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February 2, 2001

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BY HAND

The Honorable David P. Boergers
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

New York Independent System Operator, Inc.'s
Report on the Implementation of Virtual Bidding and Zonal Price-Capped Load Bidding
in Docket No. EL00-90-000

Dear Mr. Boergers:

In ordering paragraph "B" of its October 5, 2000 order in the above-captioned proceeding ("October 5 Order"),[1] the Commission directed the New York Independent System Operator, Inc.("NYISO") to "file a report on its development of a plan to implement bidding by non-physical entities . . . ." In compliance with this requirement, the NYISO hereby submits a description of its efforts thus far to permit "non-physical" bids in the NYISO-administered markets ("virtual bidding"), and its plan for completing the implementation of virtual bidding by Fall 2001.

This filing also discusses the NYISO's plan to implement zonal price-capped load bidding by Summer 2001 and explains why the widespread availability of zonal price-capped load bidding is a necessary prerequisite to the successful introduction of virtual bidding.

I. Documents Submitted

1. This letter;

2. NYISO staff report concerning the NYISO's efforts to date to implement virtual bidding and enhanced price sensitive load bidding ("Attachment A"); and

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[1] *Morgan Stanley Capital Group, Inc. v. New York Independent System Operator, Inc.*, 93 FERC ¶ 61,107 (2000).

3. Form of *Federal Register* Notice ("Attachment B").

II. Copies of Correspondence

Communications regarding this proceeding should be addressed to:

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III. Background

On July 5, 2000 Morgan Stanley Capital Group, Inc. ("Morgan Stanley") filed a complaint demanding that the NYISO be required to immediately implement virtual bidding.[2] On July 17, 2000, the NYISO submitted its answer explaining that Morgan Stanley's complaint should be rejected.[3] Among other things, the NYISO emphasized that the complaint ignored the complexity of the virtual bidding implementation effort and the importance of properly developing and testing virtual bidding systems in order to avoid possible pricing anomalies, market disruption and reliability problems. It was therefore necessary to defer the implementation of virtual bidding until after

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[2] *Complaint and Request for Fast-Track Processing of Morgan Stanley Capital Group, Inc.*, Docket No. EL00-90-000 (July 5, 2000).

[3] *New York Independent System Operator, Inc.'s Answer to Morgan Stanley Capital Group, Inc.'s Complaint and Request for Fast Track-Processing*, Docket No. EL00-90-000 (July 17, 2000).

Summer 2000. The answer noted that the NYISO hoped to implement virtual bidding in a staged manner, starting by introducing virtual load bidding in Fall 2000 and then proceeding to work on virtual generation bidding, which posed even greater technical challenges.

Subsequently, the NYISO's September 1 combined compliance report in Docket Nos. ER00-3591-000 and ER00-3591-001 (as corrected September 8, 2000), described the NYISO's efforts to implement virtual load bidding. The NYISO noted that it was becoming increasingly clear that "establishing virtual bidding will be challenging, and that the process must be managed very carefully, since there could be severe financial and reliability consequences if the linkages between the existing 'totally physical' and the to-be created financial markets are not constructed properly."[4] Moreover, the NYISO indicated that it had begun to recognize "that it may be necessary to closely coordinate the expansion of virtual bidding with the correction of software problems that currently restrict the use of price sensitive load bids by participants in the NYISO-administered markets." The NYISO therefore informed the Commission that it was considering proposing that implementation of virtual bidding be deferred until price sensitive load bidding mechanisms were in place.

In the October 5 Order, the Commission denied Morgan Stanley's request for relief. The Commission stated:

> We are concerned that the changes necessary to accommodate bidding by non-physical entities, especially with regard to the NYISO's software be carefully conceived. It is imprudent to introduce sudden overrides and quick fixes that could serve to disrupt efforts to correct the market flaws already identified or create new problems. Instead, we find it is important in this case to adopt a balanced, considered approach to needed corrections and changes to the NYISO's software. We will require the NYISO to file a report on its development of a plan to implement bidding by non-physical entities on, or before, January 1, 2001.

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[4] *New York Independent System Operator, Inc.'s Combined Compliance Filing and Report*, Docket Nos. ER00-3591-000 and -001 at 54 (September 1, 2000, as corrected, September 8, 2000).

On January 3, 2001, the NYISO requested an extension of time until January 18, 2001 to file the required report. On January 18, 2001 the NYISO requested an additional extension until February 2, 2001.

