Southwest Power Pool – Essential to Delivering Reliable and Affordable Energy Now and in the Future

August 10, 2016
Highlights

• Safety Message
• The Big Picture
• Southwest Power Pool’s Role
• The Challenge – Managing the Variables
• Reframing the Vision of Transmission
• Value of Transmission
• Who Pays for Transmission Projects?
Safety Message

KCP&L Safety Culture

• Every Company meeting begins with a safety message
• The messages promote safety awareness in the workplace and home
• Customer safety education initiatives

A couple of entries from 2016 KCP&L Safety Calendar Contest
The Big Picture: The Regulators

A wide variety of regulations impact Availability, Mitigating Disruption, Cost and Price of Electric Service.
SPP’s Increasingly Essential Role

1968  Became NERC Regional Council
1980  Implemented telecommunications network
1991  Implemented operating reserve sharing
1994  Incorporated as nonprofit
1997  Implemented reliability coordination
1998  Implemented tariff administration
2004  Became FERC-approved Regional Transmission Organization
2007  Launched EIS market; became NERC Regional Entity
2009  Nebraska utilities joined SPP
2010  FERC approved Highway/Byway cost allocation methodology and Integrated Transmission Planning Process
2014  Launched Integrated Marketplace
2015  Integrated System joins SPP

Source: SPP Presentation, Intro to SPP, 07-26-2016
**Southwest Power Pool’s Role**

**SPP’s Mission:** Helping our members work together to keep the lights on, today and in the future.

<table>
<thead>
<tr>
<th>SPP Regional Transmission Operator (RTO)</th>
<th>SPP Regional Entity (RE)</th>
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<tbody>
<tr>
<td>Real-time Electric Power Grid Operation</td>
<td>NERC Delegated, FERC Approved Authority</td>
</tr>
<tr>
<td>Reliability Coordinator</td>
<td>Compliance Monitoring and Enforcement</td>
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<tr>
<td>Tariff Administration</td>
<td>NERC Registration and Certification</td>
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<tr>
<td>Regional Scheduling</td>
<td>Event Analysis / Reliability Assessments</td>
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<tr>
<td>Transmission Expansion Planning</td>
<td>Education and Outreach</td>
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<tr>
<td>Market Operations</td>
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<td>Training</td>
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The Challenge – Managing the Variables

- Generation Efficiency
- Transmission Constraints
- Renewables Mix
- Daily Demand Cycle
- Planned Maintenance
- Unplanned Outages
- Weather
- Transmission Availability
SPP Is Member-Driven

Collaborate and Support

Advise – Informed Decisions

Approximately 70 Working Groups and Committees

Approximately 30 KCP&L Employees Participate and/or Monitor Working Groups and Committees
**Reframing the Vision of Transmission**

**In the past**

Individual utilities planned and built transmission to meet their “local” reliability and generation needs

- Resulted in infrastructure additions to meet minimum reliability standards
- Did not facilitate the efficient utilization of existing generation region-wide
- Did not consider opportunities for the addition of competitive new generation

**Today**

Utilities collaborate, through participation in RTOs, to proactively plan and build transmission “highways” that benefit region as well as local service

- Facilitates new generation additions, including renewables
- Improves electric reliability, operational efficiencies, and access to lower-cost and diverse generation resources
- Enables more competitive wholesale energy markets
Value of Transmission: Benefits

- **Benefit Cost Ratio of 3.5**: From 2012 to 2014, SPP installed almost $3.4B of transmission expansion projects, benefits of the projects expect to exceed $16.6B. Benefits include:
  - **More Efficient Utilization of Generation**:
    - Reduces Transmission Congestion
    - Improves Access to Markets
    - Increases Competition
    - Increases System Efficiency
    - Defers Generation Capacity Investment
    - Access to Lower Cost Generation

Source: SPP’s The Value Of Transmission Report, 01-26-2016
Value of Transmission: Other Benefits

• **Enables Access To Renewables**: SPP’s wind generation mix in 2007 was less than 1%, in 2015 wind represents 15%, and continues to grow.

• **Advances Public Policy**:  
  – Improves reliability;  
  – Serves new population centers; and  
  – Manages diverse fuel types to meet environmental goals.

• **Stable and Reliable System**: Transmission investment expands operational flexibility in a variety of conditions.

Source: SPP’s The Value Of Transmission Report, 01-26-2016
Who Pays For Transmission Projects?

- **Sponsored**: Project owner builds and receives credit for use of transmission lines
- **Directly-assigned**: Project owner builds and is responsible for cost recovery and receives credit for use of transmission lines
- **Highway/Byway**: Most SPP projects paid for under this methodology

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<th>Voltage</th>
<th>Region Pays</th>
<th>Local Zone Pays</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 kV and above</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Above 100 kV and below 300 kV</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>100 kV and below</td>
<td>0%</td>
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</tr>
</tbody>
</table>

Source: SPP Presentation, Intro to SPP, 07-26-2016
Did We Get What We Paid For?

SPP Regional Cost Allocation Review

• Regular Review of Transmission Project Cost Allocation: This triennial analysis is to measure by zone the cost allocation impacts of SPP’s Highway/Byway methodology.

• Aligns Charges with Long Term Benefits: A tool to confirm allocation of SPP participants’ costs align with SPP’s Highway/Byway methodology.

• Benefit Cost Ratio: Provides analysis of participants’ benefit cost ratio based on a participants’ operations and investment.
  – KCP&L Zone’s Benefit Cost Ratio: 2.97
  – GMO Zone’s Benefit Cost Ratio: 2.15

In Summary

- Many regulations play a part in promoting availability, mitigating disruption, cost and price of electricity.
- SPP provides efficiency in managing the variables and optimizing the energy markets.
- Transmission is valuable:
  - Enables access to renewable generation resources
  - Advances public policy
  - Assures a stable and reliable energy delivery system