Manual Changes Clarifying Impacts of Operationalizing Gas Contingencies on Reserves

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Market Implementation Committee
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### Manual Changes Clarifying Impacts of Operationalizing Gas Contingencies on Reserves

<table>
<thead>
<tr>
<th>Action Required</th>
<th>Deadline</th>
<th>Who May Be Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notify staff about updates to M11 and M13 for clarifying of impacts of gas contingencies on reserves</td>
<td>5.15.2019</td>
<td>Market Buyers, Market Sellers</td>
</tr>
</tbody>
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Background

Manual Changes to Address Operationalizing Gas Contingencies

Process to account for gas contingency impact on electric system, in accordance with NERC EOP-011-1. Changes made to M3 and M13.

Recovery of “Gas Contingency Switching Costs” associated with PJM Operating Instruction

Manual changes to provide clarification to existing gas contingency process in order to ensure adequate reserves are maintained in accordance with NERC, SERC, and RFC BAL standards

Endorsed at Dec. 2017 MRC
Day-Ahead Scheduling Reserve (DASR) Requirement

<table>
<thead>
<tr>
<th>Current</th>
<th>Changes</th>
<th>Manual Sections Impacted</th>
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</thead>
<tbody>
<tr>
<td>For a gas contingency, carry additional reserves to mitigate deficit between 30 minute reserves and contingency generation loss as needed. (M13, Section 3.9)</td>
<td>Language to address a credible gas contingency(s) in the calculation for increasing the Day-Ahead Scheduling Reserve Requirement</td>
<td>- Manual 13, Section 2.2 Reserve Requirements</td>
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<tr>
<td></td>
<td></td>
<td>- Manual 11, Section 11.2.1 Day-Ahead Scheduling Reserve Market Reserve Requirement</td>
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In the event PJM forecasts a credible natural gas contingency(s):

DASR Requirement = Greater of [ DASR Requirement as calculated today, including any adjustments under Hot / Cold Weather Alerts OR ∑ (EcoMax of units part of largest credible gas contingency) ]
### Settlement of Increase in DASR Requirement

<table>
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<tr>
<th>Current</th>
<th>Clarification</th>
<th>Relevant Manual Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Requirement = the requirement defined in PJM Manual M-13, Section 2, plus any additional reserves scheduled to account for operational uncertainty</td>
<td>A gas contingency(s) is included in the universe of events settled when DASR Requirement is increased</td>
<td>Status quo settlement as defined in Manual 28, Section 19.3 Charges for Day Ahead Scheduling Reserve</td>
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Any increase in the DASR Requirement due to a credible natural gas contingency(s) will be settled as “Base Requirement”
Reserve Eligibility for Units Impacted by Credible Gas Contingency(s)

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| If a credible gas contingency is triggered, units impacted are still eligible to provide reserves | Language added to clarify the reserve market eligibility of resources impacted by a credible gas pipeline contingency(s) | • Manual 13, Section 3.9 Assessing Gas Infrastructure Contingency Impacts on the Electric System  
• Manual 11, Section 4.2.1 Synchronized Reserve Market Eligibility  
• Manual 11, Section 4b.2.1 Non-Synchronized Reserve Resource Eligibility  
• Manual 11, Section 11.2.2 Day-Ahead Scheduling Reserve Market Eligibility |

In the event PJM forecasts a credible gas pipeline contingency(s), resources that are part of the credible gas pipeline contingency(s):

• Are not eligible to be a Day-Ahead Scheduling Reserve Resource

• May be ineligible to provide Synchronized and Non-Synchronized Reserve, as determined by PJM Dispatch, depending on the severity of the contingency and other system conditions in order to ensure system reliability is maintained
Committee Approval Path

• First Reads
  – SOS: 4.4.2019
  – OC : 4.9.2019
  – MIC: 4.10.2019
  – MRC: 4.25.2019

• Second Reads / Endorsement
  – SOS: 5.2.2019
  – OC: 5.14.2019
  – MIC: 5.15.2019
  – MRC: 5.30.2019