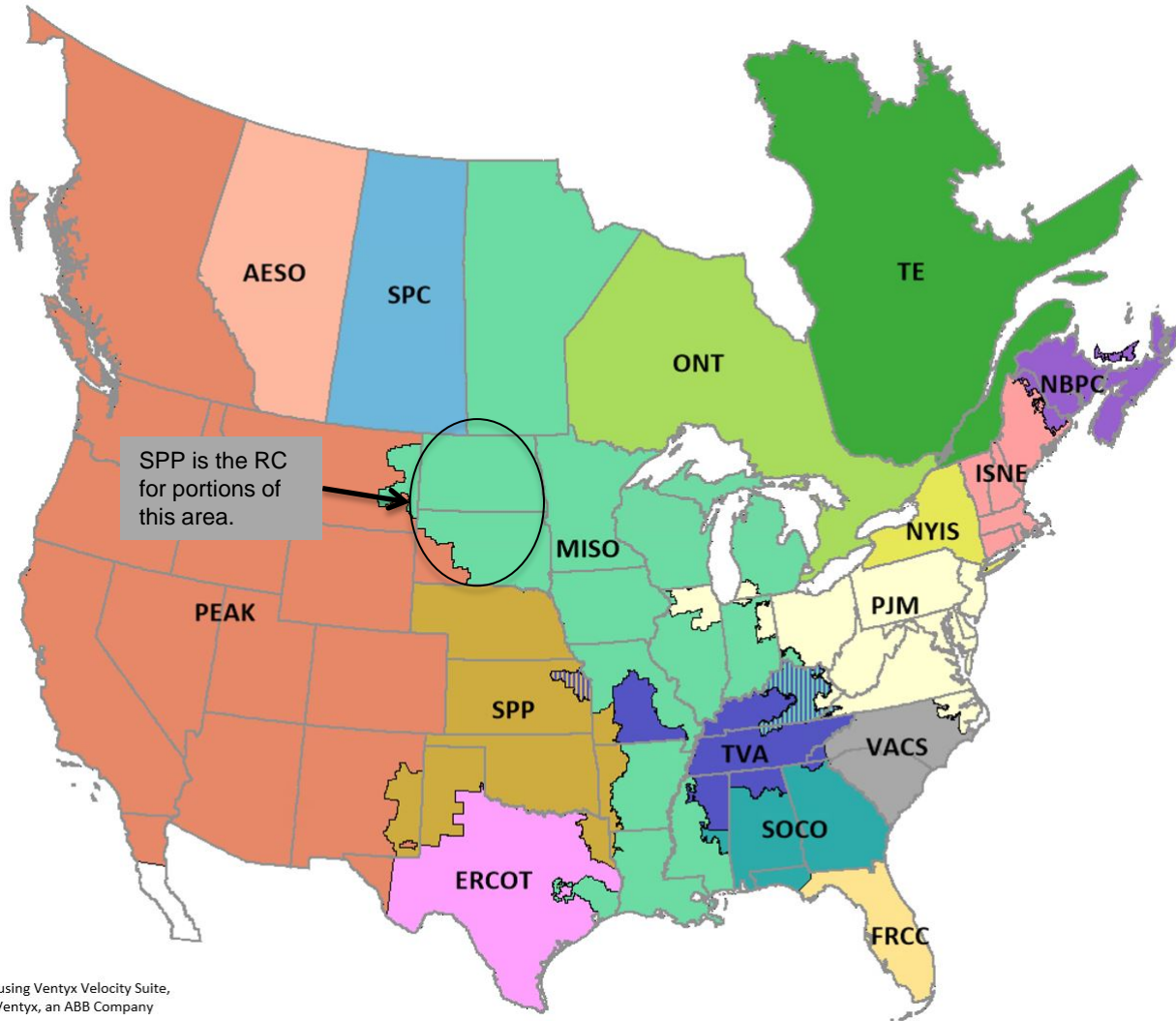


# **Beyond Order 1000: Seams Operations and Congestion Management**

**Jennifer Curran, Vice-President System Planning &  
Seams Coordination**

June 2, 2016

# MISO's large footprint creates seams with a variety of entities from other RTOs to individual municipalities/co-ops

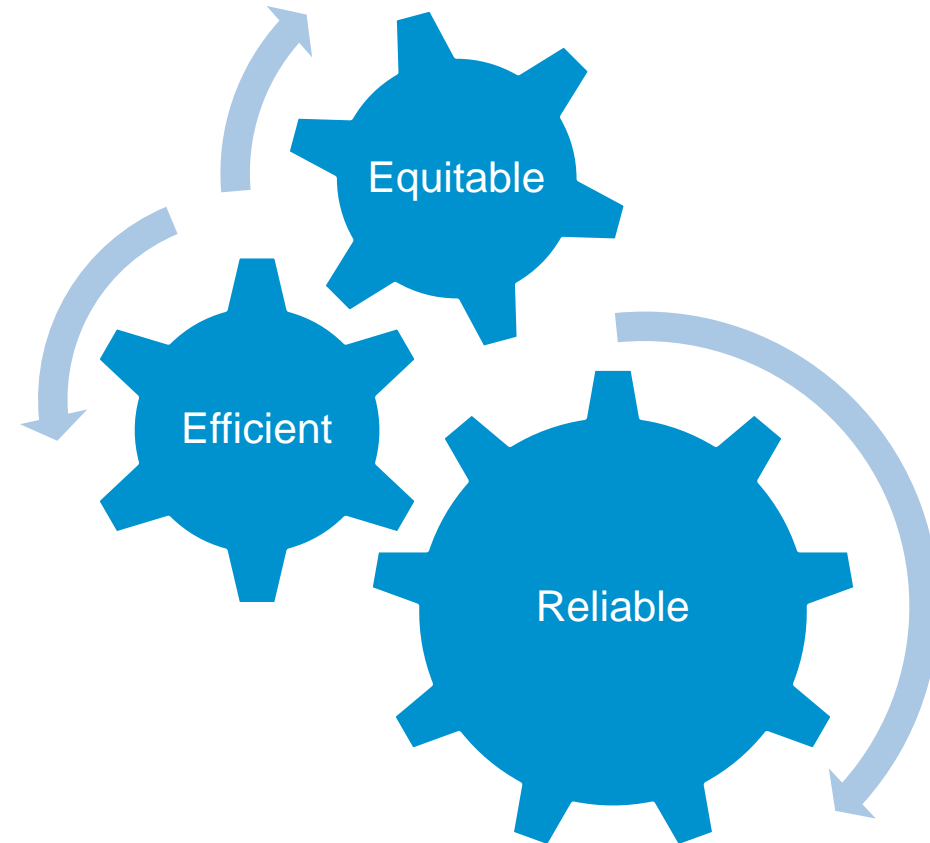


## NERC Reliability Coordinators As of May 31, 2015

- Alberta Electric System Operator
- Electric Reliability Council of Texas
- Florida Reliability Coordinating Council
- Hydro Quebec TransEnergie
- ISO New England, Inc.
- Midcontinent ISO
- New Brunswick Power Corporation
- New York Independent System Operator
- Ontario Independent Electricity System Operator
- Peak Reliability
- PJM Interconnection
- Saskatchewan Power Corporation
- Southern Company Services, Inc.
- Southwest Power Pool
- BAs receive RC services from SPP or TVA
- Tennessee Valley Authority
- BAs receive RC services from TVA or MISO
- VACAR South

# Seams processes are key to providing reliable, least cost energy to customers and will become even more important going forward...

