

128 FERC ¶ 61,049  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;  
Sudeen G. Kelly, Marc Spitzer,  
and Philip D. Moeller.

New York Independent System Operator, Inc.

Docket No. ER08-1281-000

ORDER AUTHORIZING PUBLIC DISCLOSURE OF ENFORCEMENT  
STAFF REPORT AND DIRECTING THE FILING OF AN ADDITIONAL REPORT

(Issued July 16, 2009)

1. In this order, we authorize the public disclosure of the attached Office of Enforcement Staff Report (OE Report) addressing its non-public investigation of alleged market manipulation in the placing of circuitous schedules in the Lake Erie region. These schedules traversed the systems of one or more regional transmission organizations (RTOs), and were alleged to create substantial amounts of loop flow. For the reasons discussed below, we adopt the OE Report's findings and conclusions that there was neither market manipulation nor tariff violations on the part of the entities placing these schedules. In addition, we have decided not to take further action on certain other tariff violation claims raised by intervenors in protests filed in the instant proceeding in response to the NYISO's initial, interim tariff filing in this proceeding addressing the occurrence of inappropriate Lake Erie region loop flows.<sup>1</sup> Finally, we take action in

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<sup>1</sup> See *New York Independent System Operator, Inc.*, 124 FERC ¶ 61,174 (2008) (August 21, 2008 Order) (accepting interim tariff revisions effective July 22, 2008, through November 18, 2008, submitted pursuant to the "exigent circumstances" provisions of the Independent System Operator Agreement, which revisions preclude the scheduling of flows over eight different NYISO transmission paths in the Lake Erie region, based on the existence of more direct routing option reaching PJM Interconnection, L.L.C. (PJM)), *order on clarification*, 126 FERC ¶ 61,068, *order on clarification*, 127 FERC ¶ 61,147 (2009). On October 31, 2008, NYISO filed to implement permanent tariff revisions precluding scheduling flows over the same eight paths, in Docket No. ER09-198-000, *et al.*, which the Commission accepted effective November 19, 2008, in an order issued November 17, 2008. See *New York Independent System Operator, Inc.*, 125 FERC ¶ 61,184 (2008) (November 17, 2008 Order).

response to protests to that filing calling for long term solutions to the loop flow problem and require the New York Independent System Operator, Inc. (NYISO) to develop with its neighboring RTOs a long-term comprehensive solution to the loop flow problem, including addressing interface pricing and congestion management, and to file a report, including any associated tariff revisions, with the Commission detailing such solutions within 180 days of the date of this order, consistent with the Commission's directives below as well as the directives in the August 23, 2008 and November 17, 2008 Orders.

2. The investigation in this matter began at the request of the NYISO Market Monitoring and Performance Department (MMP), following an informal notification provided by the MMP, in May 2008, and a subsequent written referral submitted June 30, 2008. A second referral, on a related matter, was received from Potomac Economics, Inc., the independent market monitor of the Midwest Independent Transmission System Operator, Inc. (Midwest ISO). The investigation of the matters raised by these referrals was conducted by the Commission's Office of Enforcement Staff as nonpublic in accordance with Rule 1b.9 of the Commission's regulations.<sup>2</sup>

3. The OE Report concludes that the uplift<sup>3</sup> experienced by the NYISO's customers, as a result of Lake Erie region scheduling practices, between January 1, 2008 and July 22, 2008, was due, in substantial part, to: (i) the lack of seams coordination among the NYISO and neighboring RTOs, namely, between NYISO, PJM, the Midwest ISO, and Ontario's Independent Electricity System Operator; (ii) the incentives created by certain proxy bus pricing changes that the NYISO put into effect in 2007; and (iii) the NYISO's methodology for incorporating loop flow in NYISO's day-ahead modeling.<sup>4</sup> The OE Report further concludes that, while the circuitous schedules examined in the investigation did appear to contribute to loop flow, they were openly placed as an economic response to price signals and did not constitute a fraudulent device, scheme or artifice.<sup>5</sup> The OE Report also concludes that market participants are not well situated to

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<sup>2</sup> 18 C.F.R. § 1b.9 (2008).

<sup>3</sup> Under NYISO's market rules, all resources that are committed by NYISO and/or instructed by NYISO to produce energy are guaranteed to receive at least enough revenue to cover their full as-bid costs. To the extent that revenues from marginal locational prices do not fully cover such as-bid costs, the resource will receive an additional payment from NYISO. This additional payment is a bid production guarantee payment, but is also commonly referred to as an "uplift payment" or "uplift." See August 21, 2008 Order, 124 FERC ¶ 61,174 at P 4, n. 6.

<sup>4</sup> OE Report at 6-11.

<sup>5</sup> *Id.* at 25.

predict or otherwise identify loop flow effects in real time.<sup>6</sup> The OE Report concludes that the market participants responsible for these scheduling practices did not commit any tariff violations or violate the Commission's anti-manipulation rule.<sup>7</sup>

4. We find that the OE Report's analysis, findings and conclusions are well-reasoned. Accordingly, we adopt the OE Report as our own.<sup>8</sup> In response to intervenors' assertions of tariff violations or market manipulation by market participants in the placement of scheduling requests, we thus find that no further action (including the awarding of refunds, disgorgement of profits, civil penalties, mitigation measures, or other requested remedies) is warranted.

5. In addition, we have decided not to take further action to address the other claims of tariff violations raised in the protest of the Multiple Intervenors to NYISO's proposed tariff revisions in this proceeding.<sup>9</sup> In their protest, Multiple Intervenors contended that the circuitous scheduling appeared to violate sections 3.2.1 and 3.2.3 of NYISO's Market Administration and Control Areas Services Tariff (Services Tariff).<sup>10</sup> The cited provisions are part of NYISO's Attachment H rules, which are intended to mitigate the market effects of certain specific conduct that would substantially distort competitive outcomes, and provide price or uplift cost impact thresholds before mitigation may be applied. The protest claimed that NYISO violated the cited sections by not imposing mitigation for loop flow scheduled transactions that the protest claimed caused material changes in prices associated with NYISO administered markets, i.e., a more than a 200 percent increase in uplift charges. Contrary to the protest, however, the provisions cited by the protest do not require mitigation to apply to any and all conduct simply because that conduct may cause a material change in price; the conduct must be that specified in Attachment H for the price impact limits to apply. Section 2.4(a) of Attachment H of the Services Tariff only applies mitigation for three specific types of conduct: physical

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<sup>6</sup> *Id.* at 30-31.

<sup>7</sup> *Id.* at 36.

<sup>8</sup> Nothing herein shall be construed to make public any other document related to the investigation, including any document or information obtained during the course of the investigation. *See* 18 C.F.R. § 1b.9 (2008).

<sup>9</sup> Multiple Intervenors are an unincorporated association of over 50 large industrial, commercial and institutional energy consumers with manufacturing and other facilities located throughout New York State.

<sup>10</sup> Multiple Intervenors Protest at 12-13.

withholding, economic withholding, or uneconomic production of electric facilities.<sup>11</sup> The protest never alleged that the conduct of the parties met these specific conduct requirements of the tariff and only averred that the price impact thresholds were met. Moreover, the OE Report findings do not support the protest. Accordingly, we find that NYISO did not violate the market power mitigation provisions of its tariff.

6. Finally, we take action here on protests to NYISO July 21, 2008 filing in this proceeding calling for long term solutions to the loop flow problem.<sup>12</sup> We reaffirm our prior directives in the August 23, 2008 and November 17, 2008 Orders requiring NYISO to continue to work with its Market Participants, the North American Electric Reliability Corporation (NERC), and neighboring RTOs to develop long-term comprehensive solutions to the loop flow problem through a collaborative process.<sup>13</sup> We understand from NYISO's report filed in compliance with the November 17, 2008 Order that these efforts are on-going, the entities involved in this process are numerous, and the issues presented are both long-standing and complex, and include interface pricing and congestion management.<sup>14</sup> Nevertheless, because such efforts have been on-going for over a year with no resolution, we direct NYISO to expeditiously develop long-term comprehensive solutions to the loop flow problem with its neighboring RTOs, including addressing interface pricing and congestion management. Accordingly, we direct NYISO to file a report with the Commission detailing such solutions, including any needed tariff revisions, within 180 days of the date of this order. We encourage all interested parties to pursue a constructive, workable consensus addressing these matters as expeditiously as possible. If NYISO is not able to develop a resolution, we will take such further action as may be appropriate following receipt of NYISO's report.

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<sup>11</sup> Services Tariff, Fourth Revised Sheet No. 467A and Fourth Revised Sheet No. 468.

<sup>12</sup> See August 21, 2008 Order, 124 FERC ¶ 61,174 at P 27.

<sup>13</sup> See August 21, 2008 Order, 124 FERC ¶ 61,174 at P 28; November 17, 2008 Order, 125 FERC ¶ 61,184 at P 20 (requiring the NYISO to submit a 90-day report addressing its progress in developing loop flow solutions).

<sup>14</sup> See NYISO 90-Day Report, Docket No. ER09-198-000 (February 17, 2009).

The Commission orders:

(A) The attached OE Report is hereby publicly disclosed.

(B) NYISO is hereby directed to develop and file a report on long-term comprehensive solutions to the loop flow problem, including addressing interface pricing and congestion management, and any associated tariff revisions, within 180 days of the date of this order, as more fully described above.

By the Commission.

( S E A L )

Kimberly D. Bose,  
Secretary.

**FEDERAL ENERGY REGULATORY COMMISSION**

**Non-Public Investigation into Allegations of Market Manipulation in  
Connection with Lake Erie Loop Flows**



Enforcement Staff Report

Office of Enforcement  
Division of Investigations

Docket No. ER08-1281-000

June 10, 2009

## I. Executive Summary

In May of 2008, the Market Monitoring and Performance Department (MMP) of the New York Independent System Operator, Inc. (NYISO) referred allegations of market manipulation to the Commission's Office of Enforcement(OE).<sup>1</sup> The MMP stated that certain market participants, beginning in January of 2008, were engaging in inter-control area transactions that allegedly exploited a seam in the pricing methods used by NYISO, PJM Interconnection, L.L.C. (PJM), the Midwest Independent Transmission System Operator, Inc. (MISO) and Ontario's Independent Electricity System Operator (IESO). MMP alleged that these market participants were disguising the true source or sink of the schedules at issue, and that the schedules resulted in physical flows substantially at variance from scheduled flows.<sup>2</sup> The MMP contended that the pricing seam it identified can result in market inefficiencies, and stated its belief that the scheduling transactions may violate the Commission's rule against market manipulation.<sup>3</sup>

The MMP identified two contract paths it believed were creating the market inefficiencies, and opined that there might be more paths of which it was unaware. The two paths identified were Path 1, which was scheduled from NYISO-IESO-MISO-PJM, and Path 5, which was scheduled from PJM-NYISO-IESO-MISO.<sup>4</sup> The MMP also provided as a hypothetical example another transaction, involving a MISO-IESO-NYISO schedule combined with a NYISO-IESO-MISO-PJM schedule (i.e., sinking into NYISO and sourcing out of NYISO in the reverse direction). However, it did not identify any actual schedules of this type.<sup>5</sup> The

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<sup>1</sup> The MMP's draft written referral was received on June 10, 2008, and its finalized written referral on June 30, 2008.

<sup>2</sup> In its written referral, the MMP also separately raised allegations of possible "wash" transactions into and out of New York. These allegations are distinct from its allegations involving circuitous schedules, and OE staff is investigating them separately.

<sup>3</sup> New York Independent System Operator, Inc. Market Monitoring and Performance Department Referral of Matter to the Federal Energy Regulatory Commission's Office of Enforcement, June 30, 2008 at 2 (NYISO Referral).

<sup>4</sup> The labeling nomenclature derives from a subsequent filing made by NYISO with the Commission, discussed *infra*.

<sup>5</sup> NYISO Referral at 7-8.

MMP identified twelve market participants it claimed had scheduled Path 1 transactions, and two market participants it claimed had scheduled Path 5 transactions.<sup>6</sup> (OE staff later determined, and NYISO concurred, that nine participants, rather than twelve, had completed Path 1 transactions. OE staff also detected a small amount of Path 5 transactions by a third entity).

All of these paths are located in the Lake Erie region. Because there are no transmission lines under or over the lake, flows in this area split, with a portion of the power flowing clockwise around the lake and a portion flowing counterclockwise. Loop flow, which is defined as the difference between scheduled and actual flow on a path or interface,<sup>7</sup> has historically been both common and extremely volatile in this region, varying from 2000 MW in a clockwise direction to 2000 MW in a counterclockwise direction,<sup>8</sup> and swinging by as much as 1000 MWs in a couple of hours.<sup>9</sup> In 2007, and historically, Lake Erie loop flow was more commonly counterclockwise, which NYISO prefers because loop flow in that direction tends to reduce congestion on NYISO's west-to-east and north-to-south transmission constraints.<sup>10</sup> However, NYISO admits that while counterclockwise loop flow helps its own congestions patterns, it conversely tends to hurt PJM and MISO.<sup>11</sup>

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<sup>6</sup> NYISO Referral at 30.

<sup>7</sup> Investigation of Loop Flows across Combined Midwest ISO and PJM Footprint (drafted jointly by PJM and MISO), May 25, 2007 at 7 (Loop Flow Study).

<sup>8</sup> NYISO Response to Staff Data Request 2 (Oct. 20, 2008).

<sup>9</sup> Loop Flow Study at 25.

<sup>10</sup> New York Independent System Operator, Inc.'s Exigent Circumstances Filing Requesting Authority to Amend its Tariffs to Preclude the Scheduling of Certain External Transactions, Requesting Prospective Limited Tariff Waivers, Seeking Expedited Commission Action, Requesting Shortened Notice and Comment Periods, and Contingent Request for Consideration Under Section 206 of the Federal Power Act, Docket No. ER08-1281-000 (July 21, 2008) at 10 (Exigent Circumstances Filing).

<sup>11</sup> Telephone Conference with Rick Gonzales, NYISO Vice President of Operations, and Elaine Robinson, NYISO Director of Regulatory Affairs (April 13, 2009).

