UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.	)	Docket No. ER17-758-000

MOTION TO INTERVENE AND COMMENTS OF THE MARKET MONITORING UNIT ON THE NEW YORK ISO REQUEST FOR TARIFF WAIVER

Potomac Economics moves to file comments concerning the filing by the New York Independent System Operator ("NYISO") on January 6, 2017 pursuant to the above-captioned proceedings. The NYISO asks for a waiver that would allow it to leave its current real-time pricing software in place and not restate real-time prices during transmission shortage conditions going back to February 2016. Pricing under transmission shortage conditions is a key element of the overall incentives that motivate resources to perform reliably and for investment in locations where resources are needed for reliability. Potomac Economics is the Market Monitoring Unit ("MMU") for the NYISO and is responsible for monitoring the electricity markets. As the MMU, we are expected to identify report of market performance and evaluate existing and proposed market rules.[1]

I. NOTICE AND COMMUNICATIONS

All correspondence and communications in this matter should be addressed to:

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[1] See NYISO MST Section 30.4.5.1 and 30.4.5.2.

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II. BACKGROUND AND PURPOSE

The NYISO recently concluded that its real-time pricing and scheduling software had been implemented in a manner that was not consistent with Sections 17.1.1 and 17.1.4 of its MST. Furthermore, the NYISO has found that significant aspects of the pricing logic were not addressed in its tariffs and had not been adequately disclosed to stakeholders in presentations on the subject.

On January 6, the NYISO filed a formal request for the Commission to waive MST Sections 17.1.1 and 17.1.4. Specifically, the NYISO requested a waiver for real-time pricing outcomes going back to the activation of the GTDC project software on February 11, 2016 and until such time as it can implement new tariff provisions. The NYISO indicated that it intends to develop these new tariff provisions in its normal governance process and submit them in a 205 filing by April 30.

We support the NYISO's request for a waiver of all real-time pricing outcomes going back to February 11, 2016 because any attempt to restate prices would create significant financial risk for market participants and undermine confidence in the NYISO markets. Furthermore, we agree with the NYISO that there is no instantaneous fix that would bring its real-time software into compliance with the tariff without creating other problems, so we support the NYISO's request to leave the current software in place temporarily.

The NYISO's waiver request also outlined its plan to improve the pricing software going forward both in the short-term and in the long-term.[2] We support the NYISO's long-term objective to develop constraint-specific GTDCs that are appropriate for different facilities and circumstances. In the short-term, the NYISO has begun to work with stakeholders on proposed modifications that could be filed by April 30 and implemented shortly thereafter.[3] We support the substance of the NYISO's short-term proposal, however, we are concerned that if the NYISO cannot garner the required stakeholder support, the result would leave the existing software in place indefinitely even though the existing software was not approved by stakeholders or found to be just and reasonable by the Commission. Therefore, we recommend that the Commission require the NYISO to make a compliance filing by April 30 that proposes short-term improvements in the pricing rules.

III. Comments on Current Pricing Software and Proposed Modifications

We agree with the NYISO's assessment that the current software is not fully consistent with MST Sections 17.1.1 and 17.1.4 and not adequately described in its tariffs. This section explains our concerns with the efficiency and reasonableness of real-time prices calculated by the current software, and it discusses the improvements that the NYISO has proposed in the short-term.

A. Concerns Related to the Current Pricing Software

The treatment of individual transmission constraints in the NYISO's real-time pricing software depends on two factors: the constrained facility's Constraint Reliability Margin

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[2] The short-term plan is discussed in the NYISO's filing on pages 11-12. The long-term plan is discussed on pages 12-13.

[3] The short-term proposal was outlined in slides 21 and 22 of the NYISO's December 21 presentation to the MIWG.

("CRM") and a "preliminary screen" that is performed before each economic dispatch run.[4] The CRM is a value set by NYISO to provide a margin between a facility's actual transfer limit and the transfer limit that is imposed in the market software. This margin is used for most constraints because of loop flow and other differences between modeled flows and actual flows.[5]

Based on these two factors, the NYISO's real-time market software divides constraints into the following three categories: [6]

1) Zero-CRM constraints – This category includes facilities that usually lead out of generation pockets, so loop flows and other non-modeled factors are typically smaller. This makes the CRM unnecessary so the CRM is zero.

