh in the real-time market, a difference of $8/MWh.[14] Thus, the reversal of the congestion patterns between the Waiver Period and the four days that followed substantially offset the overall price impacts of the PAR modeling error.[15]

B. Uplift Costs

The under-commitment of resources in eastern New York in the day-ahead market as a result of the PAR modeling error led to increased real-time operating costs as additional resources had to be committed and dispatched in eastern New York to account for the lower transmission capacity that was actually available.[16] Because loads had already accounted for and settled the majority of their energy requirements in the day-ahead market, the costs to commit and dispatch additional resources in eastern New York in real-time led to an increase in uplift

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[12] *Id.* at P 12.

[13] *Id.* at P 23.

[14] *Id.*

[15] While the reversal of the congestion patterns in the four days following the Waiver Period substantially offset the overall price impacts of the PAR modeling error on market participants, the NYISO acknowledges that the impacts on individual market participants may have varied and that, in some instances, the impacts may not have been entirely offset. However, for the reasons described in Part V of this letter, the NYISO cannot accurately re-run its markets in such a way to revise the price impacts on individual market participants and any attempt to do so would disrupt the settled expectations of all market participants.

[16] The simulations resulted in an additional day-ahead market commitment of 150 MW in the Capital Zone and 190 MW in other portions of eastern New York during the Waiver Period. *See Patton Affidavit* at P 14.

costs.[17] Dr. Patton estimated that the cost of additional real-time resources required in eastern New York resulted in increased uplift charges of approximately $10.9 million during the period in question.[18]

The increase in uplift costs was at least partially offset by the NYISO's collection of approximately $3.5 million in excessive congestion revenue resulting from the over-scheduling in the day-ahead market during the Waiver Period.[19] When the flows over an interface are scheduled in the day-ahead market at levels that exceed the physical capability of the interface as reflected in Transmission Congestion Contracts ("TCCs") sold over the interface, the NYISO will collect more congestion revenue than the amount owed to the holders of the TCCs. When this occurs, as it did in this instance, market participants' transmission costs are reduced. For this reason the additional uplift charges of approximately $10.9 million were partially offset by a reduction in transmission costs of approximately $3.5 million, resulting in a net impact of approximately $7.4 million. This $7.4 million represents approximately 14.8% of the total uplift costs for January of $49.9 million and .82% of the overall energy and ancillary services purchases for January in the NYISO-administered markets of approximately $900 million.

IV. Corrective Actions

The NYISO corrected the PAR modeling error as soon as it discovered it. In addition, the NYISO has undertaken several significant steps to prevent a recurrence of this or similar errors. The NYISO has put in place additional procedures to verify the proper operation of its day-ahead and real-time markets following changes to data inputs such as those made to improve

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[17] These uplift costs reflect payments made to generation resources that had not been scheduled in the day-ahead market but that were required to operate in the real-time market.

[18] *Patton Affidavit* at P 19.

[19] *See id.* at PP 18-19.

the operation of the Intelligent Source Selection software. The NYISO has also implemented improved procedures to verify the accurate system modeling requirements of the operating protocol in Attachment M-1 in its daily administration of the SCUC. Most significantly, the NYISO has put in place a permanent monitoring and analysis group with responsibilities to perform a daily review and evaluation of the results of the day-ahead and real-time markets, including a review of uplift charges to identify unusual or inefficient market outcomes, such as those that resulted from the PAR modeling error. The purpose of this new process is to quickly identify anomalous market outcomes, determine the root causes, and implement corrective actions.[20]

V. Request for Waiver

The NYISO respectfully requests that, with respect to the PAR modeling error described in this filing, the Commission grant a waiver of Appendix 1 to Attachment M-1 of the Services Tariff, and such other provisions as the Commission may deem necessary. The Commission has previously granted similar waivers in appropriate circumstances.[21] In the case at hand, the underlying error was made in good faith. The error was inadvertently introduced during the implementation of part of the NYISO's Intelligent Source Selection program, a program designed to improve real-time market price accuracy. The NYISO was not aware of the error during the Waiver Period, and once it discovered the error, it promptly corrected it and informed Commission staff. Furthermore, the scope of the waiver is limited to a relatively short period of

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[20] Since the implementation of the monitoring and analysis group described above and the relief granted in Docket ER-08-1281, total uplift has been reduced from approximately $510 million during the months of January to July 2008, an average of $72.9 million per month, to approximately $74 million for the months of August through November 2008, an average of $18.5 million per month.