On July 21, 2008, NYISO filed a request with the Commission to permit it to prohibit eight types of schedules (Exigent Circumstances Filing). All of these schedules are circuitous in nature; that is, they traverse one or more control areas between source and sink.<sup>12</sup> For each of them, NYISO states there is a more direct scheduling path.<sup>13</sup> Of these types of schedules, NYISO has identified only two paths for which there have been completed transactions, those being Path 1 and Path 5.<sup>14</sup> The vast majority of the completed transactions have been over Path 1. From December 2007 through July of 2008, there were a total of 3,998,804 MWh of scheduled Path 1 transactions, and a total of 337,691 MWh of scheduled Path 5 transactions.<sup>15</sup>

NYISO contended in its Exigent Circumstances Filing that the circuitous schedules caused additional clockwise loop flow around Lake Erie. It further contended that as a result of the flows, NYISO performed significant additional redispatch to address congestion, thereby increasing the costs of uplift to NYISO customers.<sup>16</sup>

Various intervenors in the Exigent Circumstances Filing requested the Commission to institute an investigation into the transactions alleged by NYISO to have occurred. The Commission accepted NYISO's proposed tariff revisions, initially on an interim basis, and revealed that the Office of Enforcement had begun a non-public investigation under Part 1b of the Commission's regulations into the scheduling of flows over the circuitous paths such as those addressed in

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<sup>12</sup> Thus these transactions, which were each placed on a single NERC tag, employ "wheels," or the scheduling of transmission across intervening control areas.

<sup>13</sup> Exigent Circumstances Filing at 4.

<sup>14</sup> NYISO Response to Staff Data Request 19 (Oct. 20, 2008).

<sup>15</sup> OE staff exhibit utilizing data from NYISO Corrected and Expanded Response to Staff Data Request 22 (Nov. 17, 2008). These numbers should perhaps best be viewed as approximations, as the compiled tag data from NYISO and MISO did not exactly match with respect to scheduled transactions. OE staff does not have completed transaction data from MISO.

<sup>16</sup> Exigent Circumstances Filing at 13.

the filing. The Commission stated that it would determine what further action might be appropriate after it considered the results of OE staff's investigation.<sup>17</sup>

During its investigation, OE staff submitted data requests to NYISO, PJM, MISO and IESO. It also submitted data requests to all of the market participants alleged to have placed the circuitous schedules, and met with representatives of two of them. In addition, it conducted numerous inquiries of the market monitors for the various regional transmission organizations and independent system operators (collectively referred to for convenience as RTOs), the North American Electric Reliability Corporation (NERC), and Open Access Technology International, Inc. (OATI). OE staff has to date reviewed over 202,700 pages of data, several audio files and over 900 sets of spreadsheets, and has reconfigured several compilations of raw data to enable it to analyze the claims of NYISO and of the market participants.

In the course of examining the foregoing materials, OE staff discovered other configurations of circuitous transactions in addition to those cited by NYISO, and received a referral from Potomac Economics, Inc. (Potomac Economics), the Independent Market Monitor for MISO,<sup>18</sup> regarding Path 1 and Path 5 transactions being placed in the same hour by one entity. Staff extended its investigation to consider the propriety of these various transactions as well. The additional configurations are discussed in a separate section following the examination of the Path 1 and Path 5 transactions identified in NYISO's Exigent Circumstances Filing.

As a result of the information analyzed, OE staff has concluded that the market participants placing the schedules at issue did not commit any tariff violations. OE staff further concluded that market participants were openly responding to price signals, were not artificially affecting those signals or deliberately affecting congestion in order to raise prices, and did not commit market manipulation. The uplift experienced by NYISO customers was in substantial part a result of the following elements: (i) lack of seams coordination among the RTOs in the region,<sup>19</sup> (ii) the incentives created by certain proxy bus

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<sup>17</sup> *New York Indep. Sys. Operator, Inc.*, 124 FERC ¶ 61,174 at P 32 (2008). The Commission later accepted the tariffs on an indefinite basis. *New York Indep. Sys. Operator, Inc.*, 125 FERC ¶ 61,184 (2008).

<sup>18</sup> Potomac Economics is also the external market monitor for NYISO.

<sup>19</sup> PJM and MISO have made strides in addressing these issues by entering into a congestion management process between themselves. *See* Joint Operating (continued...)

pricing changes NYISO put into effect in 2007, and (iii) NYISO's methodology for incorporating loop flow into NYISO's day-ahead modeling, which was done on a 90-day historical rolling average.<sup>20</sup> OE staff also concluded that while the circuitous schedules did appear to contribute to loop flow, market participants are not well situated to try and predict loop flow effects in real time, which are dependent on a complex interaction of ever-changing system configurations and schedules.

In its order accepting NYISO's above-referenced tariffs on an indefinite basis, the Commission directed NYISO to work with its market participants, NERC, and neighboring RTOs to develop potential solutions to the loop flow problem, including an inter-RTO congestion management process, and to report back to the Commission on its progress.<sup>21</sup> On February 17, 2009, NYISO filed its report.<sup>22</sup> It stated that it had held several meetings with its stakeholders on loop flow topics, including a consideration of potential benefits of changing NYISO's pricing method for external transactions. With respect to a prospective congestion management process, NYISO reported it had engaged in teleconferences with PJM to work out various issues. An examination of NYISO's referenced website materials indicates that the congestion management process that NYISO contemplates does not at this point call for regularizing the different pricing

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Agreement Between the Midwest Independent System Operator, Inc. and PJM Interconnection, Inc., December 30, 2003 (effective Mar. 1, 2004) (JOA); Midwest ISO FERC Electric Tariff, First Revised Rate Schedule No. 5 and PJM Interconnection, L.L.C. FERC Electric Tariff, First Revised Rate Schedule No. 38. Phase II of this agreement provides, among other things, for coordinated dispatch to address loop flow and also addresses cost allocation, based on an agreed-upon historical usage of the transmission facilities in question. This market-to-market congestion management process portion of the JOA was put into place on April 1, 2005. See *Midwest Indep. Transmission Sys. Operator, Inc., PJM Interconnection, L.L.C.*, 110 FERC ¶ 61,226 (2005).

<sup>20</sup> NYISO has since adopted a 30-day rolling average "look back" for loop flow. NYISO Response to Staff Data Request 3 (Oct. 28, 2008).

<sup>21</sup> *New York Indep. Sys. Operator, Inc.*, 125 FERC ¶ 61,184 at P 20 (2008).

<sup>22</sup> New York Independent System Operator, Inc.'s 90 Day Report on Efforts to Develop Long-Term Solutions to Lake Erie Circulation and Inter-ISO/RTO Congestion Management Processes, Docket No. ER09-198-000 (Feb. 17, 2009) (NYISO 90 Day Report).

structures or the modeling of phase angle regulators (PARs)<sup>23</sup> between the two RTOs.<sup>24</sup> However, subsequent to the filing of this report, Rick Gonzales, Vice President of Operations for NYISO, reported to OE staff that the four RTOs in the Lake Erie region held a meeting and made some initial progress on developing an inter-regional system of identifying and accounting financially for loop flows.<sup>25</sup>

## II. Background

This section describes the following: the events that induced market participants to place circuitous schedules in the first half of 2008, the relationship of those schedules to loop flow, NYISO's actions in response both to the conditions that created the incentives and to the schedules themselves, and the effect of the schedules on uplift charged to NYISO customers.

### A. Causation and Loop Flow

The chain of events that led to the increase in circuitous schedules in the first half of 2008 began, as NYISO agrees, with its decision to alter the pricing methodology for the proxy bus between NYISO and PJM (Keystone Proxy Bus).<sup>26</sup> This action was undertaken in the summer of 2007 to reflect a change in the operating protocols for the PARs in the area.<sup>27</sup> An unintended effect of the change

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<sup>23</sup> PARs are electro-mechanical devices that change the impedance on the system, and under specified circumstances they can alter the direction of flows. Loop Flow Study at 5.

<sup>24</sup> Emilie Nelson, NYISO Supervisor of Commitment Analysis, Market Operations, "NYISO-PJM Congestion Management Process," Technical Conference on Congestion Management Protocol (Feb. 12, 2009) at 10.

<sup>25</sup> Telephone conference with Rick Gonzales, NYISO Vice President of Operations, and Elaine Robinson, NYISO Director of Regulatory Affairs (April 13, 2009). No subsequent meetings have yet been held to follow up on this initiative, to OE staff's knowledge.

<sup>26</sup> NYISO Referral at 9.

<sup>27</sup> NYISO Response to Staff Data Request 14 (Oct. 28, 2008). The change in proxy bus methodology, activated on June 6, 2007, was expected to change prices and increase imports. See draft power point exhibit entitled "PJM Proxy Bus Pricing Enhancements – Post Implementation Review," NYISO Market

(continued...)

was to cause a divergence between the prices at the Keystone proxy bus and the proxy bus between NYISO and IESO (Bruce Proxy Bus) during times of significant internal congestion.<sup>28</sup> This divergence increased during the last quarter of 2007,<sup>29</sup> and resulted in prices being substantially lower at the Bruce Proxy Bus.

NYISO believes the resulting incentive to buy from the Bruce Proxy Bus rather than the Keystone Proxy Bus was exacerbated by an earlier elimination of regional through and out rates for transactions traversing MISO and sinking in PJM.<sup>30</sup> This elimination of pancaked rates at the MISO/PJM seams had been approved by the Commission effective April 1, 2004.<sup>31</sup> (Given the effective date of the transmission rate change, this was clearly not sufficient by itself as an incentive for the Path 1 transactions.)

The last element NYISO cites as a contributing factor in the onset of Path 1 transactions is the difference in interface pricing methodologies among the RTOs. Currently, PJM and MISO use what has been referred to as Tag Based Pricing, which settles a transaction based on the control area from which the power is dispatched or the control area of the load that is being served, in accordance with the NERC tag information. NYISO and IESO use Interface Pricing, which economically evaluates import and export bids based on the location at which the power is either entering or leaving a given control area.<sup>32</sup> With respect to Path 1 transactions, which formed the bulk of the transactions complained of by NYISO, PJM priced the transactions based on their having originated in NYISO. Its price for NYISO-sourced transactions is a unitary one, which is closer to the Keystone Proxy Bus price than it is to the Bruce Proxy Bus price. Before these transactions were prohibited, a market participant was thus able to purchase power from NYISO at its lower Bruce Proxy Bus price and schedule it to PJM, where it

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Issues Working Group (Oct. 17, 2007), NYISO Response to Staff Data Request 14 (Oct. 28, 2008), at Bates Nos. 14\_00062-86.

<sup>28</sup> NYISO Referral at 9.

<sup>29</sup> NYISO Response to Staff Data Request 14 (Oct. 28, 2008).

<sup>30</sup> NYISO Response to Staff Data Request 15 (Oct. 20, 2008).

<sup>31</sup> See *Midwest Indep. Transmission Sys. Operator*, 105 FERC ¶ 61,212 at PP 14-16 (2003).

<sup>32</sup> NYISO Referral at 3-4.

received PJM's substantially higher unitary NYISO price.<sup>33</sup> The following map depicts the geographic area involved in these transactions and the tie lines for transactions sourced out of the Bruce Proxy Bus and the Keystone Proxy Bus:<sup>34</sup>

#### NYISO Tie Lines with Ontario and PJM



Yellow arrows represent tie lines with Ontario and Blue arrows represent tie lines with PJM

A few circuitous transactions were placed in 2007, but the bulk of them began in January of 2008, reaching their largest amount in May of 2008, and then tapering off through June and July (the transactions were prohibited effective July 22, 2008).<sup>35</sup> Loop flows around Lake Erie have historically been quite volatile,<sup>36</sup> with the direction as well as magnitude changing frequently.<sup>37</sup> The direction on

<sup>33</sup> NYISO Referral at 9.

<sup>34</sup> Source:

<http://www.cnn.com/interactive/maps/us/blackout.map/frame.set.exclude.html>.

<sup>35</sup> Statistics are derived from an OE staff exhibit utilizing data from NYISO Corrected and Expanded Response to Staff Data Request 22 (Nov. 17, 2008).

<sup>36</sup> NYISO Response to Staff Data Request 2 (Oct. 20, 2008).

<sup>37</sup> Loop Flow Study at 43. Loop flows sometimes swing by 1000 MWs over the space of a couple of hours. *Id.*

average has usually been counterclockwise.<sup>38</sup> However, it flipped from counterclockwise to clockwise during the last ten days of December 2007, and persisted on the average in a clockwise direction through the date of the Exigent Circumstances Filing.<sup>39</sup> Interestingly, this initial change in direction cannot be attributed to the circuitous schedules, as no Path 1 or Path 5 transactions were placed in the last ten days of December 2007. The cause of the initial flip remains a mystery to NYISO. That does not mean, however, that the circuitous schedules did not contribute to Lake Erie loop flow.

Using archived metered data,<sup>40</sup> NYISO has calculated a 72% correlation between Path 1 transactions that were scheduled (not necessarily flowed) in 2008 and loop flow for that same period.<sup>41</sup> NYISO has also calculated that approximately 80% of scheduled power between the NYISO and PJM control areas physically flowed over their common border. That would mean that approximately 20% of the MWs scheduled on Path 1 followed the contract path.<sup>42</sup> Furthermore, after the Path 1 and Path 5 schedules were prohibited in July of 2008, NYISO detected a change from a predominantly clockwise direction of loop flow to a predominantly counterclockwise direction, reporting on average 67 MW of hourly counterclockwise flow for the period from July 23, 2008 through July 29, 2008.<sup>43</sup>

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<sup>38</sup> In 2007, NYISO experienced, on average, approximately 500 MW per hour of loop flow in a counterclockwise direction. NYISO Referral at 19.

<sup>39</sup> *Id.*

<sup>40</sup> NYISO performs real time metering every six seconds, which information is used on an automated basis to adjust dispatch in real time to account for actual conditions on the system.

<sup>41</sup> Exigent Circumstances Filing at 5-16.

<sup>42</sup> *Id.* at 16. This calculation makes certain assumptions about the use of PARs controlled by NYISO, and thus does not represent the system in a natural state or, necessarily, in the state in which it would be operated on any given day.

