LDA Evaluation – Cleveland Area

PJM Planning Committee
7/12/2012
• Existing ATSI LDA

• Cleveland Reactive Operational Interface

• Greater Cleveland LDA

• South Canton LDA
Deactivation Notifications & Associated Reinforcements

Legend:
- PES Retirements
- GenOn Retirements
- ATSI System Upgrades
- AEP System Upgrades
- Trans Lines >= 345 kV
- Subs >= 346 kV
- Trans Lines < 345 kV
- Subs < 345 kV
Deactivation Notification MW

<table>
<thead>
<tr>
<th>Location</th>
<th>MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashtabula 5</td>
<td>244</td>
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<tr>
<td>Avon Lake 7</td>
<td>95</td>
</tr>
<tr>
<td>Avon Lake 9</td>
<td>640</td>
</tr>
<tr>
<td>Bay Shore 2</td>
<td>138</td>
</tr>
<tr>
<td>Bay Shore 3</td>
<td>142</td>
</tr>
<tr>
<td>Bay Shore 4</td>
<td>215</td>
</tr>
<tr>
<td>Eastlake 1</td>
<td>132</td>
</tr>
<tr>
<td>Eastlake 2</td>
<td>132</td>
</tr>
<tr>
<td>Eastlake 3</td>
<td>132</td>
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<tr>
<td>Eastlake 4</td>
<td>240</td>
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<td>Eastlake 5</td>
<td>597</td>
</tr>
<tr>
<td>Lake Shore 18</td>
<td>245</td>
</tr>
<tr>
<td>New Castle 3</td>
<td>93</td>
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<tr>
<td>New Castle 4</td>
<td>93</td>
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<tr>
<td>New Castle 5</td>
<td>140</td>
</tr>
<tr>
<td>Niles 1</td>
<td>109</td>
</tr>
</tbody>
</table>
• B1913 – Convert Eastlake 1, 2, 3, 4 and 5 to synchronous condensers

• B1914 – Convert Lakeshore 18 to a synchronous condenser

• +1385 MVAR due to synchronous condenser conversions
Retirement Upgrades – Network Enhancements

• New 345 kV transmission

• New 138 kV transmission

• New 345/138 kV stations

• New 345/138 kV transformation at existing stations
• Previous 2011 RTEP Assumptions (4Q 2011)
  – CETO = 4,360MW
  – DR:  381 MW
  – EE:  3 MW

• ATSI Zone Retirements: 3387MW

• Current 2012 RTEP Assumptions
  – 2017 90/10 load forecast (2012 load report): 14,529 MW
  – CETO = 5,460MW
  – DR:  1764 MW
  – EE:  45 MW
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2017 ATSI Zone LDA Analysis

• Preliminary 2017 Load deliverability test for ATSI LDA

• CETL > 115% CETO
  – Assumes known generation retirements and related network upgrades

• Voltage dispatch – no unit outage (Perry is too big to lose)
• Previous analysis prior to deactivation notifications demonstrated that the existing ATSI LDA produced a more severe result than the other evaluated potential LDAs

• Several recent changes to generation resource and network topology assumptions

• Re-evaluate the additional Cleveland area LDAs with the 2012 RTEP assumptions