IV. Overview of the NYISO's Implementation Efforts to Date

The NYISO staff is working on a number of projects that are intended to increase the liquidity of the NYISO-administered markets and recognizes that virtual bidding may enhance liquidity, foster greater price convergence and bring other benefits. As is discussed in greater detail in Attachment A, however, NYISO staff has determined that implementing virtual bidding poses a number of difficult technical challenges and must be undertaken in a deliberate manner. Poorly designed virtual bidding rules that do not properly link the financial markets created by virtual bidding with physical reality will expose market participants to market anomalies and possible reliability problems. Any virtual bidding system must be carefully tested in order to guard against unintended consequences. In addition, NYISO staff has concluded that zonal price-capped load bidding, which permits market participants to specify the price level above which they will not pay for day-ahead energy, must be widely available before virtual bidding can be successfully implemented.[5]

NYISO staff informed the Market Structures Working Group ("MSWG") that it believed price-capped load bidding was a necessary prerequisite to virtual bidding on September 13. Consequently, a special Virtual Bidding Volunteer Group ("VBVG") was formed to explore the possibility of establishing an interim system that would allow for the early introduction of a limited amount of virtual bidding while price-capped load bidding mechanisms were being developed. After several months of careful discussion and review, the MSWG agreed with NYISO staff not to pursue an interim system. Instead, the MSWG voted for a simultaneous deployment of price-capped load bidding and virtual bidding in Fall 2001. The NYISO's Business Issues Committee ("BIC") modified the MSWG's decision and asked NYISO staff to implement zonal price-capped load bidding prior to Summer 2001 and to have virtual bidding operational by November 1, 2001. This plan has been accepted by the NYISO's Project Prioritization Team and Management Committee. As is noted below, NYISO staff intends to comply fully with these directives.

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[5] As is noted in Attachment A, although the NYISO-administered markets were designed to accommodate price-capped load bids, software limitations have thus far greatly restricted the availability of this mechanism.

V. Detailed Implementation Plan

NYISO staff has already begun to make the software changes necessary to introduce price-capped load bidding. This project has an extremely high priority because, in addition to its connection with virtual bidding, it is a key component of the NYISO's efforts to create an emergency demand response program in time for summer. NYISO staff's best estimate is that all necessary software and rule changes will be in place, and fully tested, by May 1, 2001. It does not appear that any tariff changes will be necessary to implement zonal price-capped load bids.[6]

NYISO staff has also established a detailed schedule for implementing virtual bidding. First, the NYISO will prepare a "straw man" document describing all of the market rule changes and additions that will be necessitated by virtual bidding. This document will be distributed to market participants on March 2, 2001. NYISO staff will then work with market participants from early March until mid-May to review and define the proposed market rules and to develop virtual bidding tariff language. This process will culminate in the completion of Concept of Operation and Function Requirements Specifications documents by late May, and the filing of proposed tariff amendments for the Commission's review by June 15. This filing date will give the Commission ample time to consider the proposed tariff changes and allow the NYISO time to make any required changes well in advance of the proposed November 1 date.

In late May, the NYISO will begin the process of implementing the software changes required to institute virtual bidding. These changes should be complete by the end of July. Extensive testing of the software modifications, and related market rule changes, will begin on August 1 and will run until the end of September. NYISO staff will report the results of these tests to market participants on October 1.

NYISO staff will also modify its Billing and Accounting System ("BAS") to accommodate virtual bidding. The necessary work in this area cannot be finished until market participants resolve a number of contentious issues concerning the allocation of costs associated with virtual bidding, *e.g.*, whether virtual bidders will be responsible for the cost of uplift or ancillary services. NYISO staff therefore estimates that it will not complete the required BAS modifications until December 31, 2001.

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[6] NYISO counsel is currently reviewing this issue. In the event that tariff changes are needed, the NYISO will file them by March 1, 2001.

This delay will not affect the proposed November 1 virtual bidding start date since it is possible to start virtual bidding without having final billing arrangements in place. However, the implementation of virtual bidding could be delayed if market participants are unable to expeditiously resolve cost allocation issues among themselves. NYISO staff encourages market participants to move quickly to address these issues.

For the Commission's convenience, NYISO staff has prepared the following timetable outlining its implementation plans. All of the dates specified below are estimates, but NYISO staff will strive to meet them and does not expect that there will be significant changes.