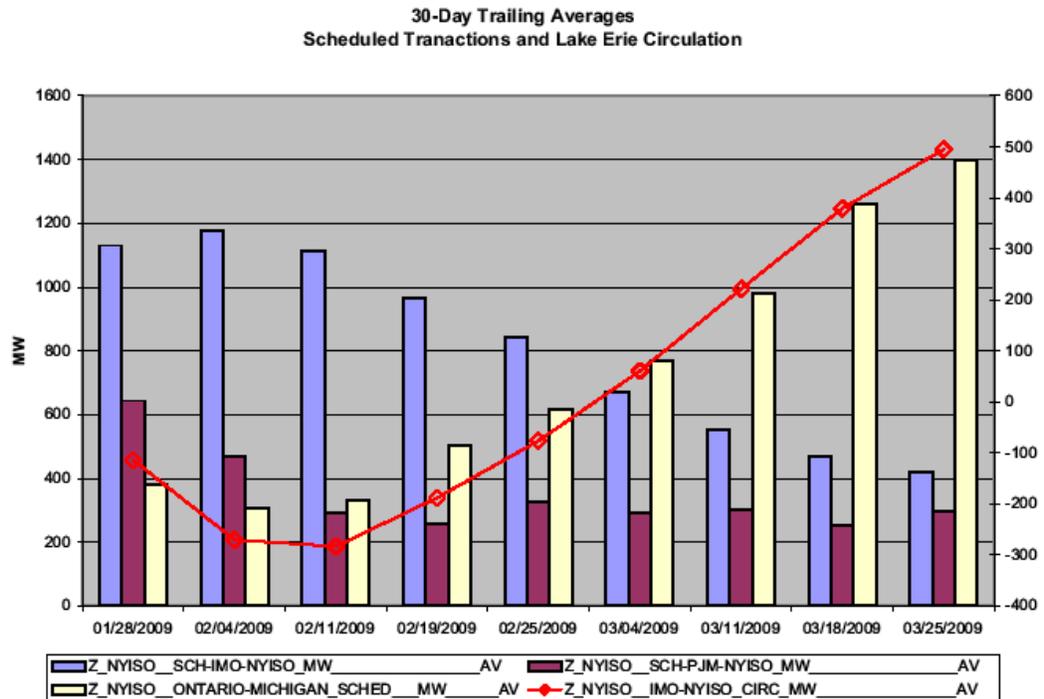
<sup>43</sup> NYISO Report on Lake Erie Circulation Following New York Indep. Sys. Operator., Inc. Implementation of Proposed Tariff Rules on July 22, 2008, Docket No. ER08-1281-000 (July 22, 2008). NYISO reported that hourly flows were variable, ranging from an hourly average of 1069 MW clockwise to 1143 MW counterclockwise.

Significantly, Lake Erie loop flows again reversed to a predominantly clockwise direction at the beginning of March 2009. The paths prohibited in the Exigent Circumstances filing remain prohibited, so they were not the cause of this latest change in direction. Data from NYISO suggests that an increase in schedules from Ontario to MISO and a decrease in schedules from Ontario to NYISO may have contributed to this reversal.<sup>44</sup> By the last week of March the clockwise flows had reached an average of 600 MW.<sup>45</sup> A bar graph developed by NYISO and submitted at its March 25, 2009 Management Committee meeting illustrates the pattern of loop flow for February and March 2009 (zero on the right axis shows the point where loop flow transited from counterclockwise to clockwise):

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<sup>44</sup> NYISO states that this change has had no effect on uplift because of NYISO's current methodology for modeling loop flow in the day-ahead market. Telephone conference with Rick Gonzales, NYISO Vice President of Operations, and Elaine Robinson, NYISO Director of Regulatory Affairs (April 13, 2009). As noted above, NYISO changed from a 90-day rolling average "look back" to a 30-day rolling average "look back" on August 6, 2008, after its Exigent Circumstances Filing had been made. NYISO Response to Staff Data Request 3 (Oct. 28, 2008).

<sup>45</sup> NYISO Management Committee bar graph presentation, "30-Day Trailing Averages Scheduled Transactions and Lake Erie Circulation" (Mar. 25, 2009); telephone conference with Alex Schnell, attorney for NYISO (April 2, 2009); and telephone conference with Rick Gonzales, NYISO Vice President of Operations and Elaine Robinson, NYISO Director of Regulatory Affairs (April 13, 2009). Each data point by date represents the average of the previous 30 days. The clockwise direction persisted into April, although at reduced MW levels. NYISO Technical Information Exchange, "Tie List Announcement for Lake Erie Circulation Assumption 4/29/09" (May 4, 2009). (There had also been a less significant amount of clockwise loopflow for three weeks in January of 2009, reaching a high of 100 MW. NYISO Technical Information Exchange, "Tie List Announcement for Lake Erie Circulation Assumption 4/8/09" (April 6, 2009).)



It thus appears that although the circuitous schedules may well have been a contributing factor in the Lake Erie loop flows in the first half of 2008, they were certainly not the entire reason for those flows. It is equally clear that many other transactions and conditions can and do result in Lake Erie loop flows, and isolating precise causes is therefore problematic.

**B. NYISO Response to Events and Uplift**

Although the change in methodology for calculating prices at the Keystone Proxy Bus caused its prices to diverge from those at the Bruce Proxy Bus, NYISO did not anticipate the possibility that this would create an incentive to schedule power from the western end of New York through Ontario.<sup>46</sup> Consequently, it did not monitor to see whether market participants might be responding to that incentive, or whether scheduling power to PJM from that interface, rather than from the Keystone Proxy Bus, might have impacts on loop flow and indirectly on NYISO congestion.

<sup>46</sup> NYISO Response to Staff Data Request 14(c) (Oct. 28, 2008).

The effects of this lack of monitoring were exacerbated by the nature of NYISO's procedure for incorporating the effects of loop flow in its day-ahead modeling. At the time of the events in question, NYISO employed a 90-day rolling average "look back" for loop flow,<sup>47</sup> which means that the day-ahead model did not account fully for recent loop flow trends, even if they appeared to persist over time, unless those trends had extended out for 90 days. The effect of that was to increase the Balancing Market Congestion Residual component of uplift in the first half of 2008 (increases or decreases in costs stemming from the redispatch of generation in real time is collected under this component<sup>48</sup>). NYISO's 90-day rolling average procedure was unlike that of either MISO or PJM, both of which examine the need to make adjustments to their day-ahead models on a daily or as-needed basis.<sup>49</sup>

In any event, NYISO uplift increased in January of 2008, dipped in February and March, rose slightly in April and soared in May, dropping back a bit in June and July. The following chart graphically depicts Path 1 and Path 5 transactions, average hourly loop flow and the Balancing Market Congestion Residual component of uplift, all for the period of December 2007 through July of 2008:<sup>50</sup>

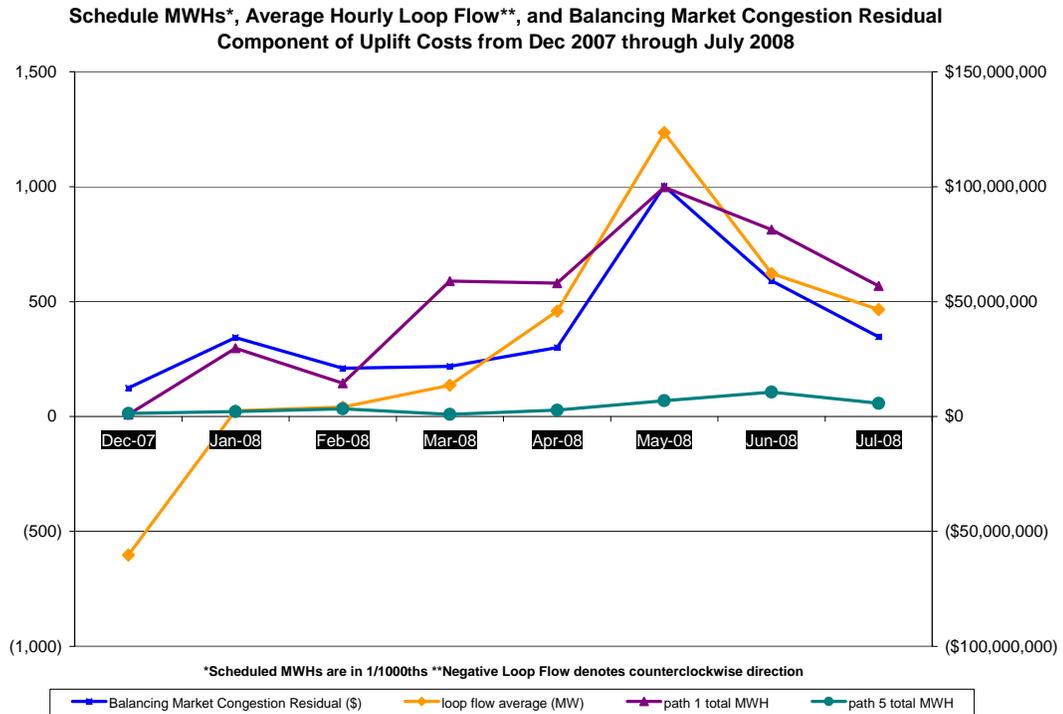
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<sup>47</sup> NYISO Response to Staff Data Request 2 (Oct. 20, 2008).

<sup>48</sup> NYISO Response to Staff Data Request 2 (Oct. 20, 2008).

<sup>49</sup> MISO Response to Staff Data Request 4 (Oct. 29, 2008); PJM Response to Staff Data Request 4 (Oct. 20, 2008)

<sup>50</sup> OE staff exhibit utilizing data from NYISO Corrected and Expanded Response to Staff Data Request 22 (Nov. 17, 2008) and from NYISO Data on Schedule 1 Components (Dec. 26, 2008). The Balancing Market Congestion Residual covers costs of redispatching in real time and is driven primarily by changes in system topology, such as unexpected outages or derates, actions attributable to storm watches, and unscheduled loop flows. NYISO Response to Staff Data Request 1 (Oct. 20, 2008).



After substantial amounts of uplift began appearing on customers’ bills, a representative of the New York Power Authority expressed concern about these costs at an April 29, 2008 public power sector meeting. Subsequently, Robert A. Mullane, General Manager of the New York Municipal Power Agency, complained to NYISO that it had failed to provide answers to customers as to the causes of the increase in uplift, and demanded that NYISO file with the Commission a written report documenting its findings and actions regarding the increase.<sup>51</sup> (During the period spanning May and June, NYISO was internally working on its referral to the Commission.) Concern widened after NYISO made its Exigent Circumstances Filing and the matter became more widely known. Several letters and requests seeking investigation and redress have since been filed with the Commission.

It is reasonable to conclude that some portion (but far from all) of the uplift experienced by NYISO customers is indirectly attributable to the circuitous schedules, which in turn resulted from the incentive created by NYISO’s adjustment to its Keystone proxy bus price. Some of the uplift is also likely

<sup>51</sup> Letter from Robert A. Mullane to Stephen G. Whitley, NYISO President & CEO (July 3, 2008).

attributable to the lag in adjusting the day-ahead modeling to account for the congestion effects of the resulting loop flow. The actual amount of the uplift attributable to circuitous schedules and to the modeling lag is much more difficult to determine.

NYISO itself cautions that much of the increase in uplift cannot be attributed to the circuitous Lake Erie schedules. It reports that the vast majority of uplift costs are attributable to operational phenomena, such as line outages and seasonal reliability needs.<sup>52</sup> The magnitude of uplift would also be affected by the substantial increase in the cost of natural gas in the first half of 2008, which would tend to inflate the dollar effects of dispatching gas-fired units in real time, whether attributable to loop flow or for other reasons. (The state of New York depends on natural gas and oil-fired units for 63% of its installed capacity,<sup>53</sup> so the odds of a gas unit being called upon are high.) The MMP reported to the Commission that from the summer of 2007 to the summer of 2008, natural gas prices increased 60% (and LBMPs increased 48%).<sup>54</sup> The following OE staff-prepared chart depicts an estimate of the balancing market congestion residual uplift dollars for the first half of 2008 that were met with gas or dual-fueled generation, calculates the increase in the price of gas for those months compared to December 2007, and depicts an approximation of the portion of this category of uplift that was attributable solely to the substantial increase in the price of gas during that period.<sup>55</sup> As can be seen, the percentage of increase attributable solely to the increase in the price of gas reached as high as 44 percent in June of 2008.

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<sup>52</sup> Letter from Stephen G. Whitley to Robert A. Mullane (Aug. 7, 2008).

<sup>53</sup> Press Release issued by NYISO on Dec. 11, 2008, reported in Energy Central Professional (Dec. 12, 2008).

<sup>54</sup> Dr. Nicole Bouchez, “New York ISO Review of Market Issues,” presented at the Market Monitoring Unit Semi-Annual Conference hosted by the Federal Energy Regulatory Commission, at p. 5 (Dec. 3-4, 2008). (LBMP is the NYISO equivalent of LMP; in NYISO, the term stands for locational based marginal pricing.)

<sup>55</sup> NYISO Response to Staff Data Request 24 (Mar. 4, 2009) (estimate of balancing market congestion residuals met with gas or dual-fueled generation, and balancing market congestion residual dollars), and [www.nymex.com](http://www.nymex.com) (gas prices).

	<u>Balancing Residual</u>	<u>Percentage of Gas Generation</u>	<u>% of Uplift Gas Generation</u>	<u>NYMEX<sup>*</sup> (\$/MMBTU)</u>	<u>Increase from 12/07</u>	<u>Normalized Gas Uplift</u>
Dec-07	31,239,150	50.21%	15,884,448	\$7.18	-	-
Jan-08	59,115,514	58.87%	34,803,122	\$7.99	10.14%	\$31,274,895
Feb-08	45,104,132	47.91%	21,807,680	\$8.64	16.90%	\$17,956,366
Mar-08	38,750,492	52.11%	20,192,578	\$9.62	25.36%	\$15,070,988
Apr-08	42,497,899	41.05%	17,445,208	\$10.29	30.22%	\$12,172,652
May-08	129,641,989	43.00%	55,743,664	\$11.38	36.91%	\$35,170,431
Jun-08	97,645,100	31.85%	31,098,581	\$12.78	43.82%	\$17,471,680
Jul-08	76,840,651	27.38%	21,035,217	\$11.07	35.14%	\$13,643,438

\* NYMEX price corresponds to settlement price for each associated monthly contract. See [www.nymex.com](http://www.nymex.com).