[21] *See, e.g., ISO New England, Inc.*, 117 FERC ¶ 61,171 at P 21 (2006); *see also Wisvest-Connecticut*, 101 FERC at 62,551 (observing that error was "an inadvertent mishap"); *Great Lakes Gas Transmission Limited Partnership*, 102 FERC ¶ 61,331 (2003); *TransColorado Gas Transmission Co.*, 102 FERC ¶ 61,330 (2003); Northern *Border Pipeline Co.*, 76 FERC ¶ 61,141 (1996).

time, and the NYISO has taken significant steps to prevent the recurrence of this or similar errors going forward. Finally, the requested waiver will prevent harm to market participants by preventing the disruption of settled expectations about historic market clearing prices and promoting financial certainty in the NYISO-administered markets.

In connection with such waiver, the NYISO respectfully requests that the Commission not require it to revise market outcomes for the affected period. It is not possible to retroactively change the schedules and physical commitments that were made then, and any attempt to retroactively revise market outcomes would be inconsistent with those schedules and physical commitments as they actually existed. Moreover, as the Commission has recognized in prior orders, re-running the NYISO markets cannot be accurately accomplished because it requires the NYISO to make assumptions about how market participants would respond to changes in market conditions.[22] In this instance, it is not possible to accurately revise clearing prices for the affected period because market participants responded to prevailing market conditions in a manner that makes it impossible to accurately recalculate prices as though the PAR modeling error did not occur.

Finally, requiring the NYISO to re-determine prices at this point based on speculative and hypothetical market outcomes would contravene the Commission's policy of promoting market certainty and confidence: "The use of [retroactive price correction] remedies...would create substantial uncertainty in the New York markets and would undermine confidence in them."[23]

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[22] *See, e.g., New York Independent System Operator, Inc.*, 115 FERC ¶ 61,026 at P 55 (2006).

[23] *New York Independent System Operator, Inc.*, 92 FERC ¶ 61,073 (2000). *See also Wisvest-Connecticut, LLC v. ISO New England, Inc.*, 103 FERC ¶ 61,302 at P 20, *order on reh'g*, 104 FERC ¶ 61,262 (2003) ("We will not disturb the finality of past ICAP market transactions by opening the books where months have finally settled."); *Bangor-Hydro Electric Co. v. ISO New England, Inc.*, 97 FERC ¶ 61,339, at 62,590 (2001) (stating that clearing prices resulting from implementation error had been relied upon by market participants, and "to go back and change those prices, when no notice was given by ISO-NE that such a disruption might occur, would do far more harm...than is justifiable or appropriate under the circumstances...and would be fundamentally unfair to market participants").

Applying retroactive price correction runs counter to the Commission's policy position and would ultimately compromise market integrity.[24] Market Participants clearly benefit from certainty and confidence in the market which retroactive re-pricing would undermine. Consistent with the reasoning above, the NYISO's Independent Market Advisor has recommended that the NYISO should not revise the market outcomes for the affected period because it is impossible to do so correctly and doing so would harm the integrity of the market.[25]

Therefore, the NYISO respectfully requests both that the Commission grant it a waiver of Appendix 1 to Attachment M-1 of the Services Tariff, and any other tariff provisions that it may deem necessary, and permit the NYISO to avoid making any retroactive price adjustments.

VI. Conclusion

WHEREFORE, for the foregoing reasons, the New York Independent System Operator, Inc., respectfully requests that the Commission grant the tariff waiver requested herein, forego any retroactive pricing adjustment and take any other actions or grant any other relief necessary to equitably and appropriately resolve the concern identified in this filing.

Respectfully submitted,

Ted J. Murphy
Counsel for
New York Independent System Operator, Inc.

cc: Shelton Cannon
Michael Bardee
Kathleen Nieman
John Yakobitis
Gregory Berson
Larry Gasteiger
Connie Caldwell
Lance Hinrichs
Rachel Spiker
Jeffrey Honeycutt

[24] *See Patton Affidavit* at P. 26.

[25] *See id.* at PP 24-27.