2) Feasible Non-Zero-CRM constraints – The "preliminary screen" evaluates whether there are sufficient resources to resolve the constraint. If resources are sufficient, constraints are included in this category.

3) Infeasible Non-Zero CRM constraints – The "preliminary screen" determines that sufficient resources are not available to resolve the constraint.

For categories (1) and (3), the economic dispatch runs with a $4,000/MWh shadow price cap for the constraint, and the constraint limit is "relaxed" (i.e., increased) to allow the economic dispatch to find a feasible solution. The shadow price cap ensures that the model does not dispatch relief that would cost more than $4,000/MWh, but the software will utilize relief and may establish shadow prices that are well above the GTDC.

For category (2), the software operates the same way except that the GTDC is applied. Under the GTDC, the economic dispatch can utilize two additional "resources" to relieve the constraint: up to 5 MW of relief at a cost of $350/MWh and up to 15 MW of relief at a cost of $2,350/MWh.[7]

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4 The preliminary screen is described on page 5 of the NYISO's January 6 filing.

5 When NYISO uses a CRM on a constraint, it generally exceeds 20 MW.

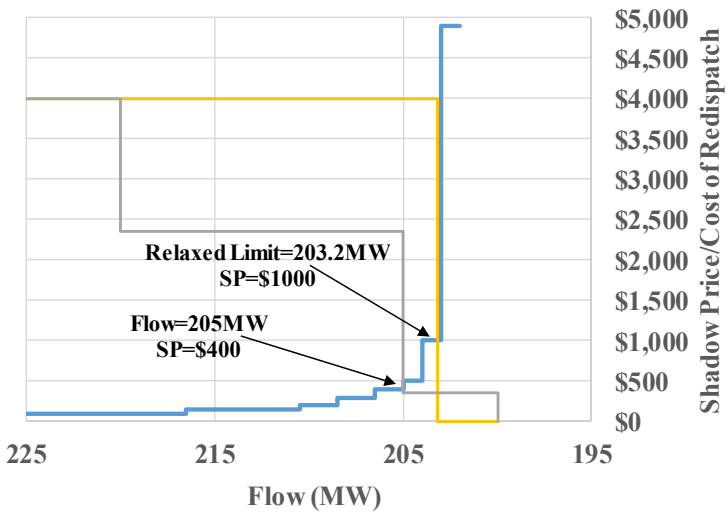
6 The logic for determining how constraints are broken into the three categories was illustrated by a diagram on slide 4 of the NYISO's December 21 presentation to the MIWG.

7 These details are discussed on pages 4-6 of the NYISO's January 6 filing.

The current process implemented with the GTDC differs from the previous process in two ways. First, the previous process did not apply the GTDC, so all three categories were treated the same. Second, when the process relaxes a transmission constraint to find a feasible solution, the NYISO previously raised the constraint limit to the achievable flow level plus a limit adjustment of 8 MW. Effectively, it relaxed the constraint by 8 MW more than necessary to find a feasible solution. When it implemented the GTDC, it also reduced this additional relaxation adjustment in the limit from 8 MW to 0.2 MW. As we discussed in our quarterly State of the Market reports, this has led to significantly higher pricing outcomes during periods of acute transmission congestion.[8] By reducing the adjustment, the NYISO began establishing shadow prices corresponded to the highest-cost relief that it utilized. While this is generally good because it maximizes the consistency of the relief utilized and the prices, employing this process under the $4000 shadow price cap frequently led to shadow prices higher than the GTDC and led to increased price volatility than would have occurred using the 8 MW adjustment.

In the long-run, replacing this relaxation process with the GTDC will have a significant effect on the congestion pricing. To illustrate the effect of using the GTDC, Figure 1 shows the use of the limit adjustment of 0.2 MW compared to the application of the GTDC. When the GTDC is applied for a small violation like the one

Figure 1



[8] See for example: Potomac Economics, *Highlights from the Quarterly Report on the New York ISO Electricity Markets: Second Quarter of 2016* at 65-69 (presented at the August 29, 2016 MIWG meeting), available at: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-08-29/NYISO%20Quarterly%20Report_2016-Q2__MIWG%208-24-2016.pdf.

shown in Figure 1, the lowest step is used to set the shadow price and relatively expensive resources are not utilized. In this example, the GTDC would set the shadow price at $400 rather than the $1000 shadow price that would be set by the current relaxation process. The resulting violation is slightly larger because the relief priced between $400 and $1000 is not deployed. However, given that the facility's CRM is at least 20 MW, this outcome provides a more reasonable signal of the condition of the operating system and severity of the constraint.

