

Collateral Requirements for Virtual Transactions on the NYISO

The New York ISO's proposed tariff revisions for establishing collateral for virtual transactions offers several benefits but is burdened by a serious shortcoming: it neglects recent shifts in supply and demand that will affect the premium. The author weighs the existing and proposed methods and also considers two alternatives.

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I. Introduction

To ensure an “amount of credit support necessary to reasonably protect against losses to the market,” independent system operators require customers engaging in virtual transactions to provide collateral. Before the latest tariff revision, the New York ISO (NYISO) required collateral equal to twice the 97th percentile of premiums in the previous 90 days. The NYISO proposed on March 15, 2007, a tariff revision to the collateral calculation. The tariff was

approved by the Federal Energy Regulatory Commission and implemented in June 2007. The new method bases the required collateral on the 97th percentile of premiums in the same two months of the prior two years. Thus, for example, the collateral for December 2007 will be based on the premiums in November and December 2005 and 2006. **T**he change was sought because the lag in the old rolling 90-day method systematically over- or underestimated collateral. For example, September

requirements were based on June, July, and August, setting the collateral higher than it should have been, while June was based on March, April, and May, setting the collateral lower than it should have been. Such incorrect collateral created two problems: it exposed the ISO to credit risk (in the case of the June example) and potentially limited participation in the market by raising the cost of virtual transactions (in the case of the September example). The latter problem may be responsible, in part, for the failure of day-ahead and real-time price convergence in New York.

Although a change to the rolling 90-day method was warranted, we argue that the most recent revision is not an appropriate – or at least not the best – method of calculating collateral. While it is in some ways better than the previous method, in other ways it is worse. Overall, the new method relies too heavily on historical patterns while neglecting recent shifts in supply and demand. Neglecting recent shifts in supply and demand (due, for example, to rapidly changing input fuel prices) opens the ISO to the potential for seriously over- or underestimating the required collateral. Furthermore, as we show below, the 97th percentile level places too high a level of collateral requirement with little additional protection for the ISO against default. Lowering this level to the 90th percentile protects the ISO against losses (the primary goal as stated in the tariff proposal) while also

lowering participation costs to traders.¹

While the calculations we present below to illustrate these points are specific to the NYISO, our findings provide a general lesson for ISOs, as FERC does not have a standard policy regarding VT collateral requirements (CAISO, 2006; also see CAISO, 2007, for a detailed comparison of current requirements). Requiring too high a level of collateral for

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virtual transactions can unnecessarily inhibit participation in wholesale markets which can lead to manipulation, inefficient pricing, and poor performance.

II. Comparison of Collateral Methods

In evaluating the methods, the NYISO (2007, at 3) states that, using actual 2006 data, the 90-day rolling method was compared to the proposed approaches (of which only the method eventually chosen was specified) “to see which one better predicted the amount of credit support

necessary to reasonably protect against losses to the market.” “Better” and “reasonably” were not defined. Presumably the protection against market losses was balanced by a need to minimize collateral, although, again, this was not specified. “Better” and “reasonable” likely incorporate a minimization over the time studied of the daily differences between the method being considered and the actual premium, within constraints of using the 97th percentile and two-day multiplier. Which of the competing interests dominates – lower credit requirement vs. lower expected credit losses – is at the crux of the determination.

The percentile used in the collateral calculations is positively related to the cost to the traders of posted collateral and is negatively related to the potential losses to the ISO. We show below that because RT price spikes are essentially unforecastable, all the methods we evaluate are poor predictors of RT spikes (and hence DA premiums). Because spikes in DA premiums are unpredictable and the spikes are transient, often lasting only a day or two, the 90-day, 97th percentile method “remembers” spikes too long, making the collateral higher than is warranted, even by recent conditions. This is the crux of the tariff change.

The analysis below provides a comparison of five alternatives for calculating the collateral: (1) the new, bi-monthly method, (2) the old, 90-day rolling method, (3) a 30-day rolling

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