ATTACHMENT I

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc. **Docket No. _____**

AFFIDAVIT OF DAVID B. PATTON, PH.D.

I. Qualifications and Purpose

1. My name is David B. Patton. I am an economist and President of Potomac Economics. Our offices are located at 9990 Fairfax Boulevard, Fairfax, Virginia 22030. Potomac Economics is a firm specializing in expert economic analysis and monitoring of wholesale electricity markets.

2. I currently serve as the Independent Market Advisor for the New York Independent System Operator, Inc. ("NYISO") , and as the Independent Market Monitor for the ISO-New England, Inc. ("ISO-NE") and the Midwest ISO ("MISO"). In these roles, I am responsible for assessing the competitive performance of the markets administered by the ISOs, including assisting in the implementation of monitoring plans to identify and remedy market design flaws and abuses of market power. I also provide recommendations regarding market mitigation measures and other market rules. I have served in this capacity for the NYISO since May 1999.

3. I have worked as an energy economist for seventeen years, focusing primarily on the electric utility and natural gas industries. I have provided strategic advice, analysis, and expert testimony in the areas of electric power industry restructuring, pricing, mergers, and market power. I have also advised other existing and prospective RTOs on transmission pricing, market design, and congestion management issues. With regard to competitive analysis, I have provided expert testimony and analysis regarding market power issues in a number of mergers and market-based pricing cases before the Federal Energy Regulatory Commission ("FERC"), state regulatory commissions, and the U.S. Department of Justice.

4. Prior to my experience as a consultant, I served as a Senior Economist in the Office of Economic Policy at the Federal Energy Regulatory Commission, advising the Commission on a variety of policy issues including transmission pricing, open-access policies and electric utility mergers.

5. Before joining the Commission, I worked as an economist for the U.S. Department of Energy. During this time, I helped to develop and analyze policies related to investment in oil and gas exploration, electric utility demand side management, residential and commercial energy efficiency, and the deployment of new energy technologies. I hold a Ph.D. and M.A. in Economics from George Mason University and a B.A. in Economics with a minor in Mathematics from New Mexico State University.

6. The purpose of this affidavit is to provide my assessment of how the New York wholesale market was affected by the use of incorrect data inputs in the Day-Ahead Market ("DAM") relating to the Ramapo-Waldwick Phase Angle Regulators ("PARs") during the Waiver Period,[1] and to support my recommendation that there should be no retroactive changes to market clearing prices. Unless otherwise specified, capitalized terms used in my affidavit have the same meanings specified in the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff"), or the NYISO's filing requesting the limited tariff waivers with which this affidavit is submitted.

7. Section II of this affidavit discusses the direct and indirect effects of the incorrect inputs on outcomes in the DAM and the Real-Time Market ("RTM"). Section III of the affidavit discusses the likely financial impacts on market participants. Section IV explains my recommendation that there should be no retroactive changes to market clearing prices as a result of the use of incorrect inputs during the Waiver Period.

II. Market Effects of Using the Incorrect Inputs for the Ramapo-Waldwick PARs

8. During the Waiver Period, incorrect inputs were used in the DAM model ("SCUC") relating to the settings of the Ramapo-Waldwick PARs, which affect flows across the Central-East interface. The use of incorrect inputs led SCUC to

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[1] The Waiver Period includes January 11 and January 14 through January 24, 2008.

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 physically feasible.

9. Over-scheduling of flows across this key interface had several direct and indirect market effects. First, the over-scheduling contributed to relatively modest day-ahead congestion during most of the Waiver Period. Second, the over-scheduling contributed to inefficient commitment in eastern New York, which led to elevated real-time prices in eastern New York. 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 remainder of this section describes the market impacts of using the incorrect inputs in greater detail.

A. Direct Effects on Scheduling and Prices in the Day-Ahead Market

10. As discussed above, increasing the Central-East transfer capability (the primary effect of the input error) will tend to increase flows from western New York to eastern New York and reduce the congestion between the areas. To estimate the effects of using the incorrect inputs on market outcomes, the NYISO ran SCUC simulations of the 12 days during the Waiver Period using corrected inputs. On these days, the average congestion price difference between the Central zone and

the Capital zone was $25/MWh in the DAM simulations compared to $12/MWh in the actual DAM (and $36/MWh in the RTM), indicating that using the correct inputs would have led to additional congestion in the DAM across the Central-East interface. [2]

11. However, this price difference overstates the effect of using the correct inputs, because the simulation does not reflect a "but for" world. Most significantly, the simulation reflects the changes in participant behavior 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 increase 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. As such, the congestion likely would have been lower than $25/MWh. Nonetheless, the simulations effectively provide an upper bound on the direct effects of the error on the DAM during the Waiver period.