At NYISO's November 3, 2008 Market Issues Working Group meeting, NYISO's MMP presented its own calculation of the amount of uplift attributable to the circuitous schedules. It estimated the total at \$96 million,<sup>56</sup> later revising the figure downward to \$94.8 million.<sup>57</sup> The methodology used to estimate the costs assumed that all Path 1 transactions had instead been scheduled at the Keystone Proxy Bus, and that all Path 5 transactions had instead been scheduled directly from PJM to MISO. It then estimated the difference in charges for both paths as the difference between the LBMP at the Keystone Proxy Bus and the Bruce Proxy Bus.

This methodology does not correct for the differing system conditions and restraints applicable to its counterfactual assumptions.<sup>58</sup> It thus can provide only a

<sup>56</sup> Dr. Nicole Bouchez, "Estimating the Congestion and Loss Charges Not Borne by Circuitous Transactions," NYISO Market Issues Working Group (Nov. 3, 2008) at 8.

<sup>57</sup> Letter from Alex M. Schnell, attorney for NYISO, to Kathryn Kuhlen, Senior Counsel in the Division of Investigations (Dec. 5, 2008).

<sup>58</sup> The methodology also includes all components of Schedule 1 costs, which NYISO regards in the aggregate as uplift. Schedule 1 costs include a variety of balancing and operating charges in addition to the Balancing Market Congestion Residual, which is the component that takes into account the costs of redispatch. If one were to consider simply the redispatch costs, but still using NYISO's methodology, the total would be \$40,706,098. NYISO Response to Staff Informal Data Request (Dec. 5, 2008). The total uplift would also likely have been much smaller had NYISO used its current 30-day rolling average "look back" for incorporating loop flow in its day-ahead modeling.

rough approximation of the uplift attributable to the circuitous schedules. Actual costs would have to be determined by rerunning the commitment models with appropriate adjustments, a non-trivial undertaking. Because OE staff has determined that market participants did not commit manipulation and thus should not be required to disgorge profits, it has not requested NYISO to undertake this task.

### **III. NYISO's Allegations of Manipulation**

NYISO's referral does not accuse market participants of committing tariff violations in connection with the placing of circuitous schedules.<sup>59</sup> Rather, NYISO lodges two principal allegations of potential market manipulation.<sup>60</sup> The first is that the market participants placing the schedules disguised the true source and sink of the transactions. The second is that the transactions resulted in market inefficiencies. These two allegations are examined below.

#### **A. Transparency of Source and Sink**

In its referral, NYISO complained that market participants might be disguising the true source and sink of transactions and scheduling transactions using multiple tags, to take advantage of the difference in pricing methodologies among the RTOs. It also theorized that participants might be scheduling MISO power into NYISO and then rescheduling it to PJM on a Path 1 transaction, in order to receive PJM's desirable unitary NYISO price.<sup>61</sup>

The first allegation is not borne out by the facts, at least with respect to the paths NYISO identified as actually occurring, the Path 1 and Path 5 transactions. The market participants placing these schedules did so all on one tag; indeed, in order for a participant to receive PJM's unitary NYISO price, the tag has to show the source as NYISO. The participants placing the Path 1 schedule purchased the power in NYISO, wheeled it through IESO and MISO, and sank it in PJM, and included all pieces of the transmission on one tag. Furthermore, all of the legs of

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<sup>59</sup> In fact, NYISO affirmatively states in its Exigent Circumstances Filing that it has not identified any violations of its tariffs or market rules. Exigent Circumstances Filing at 2.

<sup>60</sup> NYISO Referral at 3-4.

<sup>61</sup> NYISO Referral at 3, 7-8.

the transaction were plainly apparent. An example of the physical path portion of such a tag is displayed below, and shows the various legs of the contract path:<sup>62</sup>

Physical Path							
CA	TP	PSE	POR	POD	Sched Entities	Contract	Misc(Token/Value)
NYIS		NYIS	NYIS				
	NYIS		NYIS	NYIS	NYIS		
	ONT		ONT.IMPORT.NYIS.PS	ONT.EXPORT.MECS.PS	ONT		
	MISO		MI-ONT	PJM	MISO		
	PJM		MECS	PJM			
PJM			PJMSYSLOAD				

In order to test NYISO’s second allegation, that market participants might be combining MISO to NYISO transactions with Path 1 transactions, OE staff analyzed transactional data provided by NYISO itself. This data failed to show participants scheduling any but a de minimis number of transactions from MISO into NYISO for the same hour as they scheduled Path 1 transactions.<sup>63</sup> Such evidence does not suggest an intention to combine these transactions. For example, one market participant reported that it had on two non-consecutive days entered into such overlapping trades, but separately rather than as a combined strategy. This participant further reported that it only scheduled the MISO-ONT-NYISO transaction on a few occasions because, although its evaluation of the economics suggested it would be profitable, the transactions themselves, once executed, did not prove to be so.<sup>64</sup> Due to the overall de minimis nature of these particular combined transactions, OE staff did not consider further whether such dual scheduling was improper.

<sup>62</sup> This OE staff exhibit is drawn from a representative tag, provided by Constellation Energy Commodities Group, Inc. (Constellation) at an OE staff conference with Constellation representatives (July 24, 2008).

<sup>63</sup> For the eight-month period from December 2007 through July 2008, there were a total of 2 transactions using one tag from MISO to NYISO at the same time as a Path 1 transaction. For the same period, there were a total of twelve transactions using two tags (from MISO to IESO and IESO to NYISO) at the same time as a Path 1 transaction. OE staff exhibits utilizing data from NYISO Corrected and Expanded Response to Staff Data Request 22 (Nov. 17, 2008) and data from MISO Response to Staff Data Request 16 (Oct. 29, 2008).

<sup>64</sup> Constellation Response to Staff Data Request CECG 4-12 (Mar. 24, 2009).

In OE staff's review of the trading data received during the course of its investigation, OE staff discovered additional configurations not reported by NYISO in its referral. One of these involved the placing of a Path 1 transaction in the same hour as a transaction from IESO into NYISO. Another involved the placing of a Path 1 transaction in the same hour as a transaction from PJM to NYISO. The results of OE staff's examination regarding these various additional inter-RTO transactions are discussed in a later section of this report.<sup>65</sup>

NYISO also alleged in its referral that it had difficulty analyzing the extent of circuitous transactions because, it asserted, it only has access to tags that source, sink or wheel through NYISO.<sup>66</sup> It raised similar concerns in its Exigent Circumstances Filing, in which it requested the Commission to consider granting all market monitors unrestricted access to NERC tag data, and to share market participants' external transaction bid and schedule data.<sup>67</sup> To determine the extent of the asserted difficulty, and to analyze whether any Commission orders or rules might be impeding access to data, OE staff asked the various RTOs for their views on the subject, and also inquired of OATI and NERC as to the extent of RTO access to tag data.

As for Commission rulings, neither NYISO, PJM nor MISO contends that any Commission orders or rules impede its access to inter-regional data.<sup>68</sup> As for the extent RTOs are permitted access to tag data, NERC and OATI both informed OE staff that the eastern RTOs, as reliability coordinators, have access to all current tag information for the entire Eastern Interconnection.<sup>69</sup> In addition,

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<sup>65</sup> OE staff also examined, and discusses in that section of the report, Potomac Economics' referral of Path 1 and Path 5 transactions occurring in the same hour.

<sup>66</sup> NYISO Referral at 4.

<sup>67</sup> Exigent Circumstances Filing at 27-28.

<sup>68</sup> NYISO Response to Staff Data Request 10 (Oct. 28, 2008), Monitoring Analytics Response to Staff Data Request 7 (Oct. 20, 2008), MISO Response to Staff Data Request 7 (Oct. 29, 2008).

<sup>69</sup> OE staff telephone conferences with Allen Phelps, OATI Regional Account Manager (Dec. 1, 2008); Brian Nolan, NERC Manager of IT and Projects (Dec. 2, 2008); and Larry Kezele, NERC Manager of Reliability Support Services (Dec. 3, 2008).

NERC's Manager of Reliability Support Services confirms that the RTOs have access to NERC's tag dump, which archives data older than eight days. The archived data includes such information as scheduling entity, source and sink, transmission, MWs, and hour and day, and thus would reveal the data sought by NYISO to analyze schedules.<sup>70</sup> Access to this tag data has also been granted to Monitoring Analytics, PJM's external market monitor, at its request.<sup>71</sup>

NYISO later revised its assertions on this point. On October 28, 2008, it acknowledged that "Market Monitoring has recently become aware that all NERC tags are available to the NYISO through the IDC (Interchange Distribution Calculator) system."<sup>72</sup>

For the foregoing reasons, OE staff concludes that market participants were not concealing the true source and sink of their transactions. The source and sink, as well as all wheels, for the Path 1 and Path 5 transactions are clearly visible on the NERC tags. Such tags accompany scheduling requests made of the RTOs, and to the extent a transaction does not involve a particular RTO, the information is nonetheless accessible by the RTO from NERC. As to the theorized scheduling of MISO-sourced power to NYISO combined with a Path 1 transaction, OE staff found that any such simultaneous scheduling was de minimis and not suggestive of a combined strategy (and the few instances in which such simultaneous schedules occurred, they were both openly posted on the OATI system). Therefore, OE staff finds no evidence that market participants disguised the true source or sink of their circuitous Lake Erie transactions. The implications of these findings to NYISO's allegations of market manipulation are discussed later in this report.

## **B. Market Inefficiencies**

NYISO's second concern with the circuitous schedules is that of market inefficiencies.<sup>73</sup> NYISO asserts that the seam resulting from the two inter-control

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<sup>70</sup> OE staff telephone conference with Larry Kezele (Dec. 11, 2008).

<sup>71</sup> *Id.*

<sup>72</sup> NYISO Response to Staff Data Request 11 (Oct. 28, 2008). NYISO nonetheless contended that this access did not apply to its MMP. However, a market monitor can obtain the information from its RTO, as NERC confirmed. OE staff telephone conference with Larry Lezele (Dec. 11, 2008).

<sup>73</sup> NYISO Referral at 4.

area pricing methodologies (Tag Based and Interface Pricing) creates an incentive to schedule the complained-of transactions, and can result in market inefficiencies. As discussed above, OE staff agrees with NYISO's analysis that the genesis of the problem identified in its referral lies in pricing differences, both within NYISO and as between NYISO and other RTOs.

Pinpointing pricing incentives as the cause of the problem, however, indicates that the circuitous transactions, by capitalizing on those incentives, simply *exposed* rather than *created* a market inefficiency. The fact that a market inefficiency exists is not, in itself, proof that market participants engaged in market manipulation.

Nonetheless, the absence of a demonstrated linkage between market inefficiency and manipulation does not mean that the circuitous transactions might not, on some other basis, have violated the Commission's anti-manipulation rule.<sup>74</sup> OE staff therefore has carefully analyzed the transactions, and the apparent motivations underlying the transactions, to determine if that was in fact the case.

#### **IV. Circuitous Transactions and the Anti-Manipulation Rule**

The Energy Policy Act of 2005 (EPAAct 2005)<sup>75</sup> amended the Federal Power Act to prohibit the use of "any manipulative or deceptive device or contrivance" in connection with the jurisdictional purchase or sale of electric energy or transmission services. It also provided that those terms were to be understood as they are used in section 10(b) of the Securities and Exchange Act of 1934 (15 U.S.C. 78j(b)).<sup>76</sup>

The Commission promulgated regulations implementing this section in 2006, modeling them on Rule 10b-5 of the Securities and Exchange Commission (SEC).<sup>77</sup> The anti-manipulation rule applicable to electric markets reads as follows:

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<sup>74</sup> 18 CFR § 1c.2 (2008).

<sup>75</sup> Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

<sup>76</sup> 16 U.S.C. § 824v(a) (2005).

<sup>77</sup> *Prohibition of Energy Market Regulation*, 18 CFR Part 1c, Order No. 670 at P 30 (2006) (Order No. 670).

### 1c.2 Prohibition of electric energy market manipulation.

- (a) It shall be unlawful for any entity, directly or indirectly, in connection with the purchase or sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the Commission,
- (1) To use or employ any device, scheme, or artifice to defraud,
  - (2) To make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or
  - (3) To engage in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any entity.<sup>78</sup>

In Order No. 670, the Commission addressed the elements necessary for application of the anti-manipulation rule (both gas and electric). It stated that it would act in cases where an entity: (1) uses a fraudulent device, scheme or artifice, or makes a material misrepresentation or a material omission as to which there is a duty to speak under a Commission-filed tariff, Commission order, rule or regulation, or engages in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any entity; (2) with the requisite scienter; (3) in connection with the purchase or sale of natural gas or electric energy or transportation of natural gas or transmission of electric energy subject to the jurisdiction of the Commission.<sup>79</sup>

With respect to the activities analyzed in this investigation, the last element is clearly met: the circuitous transactions were placed in the organized electric markets and were sales for resale, and thus were made in connection with the purchase and sale of electric energy subject to the jurisdiction of the Commission. The remaining two elements are discussed below.

#### **A. Fraudulent Device, Scheme or Artifice**

There are two aspects to consider under this first element of manipulation: whether the market participants were being deceptive, and whether they acted fraudulently or were employing a fraudulent device, scheme or artifice. As to the issue of deception, NYISO raised the suggestion that market participants might be concealing the true source or sink of their trades. However, as discussed above,

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<sup>78</sup> 18 CFR § 1c.2 (2008).

<sup>79</sup> Order No. 670 at P 49.

