

# CURRENT ISSUES

# AGENDA

- Interregional Planning Update
- HITT
- Review of the regional transfer and impacts of January 17, 2018

# INTERREGIONAL PLANNING UPDATE

# OVERVIEW

- SPP-AECI Joint and Coordinated System Planning
  - 2018 SPP-AECI JCSP
  - SPP-AECI Joint Projects Update
- SPP-MISO Joint Planning
  - SPP-MISO Coordinated System Plan (CSP)  
Process Improvements

**SPP-AECI JCSP**

# NORTH AMERICAN INDEPENDENT SYSTEM OPERATORS (ISO) AND REGIONAL TRANSMISSION ORGANIZATIONS (RTO)



# SPP-AECI JOINT & COORDINATED SYSTEM PLAN (JCSP)

- SPP and AECI initiated a new joint study in 2018
- 2018 SPP-AECI JCSP Scope was endorsed by the SPP-AECI IPSAC on April 4<sup>th</sup>
  - Study was to use the SPP 2018 ITPNT models and needs assessment
    - Scenario 0 – 2019 Summer/Winter & 2022 Summer/Winter/Light Load
    - Scenario 5 – 2022 Light Load
  - SPP and AECI needs along the seam were to be evaluated for beneficial joint solutions

# 2018 SPP-AECI JCSP CONT.

- Due to various reasons no joint needs were identified in the study
  - Model Corrections
  - Operational Guides
  - Invalid Contingencies
- SPP and AECI held an IPSAC Meeting in June to discuss the study results with stakeholders
- A final report will be circulated with stakeholders once completed
- SPP will now focus on improvements to the process before the next SPP-AECI study which is scheduled for 2020

# SPP-AECI JOINT PROJECTS UPDATE

- Joint projects approved out of the 2016 SPP-AECI JCSP
  - Morgan Transformer Project
    - SPP Staff is working with FERC staff and targeting a new filing in July 2018
    - Filing will pursue regional funding
  - Brookline Reactor Project
    - Currently being studied in the SPP 2018 ITPNT
    - Potential approval of the project out of the ITPNT in July 2018

# 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**
  - \$13.75M Cost Estimate
    - SPP Responsible for \$12.25M (89%)



# SPP-MISO JOINT PLANNING

# SPP-MISO CSP IMPROVEMENTS – FEEDBACK REQUEST

- SPP and MISO held an Interregional Planning Stakeholder Advisory Committee (IPSAC) meeting on Feb. 27<sup>th</sup>
- Based on feedback from the IPSAC, SPP and MISO staff have opted not to perform a Coordinated System Plan (CSP) in 2018
- Staff will focus on developing a new CSP process to implement process improvements identified through the lessons learned of the previous joint studies

# SPP-MISO STAKEHOLDER FEEDBACK REQUEST

- SPP and MISO requested feedback from stakeholders on CSP enhancements on March 5, 2018
  - Requested by March 30, 2018
- SPP-MISO Coordinated System Plan Process Improvements
  - Which of the process improvements do you support?
  - Are there additional process improvements you would like to see that weren't discussed?
  - Ideas on a study structure that will support all of the enhancements ?
  - Other thoughts or questions?