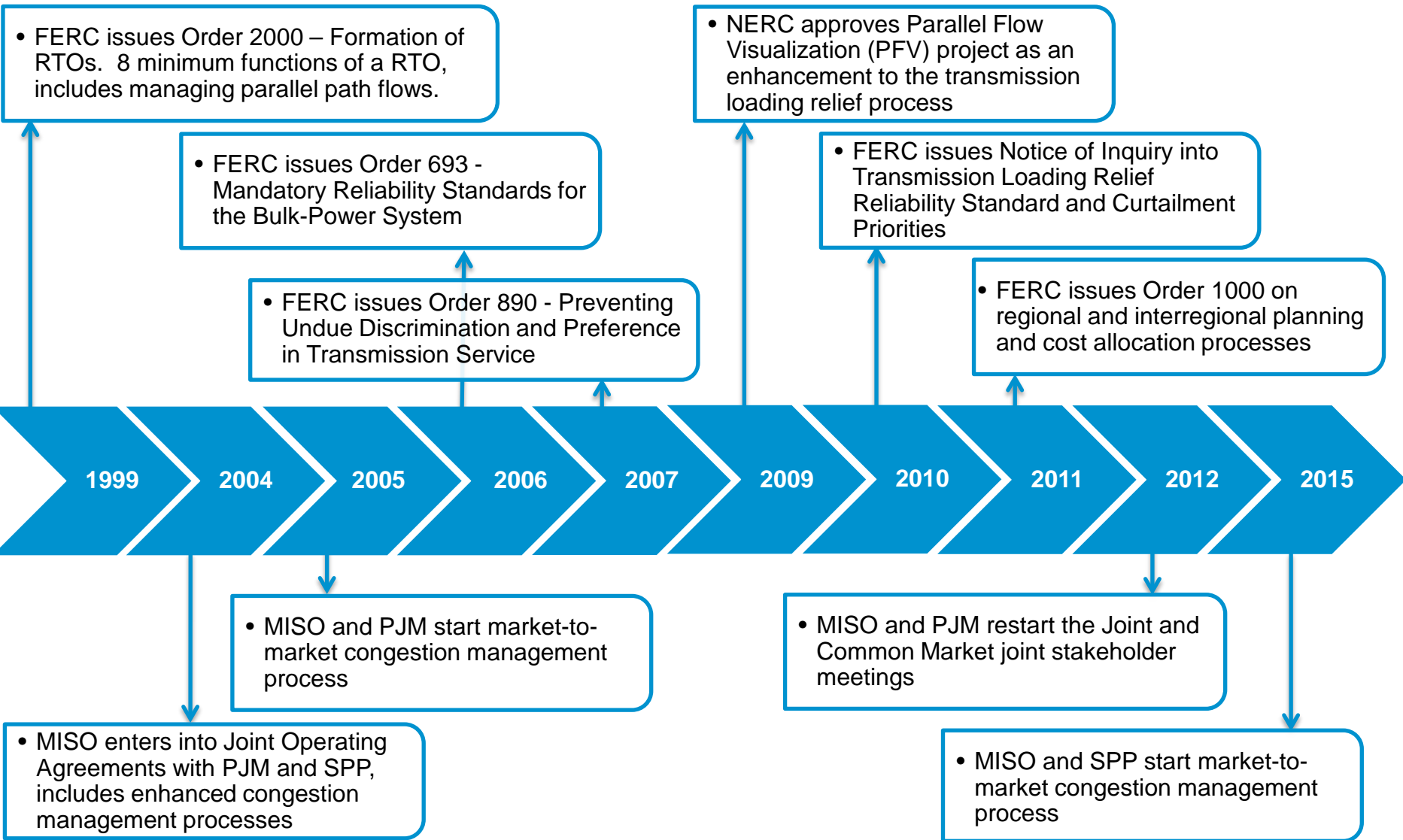
## Key Attributes of Seams Processes



## Importance of Seams Processes Going Forward

1. Managing the evolving resource portfolio and tightening reserve margins
2. Realizing the benefits of the Order 1000 transmission planning process
3. Ensuring we have an equitable process for managing parallel flows across the Eastern Interconnect

# Industry and MISO policies have evolved over time to leverage the efficiencies gained through broader regional operations