NERC tags clearly show the source, sink and intervening transmission for a schedule. All of the Path 1 and Path 5 transactions were openly placed on the OATI system and scheduled on a single tag, and thus showed the source, sink and intervening transmission. Furthermore, Path 1 transactions necessitate a scheduling request for the specific interface between NYISO and IESO. NYISO's internal system reports a request for such a transaction as exiting NYISO at "OH\_Load\_Bruce." In contrast, it reports transactions exiting NYISO at the interface with PJM as exiting at "PJM\_Load\_Keystone."<sup>80</sup> NYISO operators, before approving a schedule sourcing from NYISO to IESO, check with IESO to coordinate approvals for both ends of the transaction.<sup>81</sup> Thus, there can be no deception involved in the placing of these schedules, nor can there be any confusion as to whether a transaction sourcing in NYISO and sinking in PJM used the NYISO-IESO-MISO-PJM contract path or the NYISO-PJM contract path. Likewise, the Path 5 transactions involved a wheel through NYISO, which similarly would have to be scheduled with NYISO. Therefore, there was no deception or misstatement involved in the placing of these Path 1 and Path 5 schedules.

With respect to the issue of whether market participants employed a fraudulent device, scheme or artifice, NYISO alleges in its referral that an incentive was created by the combination of NYISO's and PJM's different pricing methodologies and the divergence between the Bruce and Keystone Proxy Bus prices (which in turn was occasioned by NYISO's change to the Keystone Proxy Bus pricing methodology). OE staff agrees, but draws the opposite conclusion from this as did NYISO with respect to manipulation: OE staff believes the existence of a pricing incentive is suggestive of the *lack* of a fraudulent device, scheme or artifice, and is indicative instead of market participants responding to existing prices, rather than artificially affecting them.

The cost of buying power at the interface between NYISO and IESO and delivering it to PJM was frequently less than the cost of buying power at the Keystone interface and delivering it to PJM, even taking into account the cost of

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<sup>80</sup> NYISO Technical Bulletin 037 (Revised 9/11/2007); OE staff telephone conference with Alex Schnell, attorney for NYISO, and Kim Sebbens, Supervisor, NYISO Monitoring, Analysis and Reporting (Nov. 13, 2008).

<sup>81</sup> OE staff telephone conference with Alex Schnell, attorney for NYISO, and Kim Sebbens, Supervisor, NYISO Monitoring, Analysis and Reporting (Nov. 13, 2008).

the wheels through IESO and MISO.<sup>82</sup> Prices of course varied from day to day, and individual trades were not always profitable. However, OE staff has examined the profit and loss for Path 1 and Path 5 transactions for the market participants making the trades, and in the aggregate, for each such participant, the trades did result in a profit. A representative Path 1 transaction is set forth below:<sup>83</sup>

Tag	Counterparty	Interface Name	Transaction Type	Flow Date	Hours	MWs/HR	Profit/Loss	Average Price	Buy/Sell
NYIS_RT0506C_PJM	New York ISO	Ontario	ENERGY	5/20/08	24	400	(\$326,620)	(\$34.02)	Buy
NYIS_RT0506C_PJM	New York ISO		TRANSMISSION	5/20/08	24	400	(\$50,112)	(\$5.22)	Buy
NYIS_RT0506C_PJM	Ontario ISO	New York	ENERGY	5/20/08	24	400	\$270,515	\$28.18	Sell
NYIS_RT0506C_PJM	Ontario ISO		TRANSMISSION	5/20/08	24	400	(\$46,176)	(\$4.81)	Buy
NYIS_RT0506C_PJM	Ontario ISO	Miso	ENERGY	5/20/08	24	400	(\$411,195)	(\$42.83)	Buy
NYIS_RT0506C_PJM	Mid-West ISO	Ontario	ENERGY	5/20/08	24	400	\$406,796	\$42.37	Sell
NYIS_RT0506C_PJM	Mid-West ISO	PJM	ENERGY	5/20/08	24	400	(\$397,476)	(\$41.40)	Buy
NYIS_RT0506C_PJM	PJM RTO	New York	ENERGY	5/20/08	24	400	\$655,096	\$68.24	Sell
NYIS_RT0506C_PJM	PJM RTO		TRANSMISSION	5/20/08	24	400	(\$20,736)	(\$2.16)	Buy
						Total	\$78,940		

By way of contrast, had a transaction been scheduled from NYISO to PJM at this same hour and day via the Keystone Proxy Bus instead of the Bruce Proxy Bus, the transaction would have looked as follows:<sup>84</sup>

Counterparty	Interface Name	Transaction Type	Flow Date	Hours	MWs/HR	Profit/Loss	Average Price	Buy/Sell
New York ISO	PJM	ENERGY	5/20/08	24	400	(\$731,904)	(\$76.24)	Buy
New York ISO		TRANSMISSION	5/20/08	24	400	(\$48,000)	(\$5.00)	Buy

<sup>82</sup> NYISO Referral at 9.

<sup>83</sup> OE staff exhibit based on data from Constellation Response to Staff Data Request CECG 3-1e (Oct. 31, 2008). The actual P/L would be reduced by the portion of uplift attributable to the MWh of the trade. (These charges would apply to any transaction, not just a Path 1 transaction.) Uplift costs are estimated in advance for purposes of analyzing potential profitability, but are not known until the monthly bills are received. The share of uplift for this transaction was \$37,780.79, or \$3.94/MWh, bringing the total profit on the transaction to \$41,159.

<sup>84</sup> OE staff exhibit utilizing published energy prices and estimated transmission charges. NYISO and PJM hourly prices used for comparison are provided online by the vendor VENTYX (<https://velocitysuite.globalenergy.com>).

PJM RTO	New York	ENERGY	5/20/08	24	400	\$640,512	\$66.72	Sell
PJM RTO		TRANSMISSION	5/20/08	24	400	(\$19,200)	(\$2.00)	Buy
					<b>Total</b>	<b>(\$158,592)</b>		

The market participants themselves state that they made the trades solely in response to price incentives, which matches NYISO's assumption as to motive. For example, DTE Energy Trading, Inc. (DTE) stated it placed Path 1 transactions "based on economics and responding to price signals."<sup>85</sup> Fortis Energy Marketing & Trading GP (Fortis) stated that the purpose of each of its transactions "was to follow the price signals in the market," and reported that discussions with its traders revealed no other incentives.<sup>86</sup> MAG Energy Solutions Inc. (MAG) stated that its "motivation for placing the schedules ... was purely economic and driven by the price signals in the market."<sup>87</sup> Saracen Energy Partners, LLP (Saracen) stated that the schedules were placed "because either the real-time proxy buses/interfaces prices or corresponding trading hubs at the source were lower, or it was predicted that they would liquidate lower than the prices at the sink proxy bus interface or corresponding trading hub."<sup>88</sup>

Since NYISO itself has identified a clear economic pricing incentive for the transactions, since the market participants agree that they placed the schedules in response to prices, and since the market participants did in fact make a profit on their Path 1 and Path 5 trades, there seems no reason to doubt that their motive was simply one of responding to the price signals in the market.<sup>89</sup>

The Commission has defined fraud "to include any action, transaction, or conspiracy for the purpose of impairing, obstructing or defeating a well-

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<sup>85</sup> DTE Response to Staff Data Request 1 (Nov. 19, 2008).

<sup>86</sup> Fortis Response to Staff Data Request 1 (Nov. 13, 2008).

<sup>87</sup> MAG Response to Staff Data Request 1 (Oct. 14, 2008).

<sup>88</sup> Saracen Response to Staff Data Request 1 (Dec. 5, 2008).

<sup>89</sup> The same holds true for the less common Path 5 transactions. Silverhill, for instance, states this trade capitalized on the price differences between the various NYISO interties, particularly between the NYISO interface with PJM and the NYISO interface with IESO. Silverhill also identified a price advantage to sinking the power in MISO rather than IESO. Silverhill Response to Staff Data Request 1 (Nov. 4, 2008).

functioning market.”<sup>90</sup> As the actual pricing incentives for Path 1 and Path 5 transactions suggest (confirmed by the statements of market participants and NYISO’s own conclusions), the purpose for placing the transactions in question was not to obstruct a well-functioning market, but simply to capture price spreads. The market participants did not act against their economic interests or attempt to artificially affect price, which are hallmarks of market manipulation.<sup>91</sup> And the market inefficiencies NYISO complains of were not created by the market participants, but by the price signals themselves (and ultimately by the RTOs designing the price signals).

This distinction is a critical one. The Path 1 and Path 5 transactions were entered into in response to price signals, were economically justified on their own account and were not the result of any actions that were designed to or did influence those signals. Nor did the market participants make material misrepresentations or omissions, or engage in a fraudulent course of conduct. Thus, placing the Path 1 and Path 5 transactions did not constitute a fraudulent device, scheme or artifice.

Inasmuch as all three elements of anti-manipulation must be present for a finding of violation, this absence of a fraudulent device, scheme or artifice is sufficient to defeat the allegation of illegality. Nonetheless, OE staff also considered whether the second element, that of scienter, had been met.

### **B. Scienter**

The term scienter, for purposes of the Securities and Exchange Act of 1934, refers to “knowing or intentional misconduct ... conduct designed to deceive or defraud investors by controlling or artificially affecting the price of securities.”<sup>92</sup> The Commission has applied this same concept to its own anti-manipulation rule.<sup>93</sup> As discussed above, the traders placing the Path 1 and Path 5 transactions

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<sup>90</sup> Order No. 670 at P 50.

<sup>91</sup> *Energy Trading Partners, L.P.*, 120 FERC ¶ 61,086 at P 41 (2007); *DC Energy, LLC v. H.Q. Energy Services (U.S.), Inc.*, 124 FERC ¶ 61,295, Attachment 1 at 22 (2008).

<sup>92</sup> Order No. 670 at P 52, quoting from *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 197 (1976); accord *Aaron v. SEC*, 446 U.S. 680, 690 (1980).

<sup>93</sup> Order No. 670 at P 52.

did so for the purpose of making a profit on the price differences between source and sink, rather than to artificially affect those prices. To the extent these price differences could be deemed a market defect, it was not one created by any intentional actions of market participants to obstruct an otherwise well-functioning market.<sup>94</sup> Therefore, the element of knowing or intentional misconduct has not been met.

However, the Commission has also considered the question of whether recklessness could substitute for intent. It observed in Order No. 670 that while the United States Supreme Court has not addressed the subject, the Courts of Appeal that have done so agree that recklessness satisfies the scienter requirement. Therefore, the Commission adopted that same position with respect to the anti-manipulation rule.<sup>95</sup> The D.C. Circuit Court of Appeals, in accord with the other Circuit Courts of Appeal, has held that recklessness is “an extreme departure from the standards of ordinary care...which presents a danger...that is either known to the defendant or is so obvious that the actor must have been aware of it.”<sup>96</sup>

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<sup>94</sup> At the March 29, 2007 Technical Conference on Seams Issues for RTOs and ISOs in the Eastern Interconnection (Docket No. AD06-9-000), Mr. Lloyd Yates, Senior Vice President for Energy Delivery at Progress Energy Carolinas, was asked whether the loop flow patterns suggested an intent to create loop flow, as opposed to loop flow simply being a consequence of many separate transactions. He testified that he didn't think people were doing it intentionally, but rather that it was a “whole bunch of transactions” that happen to go through the affected company's system, in accordance with the laws of physics. Technical Conference Tr. 175:21-176:9.

<sup>95</sup> Order No. 670 at P 53.

<sup>96</sup> *SEC v. Steadman*, 967 F. 2d 636, 641-42 (D.C. Cir. 1992). *See also* *Greebel v. FTP Software, Inc.*, 194 F. 3d 185 (1st Cir. 1999); *Novak v. Kasaks*, 216 F. 3d 300 (2nd Cir. 2000), *cert. denied* 531 U.S. 1012 (2000); *In re Advanta Corp. Sec. Litig.*, 180 F. 3d 525 (3rd Cir. 1999); *Ottman v. Chopko*, 353 F. 3d 338 (4th Cir. 2003); *Nathenson v. Zonagen, Inc.*, 267 F. 3d 400 (5th Cir. 2001); *In re Comshare, Inc.*, 183 F. 3d 542 (6th Cir. 1999); *Sundstrand Corp. v. Sun Chemical Corp.*, 553 F. 2d 1033 (7th Cir. 1977), *cert. denied* 434 U.S. 875 (1977); *Florida State Bd of Admin. v. Green Tree Fin. Corp.*, 270 F. 3d 645 (8th Cir. 2001), *reh'g denied* No. 99-3536, 2001 U.S. App. LEXIS 25416 (8th Cir 2001); *In re Silicon Graphics Inc. Sec. Litig.*, 183 F. 3d 970 (9th Cir. 1999), *reh'g denied* 195 F. 3d 521 (9<sup>th</sup> Cir. 1999); *City of Philadelphia v. Fleming Cos., Inc.*, 264 F. 3d 1245 (10th Cir. 2001); *Bryant v. Avado Brands, Inc.*, 187 F. 3d 1271 (11th Cir. 1999),  
(continued...)

Likewise, the Commission has since stated that recklessness may be found if there is a danger “so obvious that the actor must have been aware of the danger.”<sup>97</sup>

Consequently, OE staff also considered whether the scheduling actions of the market participants, while not constituting intent, might nonetheless be considered reckless. The mere scheduling of transactions with the awareness that loop flow will result is not, without more, reckless, since all schedules involve some amount of loop flow. However, it is possible that a conscious disregard of a substantial amount of loop flow, if anticipated to impose significant congestion and uplift costs on customers, might rise to the level of reckless conduct.

In analyzing the extent of the market participants’ knowledge about the ancillary results of their schedules, OE staff considered a number of factors: whether the traders were ever warned or advised by any of the RTOs not to place circuitous schedules or schedules that might result in loop flow; whether the traders did or should have thought that the schedules might contribute significantly to loop flow; whether the traders had reason to suppose they might be contributing to uplift; and whether the increased uplift experienced by NYISO customers toward the middle of 2008 was principally occasioned by the circuitous schedules.

### **1. Scierter and Loop Flow**

The first question, whether market participants had ever been advised to avoid creating loop flow, was easily resolved. All the involved RTOs state they did not advise market participants to refrain from placing circuitous schedules, or schedules resulting in loop flow, nor do they have any tariff provisions or business practices that prohibit such schedules.<sup>98</sup> The market participants confirmed they did not receive instructions to this effect from the RTOs.<sup>99</sup>

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*on remand, complaint dismissed*, 100 F. Supp. 2d 1368 (2000), *rev’d and remanded* *Bryant v. Dupree*, 252 F. 3d 1161 (11th Cir. 2001).