12. The responses by market participants described above tended to ameliorate the under-commitment in eastern New York during the Waiver Period. Furthermore, these responses 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

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[2] The Central zone is the zone that is immediately west of the Central-East interface, and the Capital zone is the zone that is immediately east of the Central-East interface. So the congestion price difference between the Central zone and the Capital zone is an indicator of congestion across the Central-East interface and other facilities that transfer power from west to east in upstate New York.

across the Central-East interface was inflated as the participant response to the prior real-time congestion continued for several days following January 24. From January 25 through January 28, the average congestion price difference between the Central zone and the Capital zone was $41/MWh in the DAM compared to $13/MWh in the RTM.

B. Effects on the Real-Time Market

13. While the input error directly and indirectly affected the results in the day-ahead market as described above, it also affected the real-time market by changing the commitment 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.

14. During the Waiver period, the SCUC over-scheduled flows from western to eastern New York. This caused 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 differences between the amounts of capacity committed in the actual DAM and the amounts committed in the DAM simulations. In the DAM simulations, an additional 150 MW was committed in the Capital zone and an additional 190 MW was committed in other portions of eastern New York.[3] Hence, the incorrect inputs substantially reduced commitment in eastern New York. The fact that less supply was available in

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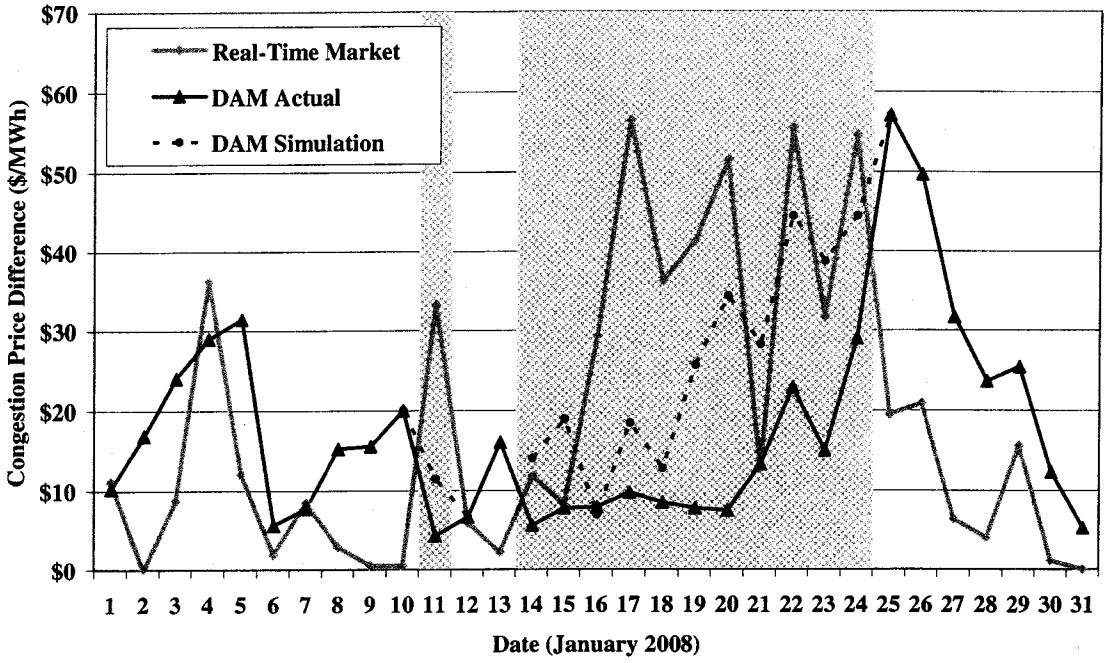
[3] This is based the hours from 6 am to 10 pm during the Waiver Period.

eastern New York in real time 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.