# MISO's current seams procedures vary by neighbor...

	PJM	SPP	TVA	MH	SOCO	AECI	IESO	MPC	SASK
Reliability/Balancing Authority Coordination	✓	✓	✓	✓	✓	✓	✓	✓	✓
Congestion Management Process	✓	✓	✓ <sup>1</sup>	✓		✓ <sup>1</sup>		✓	
Order 1000 Interregional Coordination and Cost Allocation	✓	✓	✓ <sup>2</sup>		✓ <sup>2</sup>	✓ <sup>2</sup>			
Market-to-Market	✓	✓							
Contract Path Capacity Sharing	✓	✓ <sup>3</sup>							
Zero through-and-out transmission rate	✓								

1 – AECI and TVA applicable to MISO as reciprocal entity through the MISO-PJM JOA.  
 2 - As part of the Southeastern Regional Transmission Planning (SERTP) Order 1000 regional transmission planning group.  
 3 – Parties will negotiate compensation if a Party exceeds or anticipates that it will exceed its own contract path during normal operations due to a change in RTO membership  
 \* Appendix includes list of agreements and link to where they are available on the MISO website.



**...Enhancing seams processes requires working with a diverse set of entities with differing perspectives on the goal**



# Parallel Flow Visualization (PFV) is the next step in enhancing the TLR process

- Significantly improves the visualization operators have as to the source of parallel flows in the Eastern Interconnection
- All entities will now provide every 15 minutes their real-time flows
- Will require all entities to report flows in firm and non-firm buckets

# Industry's goal should be to strive for a “seamless seam” as much as possible

- Develop more standardized seams processes, including increased reconciliation of network vs. point to point approaches
- Implement PFV
- Upgrade tools to further enhance the transparency of the overall network and improve reliability
- Ensure equitable treatment of network and point-to-point transmission service



# Thank you.

- Jennifer Curran ([jcurran@misoenergy.org](mailto:jcurran@misoenergy.org))

# Appendix

# List of MISO's Agreements

<https://www.misoenergy.org/Library/Tariff/Pages/RateSchedules.aspx>

Types	Agreement Name
Joint Operating Agreement (JOA) or Seams Operating Agreement (SOA) or Coordination and Operating Agreement (COA)	<ul style="list-style-type: none"> <li>➤ MISO – PJM JOA (Rate Schedule 5)</li> <li>➤ MISO – SPP JOA (Rate Schedule 6)</li> <li>➤ MISO – MH SOA (Rate Schedule 8)</li> <li>➤ MISO – MPC COA (Rate Schedule 46)</li> </ul>
Coordination Agreement (CA)	<ul style="list-style-type: none"> <li>➤ MISO – MH CA (Rate Schedule 2)</li> <li>➤ MISO – IESO CA (Rate Schedule 22)</li> <li>➤ MISO – ITC – CIPCO CA (Rate Schedule 32)</li> </ul>
Adjacent Balancing Authority Coordination Agreement (BA to BA)	<ul style="list-style-type: none"> <li>➤ MISO – MH BA to BA (Rate Schedule 15)</li> <li>➤ MISO – AECI BA to BA (Rate Schedule 17)</li> <li>➤ MISO – OVEC BA to BA (Rate Schedule 18)</li> <li>➤ MISO – KCPL BA to BA (Rate Schedule 19)</li> <li>➤ MISO – OPPD BA to BA (Rate Schedule 24)</li> <li>➤ MISO – WAPA BA to BA (Rate Schedule 29)</li> <li>➤ MISO – AEP BA to BA (Rate Schedule 42)</li> </ul>
Reliability Coordinator Coordination Agreement (RC to RC)	<ul style="list-style-type: none"> <li>➤ MISO – TVA RC to RC</li> <li>➤ MISO – Sask RC to RC</li> <li>➤ MISO – WECC RC to RC</li> <li>➤ MISO – SOCO RC to RC</li> </ul>