<sup>97</sup> *Amaranth Advisors, L.L.C.*, 120 FERC ¶ 61,085 (2007) at P 112, quoting *Wonsover v. SEC*, 205 F. 3d 408, 414 (D.C. Cir 2000).

<sup>98</sup> PJM Response to Staff Data Request 1 and 2 (Oct. 20, 2008); MISO Response to Data Request 1 and 2 (Oct. 29, 2008); IESO Response to Informal Staff Data Request 1 and 2 (Oct. 17, 2008); NYISO Response to Staff Data Request 6 and 8 (Nov. 4, 2008); *Exigent Circumstances Filing at 2*. (Of course, after NYISO filed its request with the Commission to forbid certain circuitous schedules, it announced that prohibition to its market participants. NYISO Response to Staff Data Request 8 (Nov. 4, 2008). The tariffs approved in that  
(continued...)

Prior to June of 2008, by which time NYISO had already referred the conduct complained of to the Commission, participants had not even been advised of a connection between loop flow in the Lake Erie area and the circuitous scheduling, or given any indication that the Path 1 and Path 5 schedules would be considered problematic.<sup>100</sup> In fact, Constellation made inquiries of PJM, MISO and IESO about the pricing of the Path 1 transaction, and was affirmatively assured that PJM “had no issue with this.”<sup>101</sup> Fortis likewise inquired of NYISO about tagging particulars for a path from PJM to MISO and was advised the tag for such a transaction should show “PJM to NY to OH to MISO” (i.e., the Path 5 contract path).<sup>102</sup> Thus, market participants had been given no reason to think the RTOs might object to these transactions.

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filing now prohibit the eight identified paths. *New York Indep. Sys. Operator, Inc.*, 124 FERC ¶ 61,174 (2008).)

<sup>99</sup> One market participant, Constellation, participated in a June 18, 2008 telephone discussion with Dr. Joseph Bowring, President of Monitoring Analytics, the market monitor for PJM, in which Dr. Bowring discussed what he saw as the potential for “gaming” in connection with loop flow, and made the observation that some transactions may not be consistent with competitive market outcomes. (Monitoring Analytics Response to Staff Data Request 2 (Oct. 20, 2008); Constellation Amended and Restated Response to Staff Data Request CECG 3-3 (Nov. 26, 2008).) At this point in time, the market monitors had already been in communication regarding the issue; the following month, NYISO made its Exigent Circumstances Filing.

<sup>100</sup> NYISO announced to its market participants on June 20, 2008 that it was investigating links between incentives to schedule external transactions and the reversal of Lake Erie loop flow. (NYISO Response to Staff Data Request 6 (Nov. 4, 2008).)

<sup>101</sup> E-mail from Frederick S. Bresler III, PJM Executive Director of Market Operations, to Steven Wofford, Constellation Managing Director for Asset Operations (Jan. 15, 2008); OE staff conference with Constellation representatives (Nov. 13, 2008).

<sup>102</sup> E-mail from NYISO Customer Relations to Gordon Newlands (June 19, 2008). (NYISO gave this advice notwithstanding the fact that the MMP had already made its referral to the Commission complaining of Path 1 and Path 5 transactions.)

This conclusion is further confirmed by the RTOs' past treatment of market inefficiencies stemming from pricing incentives. One such occasion involved circumstances quite similar to those at issue here. PJM experienced loop flows in 2006 that were apparently caused by schedules that took advantage of differences in interface prices at PJM's borders. Those differences had been designed by PJM to encourage counter flows to relieve congestion, but in practice little to none of the actual energy flowed over the scheduled path.<sup>103</sup> PJM promptly took action, changing the pricing mechanism for the interchange transactions in question.<sup>104</sup>

On several other occasions PJM has made adjustments to its proxy bus locations and pricing.<sup>105</sup> NYISO has also changed proxy bus pricing rules in order to address inefficient incentives, changing in three instances the method of determining the real-time prices for certain proxy buses.<sup>106</sup> On other occasions it has changed the way it models proxy buses for various reasons unrelated to inefficient incentives.<sup>107</sup> Likewise, MISO has added a proxy bus for the Ontario interface in order to adjust settlement prices that flow over the PAR between Minnesota Power and Ontario.<sup>108</sup> It follows from these various adjustments that market participants could reasonably assume that the prices they observe are the

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<sup>103</sup> PJM Report to the Commission, Docket No. ER06-1218-000 (April 2, 2007) at 5-6. These flows involved the southern portion of PJM's footprint.

<sup>104</sup> *Id.* at 6-7.

<sup>105</sup> See extensive discussion in NYISO Referral, Attachment 2 ("Proxy Buses and Congestion Pricing of Inter-Balancing Authority Area Transactions," Dr. Scott Harvey (June 2, 2008), extracted from testimony submitted in Docket No. ER08-1113-000 (June 17, 2008).

<sup>106</sup> NYISO Response to Staff Data Request 16 (Oct. 28, 2008). The first such change was intended to provide incentives for market participants to submit bids consistent with the anticipated LBMP in the neighboring control area, the second was implemented to prevent price distortions resulting from a lack of competitive import or export bids, and the third was to adopt a special pricing rule for scheduled lines to address a lack of competitive import and export bids at such locations.

<sup>107</sup> *Id.*

<sup>108</sup> MISO Response to Staff Data Request 9 (Oct. 29, 2008).

end result of RTO actions designed to encourage the bidding behavior that they desire, and which the RTOs deem most conducive to an efficient market.

The next question considered by OE staff was the level of understanding of the market participants concerning loop flow and whether they thought their activities substantially contributed to it, a threshold question to determining whether they might have recklessly disregarded an obvious and deleterious effect on the market from their actions.<sup>109</sup> Loop flow, as discussed above, is simply the difference between the actual and scheduled flows on a line or over an interface. Electricity flows in accordance with Ohm's Law, which holds that electricity takes the path of least resistance in a parallel circuit. Since schedules are based on the artificial convention of a contract path rather than on actual flows, all schedules on a parallel system create some amount of loop flow. But a market participant cannot predict with any assurance the extent of those loop flows, much less whether such flows might be deemed harmful, because the configuration of any and every element of the electric grid determines the resistance or impedance on that system.<sup>110</sup>

Therefore, to predict the impact of its schedules a market participant would have to know not only the topology of the system but also what other schedules are being placed, as well as what events might happen in real time, such as line trips, generation outages, changes in generation dispatch patterns, changes in system demand, changes in inter-area transactions,<sup>111</sup> and the operation of any PARs situated in the area. Complicating the picture is the fact that inter-RTO schedules use as their sink and source not the actual generating plant where the power originates, but an artificially designated bus that consolidates the impacts of several generators into a homogeneous representation of the impacts. The same is true for the nominal sink, which doesn't represent the substation where the power

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<sup>109</sup> See *SEC v. Steadman*, 967 F. 2d 636, 641-42 (D.C. Cir. 1992) quoting *Sunstrand Corp.*, 553 F. at 1045 (recklessness is met where a company "wantonly ignored" readily available evidence). Similarly, recklessness may be found where the actor encountered "red flags" that should have alerted him to the improper conduct. *Graham v. SEC*, 222 F.3d 994, 1006 (D.C. Cir. 2000).

<sup>110</sup> Loop Flow Study at 7.

<sup>111</sup> NYISO President's Report, "Process Review: Enterprise-wide Critical Issue Resolution," Management Committee Meeting (Aug. 27, 2008) at 4.

is stepped down for a particular load, but rather a representative bus consolidating the demand of several loads in the general area.<sup>112</sup>

As a result, predicting loop flows is a highly technical endeavor. Even NYISO, with all the tools at its disposal, conceded that “it is difficult to predict future circulation patterns with accuracy.”<sup>113</sup> It is not surprising, then, that the market participants that placed the Path 1 and Path 5 transactions displayed varying degrees of sophistication about the loop flow phenomenon. Some market participants simply assumed transactions would flow as scheduled, some thought the RTOs could control the flows (a not unreasonable assumption, given the existence of PARs), some thought the transactions would flow as scheduled because of the direction of congestion, some assumed the pricing signals were designed to encourage the schedules desired, some assumed they would be informed if their schedules caused a problem, and some didn’t consider the loop flow issue at all. For illustrative purposes, a number of their responses are summarized below:

Constellation contends that it did not think, and had no reason to believe, that its Path 1 transactions would create significant amounts of loop flow. The company observes that when market participants enter into transactions, they cannot model or otherwise anticipate scheduled net interchange (the schedules of other market participants in the same or opposite direction). Constellation observes that it lacks both access to, and the technical capability to analyze, the complex data needed to calculate loop flow effects.<sup>114</sup>

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<sup>112</sup> Comments of PJM Interconnection, Inc., Technical Conference, Docket No. AD06-9-000 at 10 (May 1, 2007) (PJM Technical Conference Comments). Furthermore, loop flow on any given RTO’s footprint can be affected not only by its own imports, exports and wheel-throughs, but by the effects of internal generation dispatch in the surrounding RTOs, as well as the surrounding RTOs’ interchange with non-RTO neighboring control areas. NYISO Response to Data Request 7 (Oct. 20, 2008). This further complicates the ability to predict the loop flow effects of any given schedule.

<sup>113</sup> New York Independent System Operator, Inc., “Report on Lake Erie Circulation Following New York Independent System Operator, Inc. Implementation of Proposed Tariff Rules on July 22, 2008,” Docket No. ER08-1281-000 (July 31, 2008) at 1.

<sup>114</sup> Constellation Response to Staff Data Request CECG 3-1(a) (Oct. 31, 2008).

Silverhill understands that every transaction may entail some unscheduled flow, but it did not believe that Path 1 or Path 5 transactions would create significant amounts of loop flow. It states it believed the schedules were flowing on the contract paths, based on the price signals published by the various RTOs. Silverhill further states that given the metering performed by RTOs, it would expect that if any of its schedules were causing problems, it would have been contacted by a market operator.<sup>115</sup>

DTE observes that NYISO does not provide loop flow information, and DTE did not think that the scheduled paths would create loop flow. It states it was not aware that loop flow was clockwise around Lake Erie until NYISO reported that fact in their June announcement. DTE states that it had no reason to believe (until after the fact, when the Exigent Circumstances Filing was made) that there were loop flow problems, as prices are supposed to reflect conditions on the system and thereby send proper price signals to market participants.<sup>116</sup>

Fortis acknowledges that all transactions have some degree of loop flow, but contends that the Fortis traders did not know, or have any reason to believe, that the scheduled paths would create significant amounts of loop flow.<sup>117</sup>

MAG states it had no reason to believe its transactions were not flowing as scheduled, pointing out that it is a small electricity trading company with only a few employees, all having a background in finance and none with a background in electric transmission. The company also states it did not realize RTOs lack the capability to conform actual power flows to scheduled flows around Lake Erie.<sup>118</sup>

Saracen did not think the transactions would create significant amounts of loop flow; it states that while it realizes that only a portion of the MWs on a NERC tag flow over the intended path, it assumes the pricing model reflects a condition where the bulk of the power flows as represented on the tag.<sup>119</sup>

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<sup>115</sup> Silverhill to Staff Data Request 10(f) (Dec. 10, 2008).

<sup>116</sup> DTE Response to Staff Data Request 1 (Nov. 19, 2008).

<sup>117</sup> Fortis Response to Staff Data Request 1(f) (Nov. 13, 2008).

<sup>118</sup> MAG Response to Staff Data Request 1(f) (Oct. 14, 2008).

<sup>119</sup> Saracen Response to Staff Data Request 1(f) (Dec. 5, 2008).

TransAlta Energy Marketing (U.S.) Inc. (TransAlta) states it didn't view the Path 1 transactions it placed any differently than any other physical path, and didn't believe they would create significant amounts of loop flow.

These representative comments reflect a sometimes imperfect understanding of conditions on the system; this is hardly surprising, given the complex interplay of elements that go into determining the direction and magnitude of flows at any particular flow gate. Indeed, NYISO itself, although it is privy to far more information than are market participants, did not appreciate until well after the fact that loop flow was apparently being created by the circuitous schedules. As late as its June 30, 2008 finalized written referral, NYISO was still reporting that it was in the process of trying to determine whether there was a connection between the loop flows observed and the scheduling of transactions along Path 1, stating that "to date, MMP has not been able to definitively show that the change in loop flows was caused by changes in Market Participant transaction scheduling behavior."<sup>120</sup> It was only until later, after it had performed complex mathematical correlation studies, that NYISO came to that conclusion.<sup>121</sup>

That NYISO itself was confused and uncertain about the flow effects of the circuitous schedules is confirmed by the fact that NYISO was aware that transactions sourcing at the Bruce Proxy Bus and sinking in PJM followed Path 1, and not the direct route across the NYISO/PJM interface. If it had been clear to NYISO that such a schedule would cause significant loop flow, presumably it would have made ad hoc adjustments for the schedules, or accelerated its 90-day rolling average convention for the day-ahead modeling of loop flow. Its modeling procedures allow for such changes,<sup>122</sup> a fact that is underscored by NYISO's moving to a 30-day rolling average after its Exigent Circumstances Filing was approved.<sup>123</sup> NYISO states it did not make more rapid adjustments in its day-ahead model because "it is not possible to accurately predict, on a Day-Ahead basis, the actual value of unscheduled flows that will occur in a given hour of the Real-Time Energy Market."<sup>124</sup> If NYISO cannot predict loop flows, and didn't

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<sup>120</sup> NYISO Referral at 19.

<sup>121</sup> See Exigent Circumstances Filing at 14-22.

<sup>122</sup> NYISO Response to Staff Data Request 2 (Oct. 20, 2008).

<sup>123</sup> NYISO Response to Data Request 3 (Oct. 28, 2008).

find Path 1 transactions to be a problem warranting accelerated day-ahead modeling, it can hardly be expected that market participants, which have access to far less information, would be able to do so.

