Real-Time Market Price Volatility under SMD Operation

Market Structures Working Group

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Background

- **Increased price volatility is occurring regularly in the Real-Time Market (RTM). This volatility is indicated by unpredictable and significant positive and negative RTM price spikes.**

- **The ISO RTM scheduling objective is to meet RTD demand by minimizing bid production cost through the efficient use of available resources.**

- **The SMD software was designed to achieve this objective through the optimal commitment of available resources.**

- **In practice, the SMD software may result in the suboptimal commitment of available resources due to forecasting uncertainties between the commitment (RTC) and dispatch (RTD) scheduling horizons.**

Background

- **Forecasting uncertainty between the commitment (RTC) and dispatch (RTD) scheduling horizons is the primary cause of increased price volatility :**

  - ➤ *Load forecast uncertainty in the commitment horizon (30-60 minutes in advance of RTM pricing interval) is significant at ~1.0% and may result in the <u>suboptimal</u> commitment of resources to meet RTD demand.*

  - ➤ *Phase angle regulator schedule changes between the RTC and RTD runs can result in the <u>suboptimal</u> commitment of generating resources to efficiently address transmission constraints.*

  - ➤ *Many other potential system events may occur after the commitment horizon that can result in the <u>suboptimal</u> commitment of resources to meet RTD demand (eg. loss of generation or a forced transmission outage that does not result in a reliability violation).*

Proposed Corrective Measure

- **Based on these findings, it was determined that additional resources need to be made available for RTD to address the potential for, and the consequences of, <u>suboptimal</u> commitment decisions by RTC due to forecasting uncertainty.**

- **As a result, the ISO recommends the following:**

  - *Provide RTD with the additional resource availability of 10-minute GTs, thereby mitigating the impact of <u>suboptimal</u> commitment decisions that result in inefficient market outcomes.*

  - *RTD would be capable of scheduling of 10-minute GTs, only when economic and necessary to meet load, in both the RTM physical and pricing dispatches. ISO Operations, however, would make the final determination whether to actually commit the 10-minute GT(s) scheduled by RTD.*

Proposed Corrective Measure

- **Under Legacy Operation (pre-SMD), SCD had the availability of 10-minute GTs in both the RTM physical and pricing dispatches.**

- **Providing RTD with this same capability will require software modifications as well as a tariff change.**

- **The ISO believes the proposed measure should be implemented as soon as possible in order to correct the current inefficient Real-Time Market outcomes.**