Expected Date	**Milestones & Actions**
Mar 2, 2001	Complete "strawman" document describing tentative new market rules with virtual bidding in place
Mar 5 – May 18, 2001	Work with market participants to define new market rules
May 18, 2001	Complete Concept of Operations document
May 22, 2001	Complete Function Requirements Specification document
May 23 – Jul 31, 2001	Implement required MIS, SCUC, and BME changes
May 23 – Oct 1, 2001	Prepare technical bulletin and training materials
May 23 – Dec 31, 2001	Implement required BAS changes
Jun 15, 2001	File tariff amendments necessary to institute virtual bidding
Aug 1 – Sep 28, 2001	Testing of software and market rule changes
Oct 1, 2001	Report test results to market participants
Nov 1, 2001	Deploy virtual bidding

VI. *Federal Register* Notice

A form of *Federal Register* Notice is provided as Attachment B hereto.

VII. Service

Copies of this filing are being served on all of the parties in Docket No. EL00-90-000.

VIII. Conclusion

WHEREFORE, for the foregoing reasons, the New York Independent System Operator, Inc. respectfully requests that the Commission accept the implementation plan described in this filing.

Respectfully submitted,

NEW YORK INDEPENDENT
SYSTEM OPERATOR, INC.

By _____
Counsel

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cc: Mr. Daniel L. Larcamp, Director Office of Markets, Tariffs and Rates, Room 8A-01, Tel. (202) 208-2088
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Ms. Andrea Wolfman, Office of the General Counsel , Room 101-29, Tel. (202) 208-2097

Attachment A

NYISO Staff Report on the Implementation of Virtual Bidding

Summary

The NYISO has worked diligently with its market participants to devise a plan to extend bidding to non-physical, *i.e.*, "virtual" entities. The NYISO recognizes that establishing "virtual sms may have a number of important benefits, including enhancing the liquidity of the NYISO-administered markets. At the same time, the NYISO has been mindful of the potential dangers if virtual bidding does not work as intended or is not properly coordinated with the rest of the NYISO's market design. In particular, the NYISO has determined that the introduction of zonal price-capped load bidding is a necessary prerequisite to the successful implementation of virtual bidding. Thus, the NYISO proposes to implement zonal price-capped load bidding no later than early Summer 2001. Virtual bidding would then be implemented in Fall 2001.

This report describes: (i) the efforts to date of the NYISO and interested market participants to develop a plan to implement "virtual bidding;" (ii) why it is necessary to have effective zonal price-capped load bidding mechanisms prior to the implementation of virtual bidding; and (iii) the NYISO's current implementation plans.

Background

The NYISO staff agrees with many New York market participants that it is desirable to find ways to increase the liquidity of the NYISO-administered markets. It is possible, as some market participants have previously argued, that day-ahead and real-time energy prices will more closely converge once certain liquidity enhancements are in place and the modeling differences between the NYISO's day-ahead and real-time scheduling and optimization systems, *i.e.*, the Security Constrained Unit Commitment, Balancing Market Evaluation and Security Constrained Dispatch systems, are eliminated.

In the short term, increased liquidity and price convergence will not necessarily lead to a lower, or higher, price. Energy prices in New York appear to be influenced more by fuel costs, an increasingly tight supply of generating capacity, constraints within the New York bulk power transmission network which can lead to congestion and the current lack of demand side response mechanisms. In the long term, however, it is clear that increased liquidity will enable generation developers to estimate more accurately the worth of badly needed new capacity and may facilitate the financing and construction of new generation in New York.

One step toward increased liquidity would be to increase market participants' ability to take an energy position, *i.e.*, to submit virtual bids, in the NYISO-administered day-ahead market. Virtual bidding would also ensure that all market participants enjoy equal bidding opportunities and flexibility.

Moreover, day-ahead energy prices are influenced by the amount of load that is bid. Underbidding tends to reduce day-ahead energy prices, while overbidding tends to increase day-ahead energy prices. A number of market participants have argued that limiting load bidding to physical entities gives them the ability to manipulate (lower) day-ahead energy price by underbidding. It is claimed that virtual bidding will eliminate this ability and lead to a more efficient, albeit higher, day-ahead energy price. The NYISO staff agrees that strategic underbidding is possible in the absence of virtual bidding, but emphasizes that the NYISO's market monitoring unit and independent market advisor have not detected any evidence of such behavior to date.

