SPP-AECI Joint Projects
Missouri Public Service Commission
August 30th
Adam Bell abell@spp.org
SPP-AECI Joint and Coordinated System Plan

- Joint study between SPP and AECI is a requirement of the Joint Operating Agreement
  - Performed every other year (even years)
  - Evaluate the combined SPP-AECI System and identify if mutually beneficial projects exist

- 2016 version of the study concluded in January of 2017
  - [Link to 2016 SPP-AECI JCSP Final Report](#)

- Study evaluated five different target areas resulting in two projects being recommended by SPP and AECI
  - Brookline Reactor Project
  - Morgan Transformer Project
Morgan Transformer Project

- Addition of a new 400 MVA 345/161 kV Transformer at AECI’s Morgan substation and an uprate of the 161 kV line between Morgan and Brookline
  - Located in southwest Missouri
  - Wholly on AECI’s transmission system
  - Addresses Economic Congestion and Thermal Overloading in the area
  - Approved out of 2017 SPP ITP10
Brookline Reactor Project

• Addition of a 50 MVAR Reactor at City Utilities Brookline 345 kV substation
  • Located in southwest Missouri
  • Wholly on SPP’s transmission system
  • Addresses real-time high voltage issues in the area
  • Approved out of SPP Regional Review Process
Cost Sharing between SPP and AECI

- **Morgan Transformer Project**
  - $13.75 Million Cost Estimate
    - SPP Cost Responsibility - $12.25 Million (89.1%)
    - AECI Cost Responsibility - $1.5 Million (10.9%)
  - SPP B/C Ratio of 2.88 over 40 years (2017 ITP10 F3)

- **Brookline Reactor Project**
  - $5.0 Million Cost Estimate
    - SPP Cost Responsibility - $4.85 Million (97%)
    - AECI Cost Responsibility - $150 Thousand (3%)
  - B/C not calculated for reliability driven projects
FERC Filings

• SPP made filings at FERC for the two projects on August 7, 2017
  • Approval of SPP-AECI Joint Projects
  • Cost Sharing between SPP and AECI
  • SPP Regional Cost Allocation
  • Other Issues Related to the Treatment of the Projects

• Docket Numbers
  • Filing in ER17-2256
  • Filing in ER17-2257
  • Motion to Consolidate
SPP-MISO
Coordinated System Plan (CSP)
Missouri Public Service Commission
August 30th
Adam Bell abell@spp.org
SPP-MISO Coordinated System Plan (CSP)

- Joint study performed between SPP and MISO
- Process outlined in Article 9 of the SPP-MISO JOA
- Defined FERC Order 1000 Process
- Annual process to determine if a study is needed
- Two portion study
  - Interregional Coordinated System Plan
  - Regional Review

MISO Market Area
2016 SPP-MISO CSP (Targeted Study)

- Built joint models that reflect a regional approach to carbon-constrained future
  - Merged SPP and MISO regional models
- Developed needs list by leveraging needs identified in SPP and MISO regional processes across the entire SPP-MISO seam
- Study resulted in one interregional project being recommended to continue to the regional review process
  - Loop One Split Rock to Lawrence 115 kV Circuit into Sioux Falls located in South Dakota
CSP Project Regional Review

• MISO is not recommending the I-18 interregional project for further consideration
  • Two alternative projects provide MISO more or equal benefits at a much lower cost
  • Op-guide currently in place that operates the congested line in the open state
  • Potential for additional unreserved use charges by SPP

• SPP Staff has recommended the approval of the interregional project
  • SPP stakeholders are still in the progress of making recommendations
    • SPP MOPC and Board of Directors in October 2017
  • Robust solution benefits SPP region across all sensitivities
  • Other alternatives considered potentially create additional congestion
### 2016 CSP Needs

<table>
<thead>
<tr>
<th>NEED ID</th>
<th>CONSTRAINT</th>
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<tbody>
<tr>
<td>1</td>
<td>Rugby WAUE-Rugby OTP Tie</td>
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<tr>
<td>2</td>
<td>Hankinson - Wahpeton 230kV FLO Jamestown - Buffalo 345kV</td>
</tr>
<tr>
<td>3</td>
<td>Sub3 - Granite Falls 115kV Ckt1 FLO Lyon Co. 345kV Ckt1</td>
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<tr>
<td>4</td>
<td>Sioux Falls - Lawrence 115kV FLO Sioux Falls - Split Rock 230kV</td>
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<td>5</td>
<td>Northeast - Charlotte 161kV FLO Northeast - Grand Ave West 161kV</td>
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<tr>
<td>6</td>
<td>Neosho - Riverton 161kV FLO Neosho - Blackberry 345kV</td>
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<tr>
<td>7</td>
<td>Brookline 345/161kV Ckt 1 Transformer FLO Brookline 345/161kV Ckt 2 Transformer</td>
</tr>
</tbody>
</table>

**Needs along SPP-MISO Seam in Missouri**
2016 CSP Results

<table>
<thead>
<tr>
<th>Need Addressed</th>
<th>Project Description</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>Rebuild Hankinson - Wahpeton 230kV line</td>
</tr>
<tr>
<td>3</td>
<td>2nd Lyon County Transformer</td>
</tr>
<tr>
<td>4</td>
<td>Loop One Split Rock - Lawrence 115kV Ckt into Sioux Falls</td>
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<tr>
<td>5</td>
<td>Northeast - Charlotte 2 ohm series reactor</td>
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<tr>
<td>5</td>
<td>Crosstown - Blue Valley 161 kV line</td>
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<tr>
<td>6</td>
<td>Lacygne - Blackberry 345 kV line plus 345/161 kV transformer and Blackberry - Asbury 161 kV line</td>
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<tr>
<td>7</td>
<td>James River - Brookine 345 kV line plus 345/161 kV transformer</td>
</tr>
<tr>
<td>7</td>
<td>Morgan 345/161 kV Transformer plus Morgan - Brookline 161 kV uprate</td>
</tr>
</tbody>
</table>

• SPP and MISO determined the best project for all the study needs

• For needs 5, 6, and 7 SPP staff preferred regional solutions identified in SPP’s regional planning processes over the potential interregional solutions
Future SPP-MISO Joint Planning

• SPP and MISO will continue to work on improving the Coordinate System Plan process

• Next SPP-MISO Interregional Planning Stakeholder Advisory Committee (IPSAC) Meeting will be held in Late 2017 or Early 2018
  • Annual Issues Review
  • Discuss Future SPP-MISO Joint Planning
  • Potential 2017-2019 SPP-MISO CSP