Ultimately, these design elements are important since transmission constraint violations are a relatively frequent occurrence. We reviewed the binding transmission constraints from the implementation of the current software in February 2016 through the end of 2016 and found a total of 6,978 transmission constraint violations where:

- 6 percent involved Zero-CRM constraints (Category 1)
- 39 percent involved Feasible Non-Zero-CRM constraints (Category 2)
- 55 percent involved Infeasible Non-Zero-CRM constraints (Category 3)

Hence, the GTDC is currently applied to less than 40 percent of the constraint violations (Category 2). We have found that the violations in Category 3 (addressed with the relaxation methodology) exhibit a poor and even inverse relationship between the severity of the constraint and the shadow price.[9] In contrast, the application of the GTDC ensures a clear relationship between the shadow price and the severity of the constraint that is a better signal to market participants.

We agree that it is expedient to leave the current process in place temporarily until an alternative process can be vetted, filed, and approved. However, key elements of the current process were never considered by stakeholders or approved as just and reasonable by the

[9] *Id.*, slide 68.

Commission. [10] We are concerned that if stakeholders cannot reach consensus on an alternative process, the current process will remain in place indefinitely. Therefore, we recommend the Commission require the NYISO to file proposed changes by April 30 in a compliance filing.

B. Discussion of the NYISO's Short-Term Proposal

Ideally, the market software would set constraint shadow prices that rise with the severity of market conditions such that minimal violations would produce substantial but not extreme prices, while larger violations would be reflected in high prices commensurate with shortage conditions. In the long-term, we support the NYISO's plan to develop a detailed set of graduated demand curves that are adapted to the circumstances of different transmission facilities and conditions.

Given our concerns with the current software, we support the proposed short-term alternative that NYISO presented to stakeholders at the December 21 and January 26 meetings of the Market Issues Working Group. [11] The NYISO's proposal would eliminate Category 3 and instead apply the GTDC to all non-zero CRM constraints (i.e., Category 2). This would eliminate the unnecessary price volatility that results from the current process.

The NYISO's proposal would also reduce the second step of the GTDC from $2,350 to $1,175. We support this change because we have found that violations of 5 to 20 MW occur with significant frequency and rarely coincide with a significant operating reserves constraints. From February 11 to the end of 2016, just 2.2 percent of the 2,971 transmission constraint violations of 5 to 20 MW coincided with an operating reserve shortage, so the economic dispatch model rarely faces the decision of whether to secure a transmission facility or maintain operating reserves. Even in intervals that involve such a trade-off, the short-term proposal would apply a

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[10] In particular, the use of the preliminary screen and the reduction in the limit adjustment from 8 MW to 0.2 MW.

[11] See slides 21 and 22 of the NYISO's December 21 presentation to the MIWG.

$4,000 shadow price cap for violations larger than 20 MW, which is the point at which the CRM would be exhausted.

IV. CONCLUSIONS

WHEREFORE, for the foregoing reasons, Potomac Economics, Ltd. respectfully requests the Commission grant its motion to intervene in this proceeding and accept these comments. As described in these comments, we respectfully recommend that the Commission approve NYISO's request for a waiver until alternative pricing rules can be developed and approved to address transmission constraint violations. However, we recommend that the Commission require the NYISO to make a compliance filing with a proposed short-term improvement by April 30 to ensure that the current pricing inefficiencies do not continue indefinitely if the stakeholders cannot agree on a solution.

Respectfully submitted,

/s/ David B. Patton

David B. Patton
President
Potomac Economics, Ltd.

January 27, 2017

CERTIFICATE OF SERVICE

I hereby certify that I have this day e-served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 27th day of January 2017 in Fairfax, VA.

/s/ David B. Patton