Although NYISO staff supports the implementation of virtual bidding, it has always insisted that the implementation effort proceed carefully in order to minimize the possibility of severe unintended consequences, especially in connection with irrational bidding behavior. As a general matter, irrational bidding behavior can have large price impacts. Irrational bidding can be the result, among other things, of honest mistakes, circumstances that make a seemingly rational bidding strategy irrational when it is simultaneously pursued by many participants and deliberate gaming. Virtual bidding would greatly increase the number of bidders and create new opportunities for irrational bidding. It could therefore cause market anomalies and, in some cases, jeopardize the NYISO's market management process and threaten reliability.

NYISO staff did not initially recognize all of the issues involved in establishing virtual bidding. However, NYISO staff has concluded that if virtual bidding were implemented before strengthened price-capped load bidding mechanisms were in place, market participants would be exposed to extreme price volatility. NYISO staff has discussed these issues with PJM's staff, which has already implemented and operates a virtual bidding function. Consistent with PJM staff's recommendations, NYISO staff has concluded that establishing improved price-capped load bidding mechanisms is a necessary prerequisite to the implementation of virtual bidding and that virtual load and virtual supply bidding should be deployed simultaneously, rather than in a staged manner. NYISO staff believes that this approach will ensure that a proper balance between load and generation is maintained under a virtual bidding regime.

The Importance of Enhancing Price-Capped Load Bidding Mechanisms

As the NYISO has noted in previous filings, the NYISO-administered markets were designed to accommodate participation by load resources using price-capped (or "price sensitive") load bids. Such bids were to be used by "physical" market participants to signal their willingness to pay for energy by declaring a price above which they will not purchase energy in the day-ahead market. While software limitations currently restrict the availability of the current bus-oriented price-capped load bidding capability the NYISO is working to expand its accessibility to support the development of price-responsive load programs. Without price-capped load bidding, virtual bidding may have severe unintended effects and market participants could be exposed to extreme price volatility.

A form of price-capped load bidding is currently available in the day-ahead energy market on a limited basis. This form of price-capped load is modeled at a specific location (bus) in the electrical network and is therefore very physical in nature. Because of its physical nature, and because it must be placed at a specific bus, bus-specific load has limited use. Bus-specific load poses no problem as long as it accurately reflects reality. However, as its use deviates from the load actually observed at specific points of the network, it can lead to unrealistic concentrations of load and prevent scheduling software from reaching a convergent solution. The amount of bus-specific price-capped load has recently been expanded to support price-responsive load programs, but it is not yet widely available. Even where bus-specific price-capped load bidding is available, there are strict limitations on bidding amounts which prevent the network from being unrealistically strained.

The NYISO is currently developing zonal price-capped load bidding mechanisms which will be available by Summer 2001. Under a zonal system, the price-capped load that is bid is apportioned among all the buses in a zone in a manner that realistically reflects the distribution of load actually observed in the zone. Thus unrealistic concentrations of load are avoided. The NYISO's scheduling and optimization software can therefore apply resources in a nearly optimum manner since no unrealistic constraints are imposed on the network by unrealistic loading patterns. Once zonal price-capped load bidding is available, it would be widely applied and would offer a basic, and important, protection. Specifically, with zonal price-capped load bidding in place, bidders would be able to designate the price above which they would not purchase energy in the day-ahead market. Market participants would therefore be protected from the extreme price fluctuations caused by irrational virtual bids or artificially high demand levels associated with virtual bidding.

Overview of the NYISO's Previous Implementation Efforts

On September 13, 2000, NYISO staff informed the Market Structures Working Group ("MSWG") of its conclusion that virtual bidding should not be implemented until price-capped load bidding was widely available. Some market participants objected to any delay in the implementation of virtual bidding and suggested that an interim system be designed that would allow a limited amount of virtual bidding until zonal price-capped load bidding was available. A subset of the MSWG, the Virtual Bidding Volunteer Group ("VBVG"), was formed to flesh-out the details of such an interim plan.

NYISO staff worked closely with the VBVG participants over several months. The VBVG met on September 19, October 5, November 6, and November 29 and devised an interim system for virtual bidding. The proposed interim system compensated for the absence of zonal price-capped load bidding by placing strict limits on the amount of virtual load that could be bid. Those limits would have been tied to the NYISO's forecast of the next day's load and would have been applied on a regional basis. It became apparent to NYISO staff that the implementation, and eventual elimination, of an interim system would require substantial effort, and would, indeed, be nearly as difficult as establishing a full virtual bidding system. Furthermore, the proposed limits on virtual bidding would only reduce, not eliminate, price anomalies caused by irrational bidding. Such limits therefore were not a satisfactory substitute for the protection of price-capped load bidding.