Market participants may also have had good reason to believe that loop flow was not a concern to NYISO. While uncompensated loop flow presents overall market inequities, it can either help or hurt a given RTO. Historically, NYISO has benefited from Lake Erie loop flow, which has been predominantly counterclockwise. Counterclockwise flows tend to reduce congestion on NYISO's west-to-east and north-to-south transmission constraints, whereas clockwise flows have the opposite effect.<sup>125</sup> Not surprisingly, then, NYISO did not raise concerns about schedules causing counterclockwise loop flow, and it was not until loop flows shifted to a more consistently clockwise direction that NYISO referred to the Commission the scheduling activity it believed was contributing to those flows.

Is it possible that the various comments by market participants about their level of understanding of loop flow are false or misleading, and they actually understood the problem more clearly? Of course that is possible; however, OE staff's examination of the documents submitted in response to discovery requests, including such usually revealing items as e-mails, did not demonstrate any deeper awareness of the issues. Rather, the documents suggest that the traders were principally focused on the task of seeking out profitable pricing opportunities, and didn't possess the tools or sophistication to predict whether any loop flows that might result from those schedules would create harmful effects in the market.

## **2. Scierter and Uplift**

The same considerations involved in analyzing whether market participants knew whether they were contributing to significant amounts of loop flow are also at play in the next question, whether market participants thought or should have thought they were contributing to uplift. If market participants did not reasonably know whether they were contributing substantially to loop flow, they similarly could not know whether they were contributing to uplift. In fact, it would be even harder to know the latter, since RTOs (notwithstanding NYISO's 90-day procedure) typically adjust for the anticipated effects of loop flow in their day-ahead modeling. Additionally, inasmuch as uplift results from the interplay of

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<sup>124</sup> NYISO Response to Staff Data Request 2 (Oct. 20, 2008).

<sup>125</sup> Exigent Circumstances Filing at 10.

many factors, including generation and transmission outages, changes in load demand, thunderstorm alerts, the cost of fuel and the like, a market participant would have no good way of predicting that the placing of a given schedule would necessarily contribute to uplift. It is instructive that even when market participants began noticing increases in their bills, they were confused about the causes.<sup>126</sup>

As to whether the circuitous schedules did in fact contribute to uplift, the answer appears to be a qualified yes. A relatively strong correlation between the schedules and loop flow has been demonstrated but, for the reasons pointed out earlier, the magnitude of the amount of uplift attributable to the circuitous schedules is indeterminate. It is quite possible that when adjustments are made for the effects of fuel, transmission outages, thunderstorm alerts and other factors, the amount of uplift actually attributable to the circuitous schedules may well be considerably smaller than the totals reported by NYISO, and certainly smaller than the amounts that have been mentioned in various media accounts. NYISO's adherence to its 90-day look back for adjusting its day-ahead modeling to account for the effects of loop flow also exacerbated the need to redispatch in real-time, thus contributing to uplift costs.<sup>127</sup> As mentioned earlier, an accurate determination of the amount of uplift solely attributable to the schedules, even without factoring in the lack of a more timely adjustment to the day-ahead models, is not possible without rerunning the commitment models.

For all these reasons, OE staff concludes that the element of scienter has not been met with respect to the placing of circuitous schedules. Market participants had not been advised to avoid the creation of loop flow; they were not advised that their schedules were creating loop flow; they received approval or acquiescence when they inquired whether they could place the schedules; they had at best an imperfect means of estimating whether their transactions would produce loop flow; they could not predict the effect of loop flow on uplift, given all the forces at play on the system and the ability of the RTOs to adjust day-ahead

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<sup>126</sup> See Motion to Intervene and Comments of the New York Municipal Power Agency and the Municipal Electric Utilities Association of New York, Docket No. ER08-1281-000 (Aug. 1, 2008).

<sup>127</sup> Significantly, NYISO reports that the recent flip back to clockwise loop flows has not affected uplift, and attributes that to its new methodology for incorporating loop flow effects into the day-ahead modeling. Telephone Conference with Rick Gonzales, NYISO Vice President of Operations, and Elaine Robinson, NYISO Director of Regulatory Affairs (April 13, 2009).

models to account for predicted loop flow; and they had grounds to expect that the price signals they were receiving reflected an efficient market design.

There may well have been some market participants who refrained from placing circuitous schedules because they thought the schedules might exploit a pricing methodology mismatch among the RTOs. For instance, Rainbow Energy Marketing Corporation (Rainbow), although it did place some Path 1 transactions, stated that it decided not to participate further because it thought the opportunity “resulted from seams issues between the various ISOs as opposed to economic necessities of the electric markets.”<sup>128</sup> However, there is no definitive way for a trader, looking forward without the benefit of hindsight, to know whether an arbitrage opportunity reflects true fuel cost and congestion differences, or a market design flaw. The trader must therefore decide, in the moment, whether to err on the side of caution or to respond to the price signals. If RTOs fail to provide trustworthy price signals, thus causing skittishness on the part of the industry, the resulting conservatism in placing trades can be as deleterious to the market as too aggressive an approach.

In any event, the evidence shows that market participants that placed the circuitous schedules of concern here did not intend to impair, obstruct or defeat a well-functioning market, nor did their actions constitute recklessness. Therefore, the element of scienter has not been met. And, as discussed above, neither has the element of use of a fraudulent device, scheme or artifice or the making of a material misrepresentation or material omission. Therefore, OE staff concludes that market participants did not violate the Commission’s anti-manipulation rule in placing the Path 1 and Path 5 schedules.

## **V. Additional Circuitous Transactions**

As mentioned earlier, OE staff discovered additional configurations of circuitous schedules during the course of its data analysis. It determined that six entities had placed Path 1 transactions in the same hour as trades from IESO into NYISO, and that at least five entities had placed Path 1 transactions in the same hour as PJM-NYISO trades, although these were mostly de minimis in nature. OE staff also learned through a referral that at least one entity had placed Path 1 transactions in the same hour as Path 5 transactions. OE staff decided to extend its investigation to examine these configurations with a view to determining whether the placing of additional trades at the same time as Path 1 or Path 5 transactions raised concerns not present in the placing of the Path 1 or Path 5 transactions

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<sup>128</sup> Rainbow Response to Staff Data Request 1(a) (Nov. 17, 2008).

themselves.<sup>129</sup> In particular, OE staff considered whether the additional trades were purposefully combined with the Path 1 or Path 5 transactions, and if so whether such combining was done to achieve an illegitimate purpose. Each of these configurations is examined separately below.

### **A. Path 1 with IESO-NYISO**

The reasons for placing simultaneous Path 1 transactions and IESO-NYISO trades varied from market participant to market participant, but fall within two categories: they were placed independently of one another based on the separate economics of the transactions,<sup>130</sup> or the IESO-NYISO trade was scheduled as a hedge against congestion and volatility on the Path 1 transaction.<sup>131</sup> Some companies did both; at times they placed the trades independently, and at other times used the IESO-NYISO trade as a hedge against Path 1.<sup>132</sup>

To probe the first reason, OE staff examined the profits and losses on the overlapping transactions for the three entities that claimed they placed the schedules independently. OE staff found that the monthly net profit and loss on the Path 1 transactions for each of the entities was consistently profitable.<sup>133</sup> For two of the entities, the monthly net profit and loss on the IESO-NYISO transactions was consistently profitable, and for the third entity it was profitable in four of the six months in which the entity had overlapping transactions. This is generally consistent with the companies' assertions of an independent profit

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<sup>129</sup> There are of course many other possible configurations of circuitous schedules. Potomac Economics described at least one such schedule (although not one for which a more direct path was available, and not involving a schedule through New York) at its staff briefing on the 2008 State of the Market Report for MISO, held May 27, 2009 at Commission headquarters.

<sup>130</sup> Constellation, MAG and TransAlta.

<sup>131</sup> Fortis.

<sup>132</sup> RBC Energy Services LP (RBC); Silverhill.

<sup>133</sup> The information was culled from trading data provided by the entities in question and summarized in OE staff exhibit "Path 1 and Ontario to New York Trades" (April 15, 2009). The months examined varied as not all the entities placed overlapping transactions in the same months.

motive.<sup>134</sup> OE staff also examined the transactions to see if the varying volume of trades and MWs involved suggested independent or connected transactions, and found an insignificant percentage of total crossing transactions that were exact MW matches. (6.06%, 3.62%, and 9.68%). This is consistent with traders (typically different traders) entering a number of transactions of varying sizes in both directions on an independent basis. Finally, OE staff did not uncover any other evidence, such as e-mail traffic, that would suggest something other than an independent profit motive for these overlapping transactions.

The remaining three of the six entities that placed Path 1 transactions at the same time as an IESO-NYISO trade stated they sometimes used the IESO-NYISO trade as a partial or full offset to the NYISO-IESO leg of the Path 1 transaction, in order to hedge their exposure to congestion or volatility. Fortis, for instance, reports that it used the hedge for those hours in which it anticipated congestion or volatility in NYISO, based on the following considerations: buying patterns in NYISO, futures prices on the IntercontinentalExchange (ICE) showing a strong NYISO Zone A day ahead pattern (Zone A is NYISO's western zone, which Fortis states is highly correlated with NYISO's Zone O, the interface point between IESO and NYISO), and a general trend of upward price movements on a day-to-day basis. Fortis provided OE staff with representative transactions showing the risks and rewards of three configurations: Path 1 by itself, Path 1 with the hedge, and an alternative transaction of IESO-MISO-PJM (i.e., a Path 1 transaction without the first leg of NYISO-IESO).<sup>135</sup> These are presented below:

	Example 1	Example 2	Example 3	Example 4
<i>Illustrative Day/Hour</i>	May 14 h20	July 11 h13	June 22 h12	July 9 h6
Base Transaction				
<i>Buy NYISO DAM</i>	(\$83.57)	(\$110.00)	(\$68.68)	(\$87.12)

<sup>134</sup> OE staff only examined crossing transactions, and did not undertake a rigorous examination of all the IESO-NYISO trades of these entities, or how those trades might relate to other positions and products the entities might have in NYISO or elsewhere. Such an examination was beyond the scope of the inquiry needed to determine whether the IESO-NYISO trades, when overlapped with Path 1 transactions, rendered the Path 1 transactions suspect. The IESO-NYISO trade, of course, is not by itself a circuitous transaction.

<sup>135</sup> Fortis Response to Staff Data Request 9 (Mar. 16, 2009).

<i>Zone O</i>				
<i>Sell ONT RTM Zone NYISO</i>	\$85.71	\$85.85	\$64.50	\$38.95
<i>Buy ONT RTM Zone MISO</i>	(\$85.71)	(\$112.59)	(\$64.50)	(\$38.95)
<i>Sell MISO RTM Zone NYISO</i>	\$86.40	\$77.28	\$100.75	\$26.55
<i>Buy MISO RTM Zone PJMC</i>	(\$85.64)	(\$77.18)	(\$100.50)	(\$25.72)
<i>Sell PJM DAM Zone NYISO</i>	\$103.13	\$132.184	\$88.66	\$65.91
<i>Profit/Loss</i>	\$20.32	(\$4.456)	\$20.23	(\$20.38)
<b>Base Transaction + Hedge</b>				
<i>Buy ONT RTM Zone NYISO</i>	(\$85.71)	(\$85.85)	(\$64.50)	(\$38.95)
<i>Sell NYISO DAM Zone O</i>	\$83.57	\$110.00	\$68.68	\$87.12
<i>Profit/Loss (Base + Hedge)</i>	\$18.18	\$19.694	\$24.41	\$27.79
<i>Illustrative Day/Hour</i>	May 14 h20	July 11 h13	June 22 h12	July 9 h6
<b>Alternative Transaction</b>				
<i>Buy ONT RTM Zone MISO</i>	(\$85.71)	(\$112.59)	(\$64.50)	(\$38.95)
<i>Sell MISO RTM Zone ONT</i>	\$85.49	\$76.76	\$76.91	\$26.12
<i>Buy MISO RTM Zone PJMC</i>	(\$85.64)	(\$77.18)	(\$100.50)	(\$25.72)
<i>Sell PJM DAM Zone NYISO</i>	\$79.52	\$117.46	\$67.58	\$47.81
<i>Profit/Loss</i>	(\$6.34)	\$4.45	(\$20.51)	\$9.26

In the foregoing exhibit, Example 1 describes a typical hour; in these circumstances, if Fortis used the hedge, it would do so with only a partial offset. Adding the hedge reduced the Path 1 profit but left the combination profitable. Example 2 describes an hour in which there is congestion in Ontario, which may render Path 1 unprofitable.<sup>136</sup> Using the hedge restored the overall profitability of

<sup>136</sup> Congestion in IESO poses a significant risk; under IESO market rules, entities wheeling through the RTO are price takers and cannot place a “stop-loss”  
(continued...)

the combination. Example 3 describes an hour in which there is congestion in MISO's real time market, and illustrates the economic superiority of the Path 1 transaction, with or without the hedge, to the alternative of IESO-MISO-PJM. Example 4 describes an hour in which there is volatility in NYISO (relatively high prices in Zone O). If prices diverge between the real time and the day ahead, Path 1 could become uneconomical; however, the IESO-NYISO hedge preserved an overall profit.

These examples illustrate that while Path 1 by itself is profitable in a typical hour, it may incur losses in the event of congestion or volatility. Fortis concluded that adding the hedge preserved profitability in a typical hour, and protected profitability in times of congestion or volatility. In all cases, the alternative transaction was less profitable than the combination of Path 1 and the hedge, which explains why Fortis did not simply place an IESO-MISO-PJM trade. The examples are consistent with an attempt to reduce risk, the core element of a true hedge, and are not suggestive of an attempt to artificially affect prices or congestion.<sup>137</sup> Taking opposite transactional positions, whether as partial or complete offsets, is not in itself manipulation. As an OE staff report endorsed by the Commission has determined, hedges can be entirely consistent with rational and legitimate economic decision-making.<sup>138</sup>

The scienter considerations discussed above in connection with the Path 1 and Path 5 transactions apply equally here. Fortis, for instance, states that it does not own transmission or generation assets in these markets, and has no insight or

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limit to their transaction, which means their costs could be significant with no ability to cut the transaction. Transcript of telephone conference among Jeff Francoz, Silverhill President; George Radan, Silverhill Senior Vice President, Trading and Resources Management; Jason Brand, Silverhill Manager, Day Ahead Trading; and Michael Wander, Vice President, Potomac Economics (July 24, 2008) (Silverhill Tr. 23:2-28.4).