C. Market Outcomes During and After the Waiver Period

15. The following figure shows the market outcomes in and around the Waiver Period, and illustrates the various effects of the input error. The figure shows the average congestion price differences between the Central zone and the Capital zone on each day in January 2008. A line is shown for each of the following: the actual DAM prices, the RTM prices, and the prices from the simulations of the DAM using the correct inputs. The 12 days of the Waiver Period are indicated with shading.

Daily Average Congestion Price Difference
From Central Zone to Capital Zone, January 2008



16. During the Waiver Period, the figure shows that there was substantially more congestion from the Central zone to the Capital zone in the DAM simulations and in the RTM than in the actual DAM. The increase in real-time congestion is evident in this figure, which is consistent with the changes in the commitment patterns caused by the input error in the DAM. As participants react to the increased real-time congestion, the actual and simulated DAM congestion increase over the Waiver period.

17. After the Waiver Period, the figure shows that the pattern was reversed, with more congestion in the actual DAM than in the RTM. This reversal is likely due, in part, to the expectations of higher congestion in the RTM by market participants.

D. Other Effects

18. In addition to the price effects discussed above, the input error had other effects on the settlements. First, the over-scheduling in the DAM causes excess congestion revenue to be collected in the DAM. When the flows over an interface are scheduled in the DAM at levels that exceed the physical capability of the interface as reflected in the Transmission Congestion Contract ("TCCs") sold over the interface, more congestion revenue will be collected than the amount owed the holders of the TCCs. I estimate that the excess congestion rents due to the over-scheduling equaled $3.5 million during the Waiver Period.

19. Second, because the DAM schedules were physically infeasible, the NYISO was compelled to redispatch generation in the RTM to reduce the flows over the relevant interfaces to physically feasible levels. The redispatch is effected by RTD increasing generation in eastern New York and decreasing generation in western New York relative to the DAM schedules. The costs of this redispatch are recovered through negative balancing market residuals. I estimate that this led to $10.9 million in negative balancing market residuals. These costs are higher than the excess congestion revenues collected in the DAM because the congestion levels in the RTM are higher than in the DAM. If the 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 $7.4 million.

20. 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. Hence, a large share of the congestion between the Central zone and the Capital zone in the DAM was due to the Total East interface rather than the Central-East interface. Second, less frequent congestion in the DAM across the Central-East interface shifted some transmission bottlenecks upstream to 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. These changes in the pattern of congestion mitigated the impact on clearing prices and commitment from using the incorrect inputs.

III. Discussion of Financial Impact on Individual Market Participants

21. The use of incorrect inputs during the Waiver Period affected market participants by affecting clearing prices and uplift costs as described in the prior section. The effects on specific market participants depend on the nature of their participation in the market.

22. Based on our 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.

23. Overall, from January 11 to January 28, average day-ahead prices were not substantially different from real-time 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. Hence, one may conclude that effect of the error on most load serving entities and generators were 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.

IV. Recommendation to Not Revise Market Clearing Prices

24. I strongly recommend against revising market clearing prices or otherwise resettling the market as a remedy for the use of incorrect inputs during the Waiver Period for at least three reasons. First, it is not possible to know what clearing prices would have been if the correct inputs had been used because the incorrect inputs affected the subsequent behavior of market participants. This makes it impossible to determine what the clearing prices would have been under different circumstances.

25. Second, physical commitments and dispatch were made consistent with the inputs used and cannot be undone. Hence, simply recalculating prices, even if it were possible, would not hold participants harmless.

26. Third, resettlement would undermine confidence in the NYISO market. Each day, the day-ahead market uses thousands of parameters that are based on estimates of real-time values. If identification of an 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 effects on the market efficiency would likely dwarf any potential benefit of a resettlement.

27. For the reasons set forth above, I recommend that the Commission approve the NYISO's request for waivers of any applicable tariff provisions and urge the Commission not to order a retroactive re-determination of market clearing prices arising from the use of incorrect SCUC inputs during the Waiver Period.

28. This concludes my affidavit.

ATTESTATION

I am the witness identified in the foregoing Affidavit of David B. Patton, Ph.D. dated December 11, 2008 (the "Affidavit"). I have read the Affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information, and belief.

/s/ David B. Patton

David B. Patton
December 11, 2008

Subscribed and sworn to before me

this 11th day of December, 2008

Notary Public

My commission expires: _____