The VBVG's plan was submitted to the MSWG on December 6, 2000. At the MSWG meeting the NYISO staff expressed its concerns with the interim proposal and explained that it would prefer to develop complete virtual bidding and price-capped load bidding mechanisms. However, the NYISO staff also indicated that it would work to implement an interim virtual bidding system if market participants asked it to do so.

Some MSWG participants believed that making price-capped load bidding widely available, in the absence of virtual bidding, would lead to market distortions and give "physical" entities the ability to manipulate price by underbidding. It was therefore proposed that the NYISO should deploy zonal price-capped load bidding and virtual bidding simultaneously, or as nearly simultaneously as possible. This compromise was acceptable to the NYISO and was endorsed by the MSWG.

Subsequently, the NYISO presented the MSWG's simultaneous deployment proposal to the Business Issues Committee ("BIC") on December 12, 2000. The BIC did not accept the MSWG's compromise plan. Instead, it voted to deploy zonal price-capped load bidding as soon as possible, to be followed by virtual bidding when it became available. This decision was accepted by the NYISO's Project Prioritization Team, a special task force composed of the chairs and vice-chairs of all three NYISO market participant committees and senior NYISO staff which reviews market improvement projects and sets their relative priorities. The Management Committee has likewise acquiesced to this plan.

Current Implementation Schedule

Consistent with the foregoing, the NYISO's current plan is to introduce price-capped load bidding, and certain other measures that will enhance demand-side elasticity, prior to Summer 2001, and for virtual bidding to become operational by November 1, 2001. This schedule allows for the thorough testing of the NYISO-administered energy markets' behavior with virtual bidding in place. Testing will include the simulation of bidding scenarios chosen to expose weakness or undesired consequences of expanded bidding flexibility. Results of the test scenarios are to be shared with market participants.

Some necessary software changes have already been identified and are under way. For example, support for conventional or "positive" load and "negative" load, *i.e.*, generation, will be implemented in the day-ahead scheduling and optimization software as part of the zonal price-capped load project. However, the effort to roll out virtual bidding extends well beyond any coding changes that may be required. Other efforts must be applied: (i) to deciding, in consultation with market participants, whether virtual bidders will have responsibility for cost of uplift or ancillary services; (ii) to thorough testing; and (iii) to the development of emergency procedures in the event that available generation simply cannot support the amount of load requested.

As is discussed in the filing letter to which this report is attached, NYISO staff intends to adhere to the following implementation timetable.

Expected Date	Milestones & Actions
Mar 2, 2001	Complete "strawman" document describing tentative new market rules with virtual bidding in place
Mar 5 – May 18, 2001	Work with market participants to define new market rules
May 18, 2001	Complete Concept of Operations document
May 22, 2001	Complete Function Requirements Specification document
May 23 – Jul 31, 2001	Implement required MIS, SCUC, and BME changes
May 23 – Oct 1, 2001	Prepare technical bulletin and training materials
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Jun 15, 2001	File tariff amendments necessary to institute virtual bidding
Aug 1 – Sep 28, 2001	Testing of software and market rule changes
Oct 1, 2001	Report test results to market participants
Nov 1, 2001	Deploy virtual bidding

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in Docket No. EL00-90-000, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure 18 C.F.R. § 2010 (1999).

Dated at Washington, D.C. this 2nd day of February, 2001.

_____

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Morgan Stanley Capital Group, Inc.	**)**	
	)	
vs.	**)**	**Docket No. EL00-90-000**
	)	
New York Independent System Operator, Inc.	**)**	

NOTICE OF FILING

Take notice that on February 2, 2001, the New York Independent System Operator, Inc. ("NYISO"), filed a report on its implementation of virtual bidding and zonal price capped load bidding in compliance with the Commission's October 5, 2000 order in the above-captioned proceeding. *Morgan Stanley Capital Group, Inc. v. New York Independent System Operator, Inc.*, 93 FERC ¶ 61,017 (2000).

A copy of this filing was served upon all parties in Docket No. EL00-90-000.

Any person desiring to be heard or to protest this filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure 385.211 and 385.214). All such motions or protests should be filed on or before _____. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this application are on file with the Commission and are available for public inspection.

David P. Boergers
Secretary