<sup>137</sup> Interestingly, in July of 2008, the trader who had been placing these transactions stopped using the hedge after he discovered that reducing it while he was on vacation did not impair Path 1 profitability. Fortis Response to Staff Data Request 10 (Mar. 16, 2009).

<sup>138</sup> *DC Energy, LLC*, 124 FERC ¶ 61,295 (2008), Attachment 1, "Non-Public Investigation into DC Energy's Allegations of Market Manipulation by HQ Energy in the New York Independent System Operator Energy and Transmission Congestion Contract Markets" at 17-25.

information about physical flows from a power perspective beyond what the price information posted by the markets reveals.<sup>139</sup> The evidence strongly suggests that the market participants placed these trades based on the economics of their price points, rather than on considerations of how the power would flow or whether the transactions would increase or decrease congestion or uplift in any given RTO.<sup>140</sup>

### **B. Path 1 with PJM-NYISO**

A limited number of transactions occurred in which a Path 1 transaction was placed in the same hour as a PJM-NYISO trade.<sup>141</sup> The PJM-NYISO interface is heavily traded, and some overlap in these trades is in itself not surprising. For the entities that had overlapping trades in the same hour, the hours of overlap were too light to draw meaningful conclusions from the profits and losses associated with the trades. For instance, the company that placed the most overlapping trades (TransAlta) did so in only 521 hours over a four-month period; the company that placed the second most overlapping trades (Constellation) did so in 331 hours over the four-month period; and the company that placed the third most overlapping trades (Silverhill) did so in 76 hours over the four-month period.

During the periods of overlapping transactions, all but one of the five entities examined had net profits on their Path 1 transactions (the fifth entity had profits in three out of the four months but an overall net loss of \$179,738.50). During these same periods of overlapping transactions, some of the entities had profits on their PJM-NYISO transactions, and others did not. Fortis had an extremely small loss of \$208.93, and only had overlapping transactions in one month. MAG had a net loss of \$16,005.00, and only had overlapping transactions in two months. Constellation had profits in two months and losses in two months, for a net loss of \$37,219.29. The highest loss was TransAlta. That company had profits for three straight months, followed by one month of losses, for a net loss of \$149,858.15. While no meaningful conclusions can be drawn from such spotty

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<sup>139</sup> Fortis Response to Staff Data Request 11 (Mar. 16, 2009).

<sup>140</sup> As noted above, at least one participant assumed an economic response to price signals would be beneficial, inasmuch as it would reduce price differentials in the market. MAG Response to Staff Data Request 1(f) (Oct. 14, 2008).

<sup>141</sup> The information in this section was culled from trading data provided by the entities in question and summarized in OE staff exhibit “Path 1 + PJM to New York Transaction Summary” (April 15, 2009).

data, the low volume of the PJM-NYISO trades at the same hour as a Path 1 transaction itself suggests the absence of a concerted strategy to combine them, as does the fact that there is no apparent advantage to placing them simultaneously.

All five of the companies that scheduled overlapping Path 1 and PJM-NYISO transactions state they were independently placed, based on separate analyses of the economics of the involved price points.<sup>142</sup> The Path 1 transactions capitalized on the difference between the western NYISO price and the price in PJM for NYISO-sourced power, as discussed earlier in this report. The PJM-NYISO trades reflected price spreads between the PJM and NYISO markets at the Keystone interface. A consideration of the trading data, the economics of the situation, and the statements of the companies all suggest that the PJM-NYISO transactions were distinct from the Path 1 transactions. As a result, there is no reason to suppose that the occasional chance occurrence of these trades in the same hour is suggestive of a fraudulent intent or a scheme to artificially raise prices or cause artificial congestion.

### **C. Path 1 with Path 5**

Potomac Economics submitted a referral to the Office of Enforcement on August 13, 2008, informing OE staff that one entity, Silverhill, had in some hours been simultaneously scheduling both Path 1 and Path 5 transactions.<sup>143</sup> Potomac Economics alleged that the simultaneous placing of these schedules formed a complete loop around Lake Erie from a scheduling settlement perspective, with the result that Silverhill was being compensated for schedules that departed dramatically from physical flows, activities which in the view of Potomac Economics might constitute manipulative practices.<sup>144</sup> In order to explore these allegations, OE staff reviewed data responses from both Silverhill and Potomac Economics, held multiple telephone conferences with each entity, and examined

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<sup>142</sup> Constellation Response to Staff Data Request CECG 4-13 (Mar. 23, 2009), Fortis Response to Staff Data Request 17 (Mar. 16, 2009), MAG Response to Staff Data Request 17 (Feb. 24, 2009), Silverhill Response to Staff Data Request 26 (Feb. 27, 2009), TransAlta Response to Staff Data Request 17 (Mar. 11, 2009).

<sup>143</sup> Potomac Economics, Inc., Referral of Conduct by Aquilon in the Midwest ISO Market, Aug. 13, 2008 (Potomac Referral). (Silverhill is variously referred to as Aquilon).

<sup>144</sup> *Id.* at p. 8.

Silverhill's trading data. Since OE staff's previous analysis already determined that separately placed Path 1 transactions and Path 5 transactions did not in themselves constitute manipulation, OE staff first considered whether Silverhill had intentionally combined the transactions to achieve some purpose beyond making profits on each transaction separately.

OE staff discovered that both sets of transactions were quite profitable to Silverhill.<sup>145</sup> For the Path 1 transactions, Silverhill had small losses in the months of October and November of 2007, followed by steady profits in the succeeding eight months, for a total profit of \$2,069,997.57.<sup>146</sup> For its Path 5 transactions, Silverhill had 10 months of consistent profits, for a total profit of \$5,765,112.40. OE staff also considered whether there was a high correlation between the two transactions, and found there was not. A simultaneous transaction was scheduled in 49.83% of the total Path 5 transaction hours, and in 58.86% of the total Path 1 transaction hours. Of those simultaneous hours, only 10.15% contained exact MW matches for the two transactions. These percentages do not suggest a combined strategy for the two types of trades.

There also does not appear to be an advantage to combining the trades from a settlement perspective. The pricing points remained distinct, and the transactions were separately priced based on the sources of each transaction. Silverhill employees have consistently insisted that they placed these transactions independently, based on their separate economics. Jason Brandt, Silverhill Manager of Day-Ahead Trading, explained it as follows in a July 24, 2008 telephone conversation with a representative of Potomac Economics:

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<sup>145</sup> The information in this paragraph was culled from trading data provided by Silverhill and summarized in OE staff exhibits "Transaction Summary for Silverhill" (April 16, 2009) and "Silverhill's Simultaneously Occurring Path 1 and Path 5 Transaction Summary" (April 16, 2009).

<sup>146</sup> Just as some entities hedged their Path 1 transactions with an IESO-NYISO trade, Silverhill sometimes hedged its Path 1 transactions with a MISO-IESCO trade. As discussed above, congestion in IESO was a serious risk in a Path 1 transaction, as an entity wheeling through IESO had to accept the interface price without any "stop loss" protection. A schedule going from MISO into IESO at the interface point at which the Path 1 transaction exits mitigated that risk, so long as the cost of congestion in IESO exceeded the transmission cost of the MISO-IESO trade. Silverhill Tr. 28:5-31:1.

As to why we would choose to source in New York and sink in PJM or source in PJM and sink in MISO, those were independent decisions and oftentimes I would do the PJM to MISO trade with a little bit of the New York to PJM trade – sometimes I'd do just one of those trades and put all my volume and all my bar [sic – should read VaR, for value-at-risk] on one of those trades, sometimes I'd do 100 megawatts on one trade, 25 megawatts on the other, they were all based on my evaluation of what kind of profit they were going to produce. So for example, if I saw that MISO was going to have a very high-load day – we have some software that we've created in house that goes and extracts load data from the various power pools to help me make day-ahead decisions. If I saw that PJM was going to clear fairly low or the load was not, you know, the load was a reasonable load but MISO's load was promising to be very high, then I'd obviously schedule most of my risk on the PJM to MISO trade. If, on the other hand, PJM load was promising to be very high and New York not so much, then I'd be more encouraged to buy out of New York at Ontario and wheel it around and sink it in PJM. If New York and PJM were high, then I might choose to do a little bit of each, because I wouldn't want to commit myself to one spread and then find out that really I should have done 100 percent the other trade.<sup>147</sup>

OE staff also considered whether forming a complete loop around Lake Erie in itself should raise concerns (the transactions together actually formed a loop with overlapping segments, if considered on an RTO to RTO basis). A complete loop could raise concerns if combining the two schedules nullified the transactions and resulted in no power flow or generation dispatch.<sup>148</sup> This, however, is not the case with simultaneous Path 1 and Path 5 transactions. While no generation would be dispatched in PJM, generation would be increased in

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<sup>147</sup> Silverhill Tr. 18:7-19:12.

<sup>148</sup> See Potomac Response to Staff Data Request 15.

NYISO and decreased in MISO.<sup>149</sup> Power would flow, and would split around Lake Erie in accordance with the laws of physics discussed above.<sup>150</sup>

From an economic perspective, the simultaneous transactions also did not form a nullity. Silverhill independently received a profit and loss on each. Both MISO and PJM use the Tag Based Pricing convention of source and sink; MISO compensated Silverhill on the Path 5 transaction at its price for PJM-sourced power, and PJM compensated Silverhill on the Path 1 transaction at its price for NYISO-sourced power.<sup>151</sup> Thus, both from an economic and from an operational point of view, the simultaneous placing of these transactions did not nullify one another.

Potomac Economics' principal concern with these transactions is that Silverhill profited from relieving congestion although the power flows resulting from their schedules did not actually provide congestion relief.<sup>152</sup> But this is true of a Path 5 transaction whether it is placed simultaneously with a Path 1 transaction or not. And, as discussed above, a divergence between physical flows and price incentives suggests a problem of market design, not of manipulation. All traders, certainly all congestion traders, make their living by looking for differences in prices from one node to another.<sup>153</sup> If their rational responses to price signals have an undesirable effect, whether as the result of loop flows or some other problem, either the price signals must be adjusted or the transactions themselves prohibited. In fact, Silverhill's traders assumed their schedules helped relieve congestion precisely because the price signals to which they were responding encouraged the placing of those schedules:

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<sup>149</sup> MISO Response to Staff Data Request 13 (Oct. 29, 2008); Telephone conference with Frederick S. Bresler III, PJM Executive Director of Market Operations (April 22, 2009) (Bresler teleconference).

<sup>150</sup> Bresler teleconference.

<sup>151</sup> Silverhill suggests that if markets are designed correctly, a pricing settlement based on a complete loop would be zero and thus uneconomic (and the transaction a net loss due to transmission costs). Silverhill Tr. 39:3-9, 44:13-45:8.

<sup>152</sup> Potomac Referral at p. 2, Potomac Response to Staff Data Request 7 (Oct. 2, 2008).

<sup>153</sup> The principal cause of such differences is congestion (if there were zero congestion, the difference in prices among the nodes throughout the Lake Erie region would be negligible).

JASON BRANDT (Silverhill Manager, Day Ahead Trading):  
And it's only now that we realized – since New York published this exigent circumstances filing, it's only now that we realized that these schedules that we were counter-scheduling essentially around Lake Erie in a direction opposite to the loop flow, what we thought we were helping – if we weren't helping, we wouldn't be getting paid congestion, would we.

MICHAEL WANDER (Potomac Economics Vice President):  
Or you wouldn't think you would.

JASON BRANDT: That's the key point right there. So when you're trading this thing, we're saying hey we're getting paid to do this, we must be helping or else they wouldn't pay us to do this, they'd set the LMPs to hurt us, to discourage us from doing this and then we'd have to look for something else, for another trade. Because we only get paid to do the right thing. That's what a marketing group like us lives and dies by.<sup>154</sup>

Silverhill had reason to believe that NYISO's prices had been designed to encourage the behavior the RTO desired, being familiar with PJM's history of adjusting price signals and market design to accomplish a desired result.<sup>155</sup> In this case, NYISO decided to compensate wheels through its system based on the divergent price signals discussed above, and these signals constituted the incentives capitalized on by traders placing the Path 1 and Path 5 transactions. The fact that deleterious effects (to NYISO) may have resulted from these pricing incentives suggests not manipulation, but the need for a market redesign.

In summary, for each of the three cases discussed above involving additional transactions occurring at the same time as a Path 1 transaction, the same considerations regarding lack of a fraudulent device, scheme or artifice and lack of

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<sup>154</sup> Silverhill Tr. 32:19-33:15.

<sup>155</sup> Silverhill's Manager, Day Ahead Trading stated: "PJM...identified a scheduling glitch within PJM and their neighbor MISO that looked like it helped but in the end, the way the power actually flowed, they were wrong, so they restructured the pricing structure within PJM and came in with a completely revamped LMP model.... So that was just another example of an imperfect market that they identified what the problem is, they fine tuned it a little bit, came in with a new structure and now PJM runs that much more efficiently." Silverhill Tr. 46:20-48:10.

scienter are at play as were discussed in connection with OE staff's examination of the separately placed Path 1 and Path 5 transactions. The schedules were all openly placed on the OATI system, were made in response to price signals for the purpose of making a profit, and had no ancillary purpose such as artificially affecting price or congestion. Generally speaking, the traders were either unaware of the power flow effects of these trades, did not understand how the power might flow, or assumed the flows would be beneficial since the price signals encouraged the trades. Therefore, there is nothing in these additional configurations that suggests a violation of the Commission's anti-manipulation rule.

## **VI. Summary**

Based on its examination of the evidence adduced during the course of its investigation and upon the relevant legal principles, OE staff concludes that market participants did not commit tariff violations or violate the Commission's anti-manipulation rule in placing the Path 1 and Path 5 schedules cited in the NYISO Referral, or in placing the additional configurations discussed in this report. The problems of loop flow that triggered this investigation are essentially ones of market design, and the inequities that arise from differences in pricing methodologies and from the use of contract path-based pricing will need to be resolved on a region-wide basis.