PPL Electric Utilities
Jenkins SPS Scheme

PJM Committee Review
March 2014
## Need for SPS Scheme

### NERC Category C contingencies (N-1-1)

<table>
<thead>
<tr>
<th>NERC Category C contingencies (N-1-1)</th>
<th>Potential Overloaded Facility*</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Outage of the Susquehanna-Lackawanna 500 kV line &amp; Susquehanna T10-Mountain 230kV line</td>
<td>Susquehanna-Jenkins 230kV line</td>
</tr>
<tr>
<td>• Outage of the Mountain-Stanton 230kV line &amp; Susquehanna T10-Mountain 230kV line</td>
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<tr>
<td>• Outage of the Mountain-Lackawanna 230kV line &amp; Mountain-Stanton 230kV line</td>
<td>*Overload concern when the Susquehanna-Stanton #2 is converted to 500 kV in Fall on 2014.</td>
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<tr>
<td>• Outage of the Mountain-Lackawanna 230kV line &amp; Susquehanna-Lackawanna 500 kV line</td>
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</tr>
</tbody>
</table>
Operation of the SPS at Jenkins

- SUSQ 500kV
- SUSQ T10
- MOUN 230kV (UGI)
- STAN 230kV
- LACK 500kV
- LACK 230kV

Existing Contingency 1: Overloaded CBs at Jenkins open under SPS scheme.

Contingency 2:
- SUSQ T10- MOUN
- MOUN -LACK
- MOUN -STAN
- JENK -STAN
- JENK 230kV
- SUSQ 230kV
- SUSQ -JENK
- SUSQ -LACK

Legend:
- Black: Existing
- Cyan: Contingency 1
- Orange: Contingency 2
- Red: Overloaded
- Green: CBs at Jenkins open under SPS scheme
SPS Scheme Operation

Condition A:
- Susquehanna-Jenkins 230kV line exceeds 100% of loadshed rating.

Action:
- After a delay of 1 minute, trip the Stanton #1 and #2 230 kV breakers at Jenkins.

Result:
- Load reduction on the Susquehanna-Jenkins 230kV circuit below 100% of normal rating.
SPS Scheme Operation

Condition B:
• Susquehanna-Jenkins 230kV line exceeds 100% of emergency rating

Action:
• After a delay of 5 minutes, trip the Stanton #1 and #2 230 kV breakers at Jenkins.

Result:
• Load reduction on the Susquehanna-Jenkins 230kV circuit below 100% of normal rating.
SPS Scheme Removal

Once the Susquehanna-Jenkins 230 kV line is rebuilt by **Summer 2018** (PJM RTEP b2269), this Jenkins SPS can be removed.