Markets Gateway Roadmap

As of April 23, 2019
<table>
<thead>
<tr>
<th>Action Required</th>
<th>Deadline</th>
<th>Who May Be Affected</th>
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</thead>
<tbody>
<tr>
<td>SpinMax Validation – Call PJM Customer Service If you cannot update your energy parameters for the current hour because of this validation</td>
<td>4/24/19</td>
<td>Markets Gateway Users</td>
</tr>
<tr>
<td>Resource Limitation Reporting &amp; Tracking – new screen, new XML</td>
<td>Q3’19</td>
<td>Markets Gateway Users</td>
</tr>
</tbody>
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## 2019 Markets Gateway Roadmap

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<th>Jan</th>
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<td><strong>SpinMax Validation</strong></td>
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<td><strong>Production: 4/24</strong></td>
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The correction of this issue will be installed in the Production environment on 4/24/19

Current Issue
• Markets Gateway validation is preventing some resources from updating their energy parameters (economic min/max, emergency min/max) in real time due to comparisons to the spin max value, which is an hourly value locked 65 min before the operating hour

Resolution Overview
• No validation against Spin Max valid at time of submission (UI or XML)
• Requires no changes to use of Markets Gateway UI or XML

Contact Customer Service
• If unable to update energy parameters for the current hour because of this validation, reach out to customer service (custsvc@pjm.com or (866) 400-8980). An on-call person will follow-up with you to allow the update.
Current Issue

• Many generation units in PJM have limitations on how many hours they are able to run in a given time period. These limitations are often related to compliance with environmental permits, fuel availability, and demineralized water availability.

• These limitations are dynamic, and the hours a unit has left heavily depends upon how often a unit has been running, which schedule and fuel the unit is running on, and how often the unit is being cycled.

• The current methods PJM uses to track resource limitations produce information for a snapshot in time and, importantly, are not linked to actual unit run time.
Resolution Overview

• The proposed upgrades are intended to provide more dynamic notice to dispatch if a unit is running close to its limitations, and will include a calculation of estimated hours remaining using member-entered hours remaining due to a limitation and unit runtime.

• Related changes to Manual 13 are currently in the stakeholder process:
  – If a unit has less than 72 hours of run time at maximum capacity due to any resource limitation (primary or alternate fuel, emissions, demineralized or cooling water, other consumables), it along with any fuel limited units should be reported to PJM through the “Resource Limitations” page of Markets Gateway
  – The information on the “Resource Limitations” page is used for situational awareness and multi-day operations planning. The parameters entered on this page are not utilized in the Day-Ahead or Real-Time Market clearing engines
  – Any unit with less than 24 hours of run time remaining due to resource limitations should also update the Max Run fields in Markets Gateway
Changes Users Will See

• Operational Restrictions will be moved from Generator > Schedules > Restrictions Information to Generator > Resource Limitations. (Except “Operational Restriction Other” since this is used for Capacity Performance Exception)

• Resources will have the ability to enter unit level or fuel level limitation information

• Users will enter the following information:
  – Limitation Start Date
  – Limitation Start Time
  – Limitation End Date
  – Limitation End Time
  – Hours Remaining at Full Load
  – Replenished Hours at Limitation End Date
  – PJM Estimated Hours Remaining
Product Details
Markets Gateway allows users to submit information and obtain data needed to conduct business in the Day-Ahead, Regulation and Synchronized Reserve Markets.

Key Product Features
- View Market Results
- Manage Generation and Load Response Portfolios
- Manage Ancillary Service Data
- Manage Market Offers and Transactions