# RESULTING CSP CHANGES

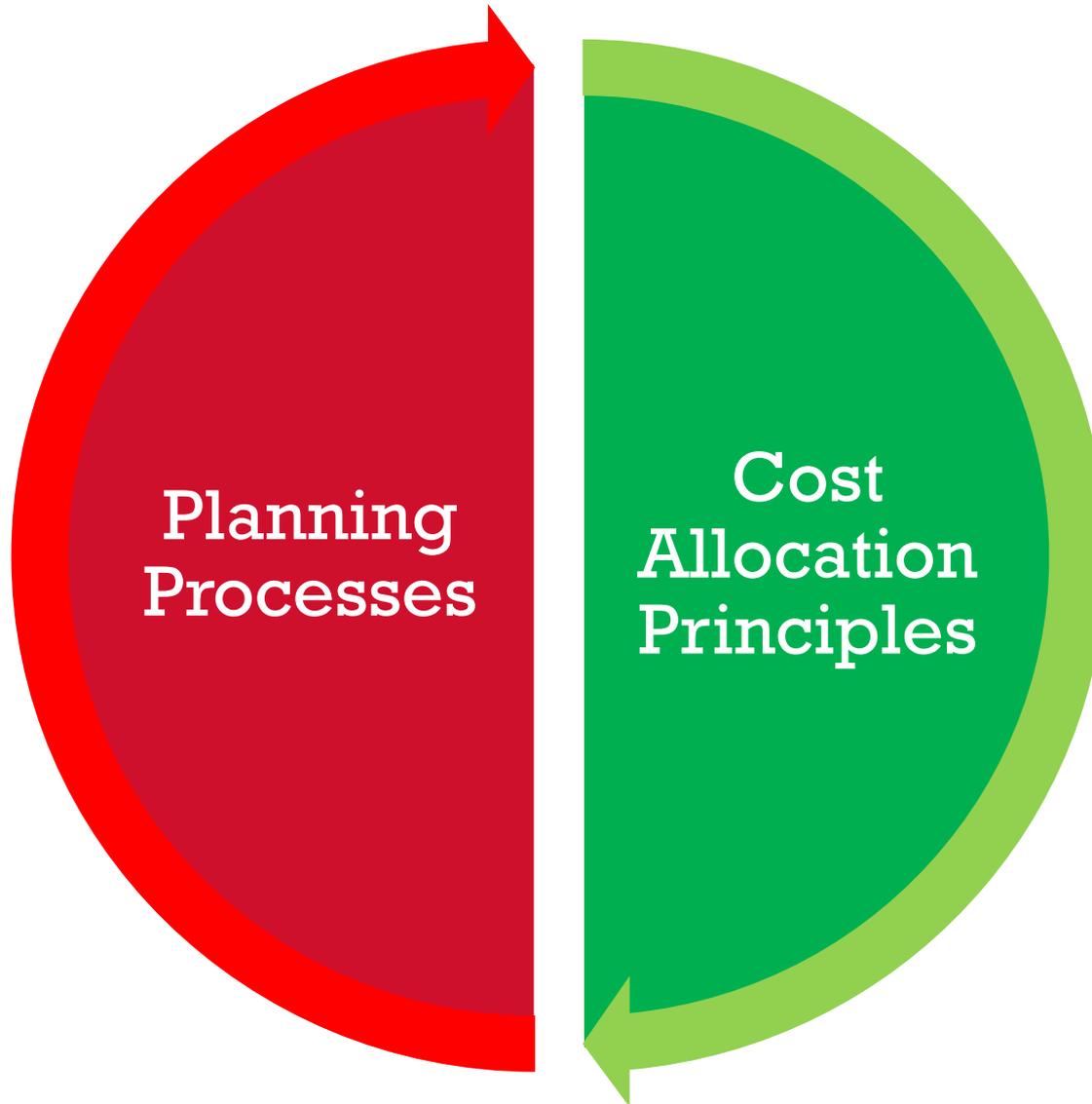
- **Removal of Joint Model Requirement**
  - Utilize SPP and MISO Regional Planning Processes
- **Expand Interregional Benefit Metrics**
  - Include APC and Avoided Cost for all project drivers
  - Explore Potential Market to Market Metric
- **Amend JOA stated Interregional Project Criteria**
  - Remove \$5M Cost Threshold
- **Other items being considered**
  - Review of Approval Process and Flexibility
  - Increase coordination between Operations and Joint Studies
  - MISO Voltage Threshold for Interregional Projects with SPP (MISO Regional Issue)
  - Reducing the length of the study
  - Market-to-Market Impacts

# **HOLISTIC INTEGRATED TARIFF TEAM (HITT)**

# SPPT FORMATION

- In January 2009, the SPP Board of Directors established the Synergistic Planning Project Team (SPPT) to recommend improvements to SPP's regional transmission planning process and cost allocation methodology
- Based on its findings, the SPPT issued a report in April 2009 and recommendations for reforming SPP's transmission planning and cost allocation processes.
  - *The SPPT Report was endorsed by the RSC in April 2009.*
  - *The SPPT Report was adopted by the Board of Directors in April 2009.*

# SPPT SCOPE



# OVERVIEW – SPPT HISTORY

The SPPT produced a report that recommended among other things:

- Adoption and implementation of five new transmission planning principles;
- Adoption and implementation of a new planning process to create a robust, flexible, and cost-effective transmission network for the SPP region and;
- SPP RSC development and approval of a simplified “Highway/Byway” cost allocation methodology for new transmission upgrades in the SPP region.

# HITT MEMBERSHIP

- **SPP Board - 2 Representatives**  
Jim Eckelberger (Director)  
Graham Edwards (Director)
- **RSC - 2 Representatives/ 1 Liaison**  
Shari Feist Albrecht (Commissioner Kansas Corporation Commission and RSC)  
Dennis Grennan (Commissioner Nebraska Power Review Board and RSC)  
Cindy Ireland (CAWG Liaison to the HITT, Arkansas Public Service Commission)
- **Investor Owned Utilities – 4 Representatives**  
Richard Ross (AEP)  
Denise Buffington (KCPL)  
Greg McCauley (OG&E)  
Bill Grant (SPS)
- **Cooperatives - 3 Representatives**  
Mike Wise (Golden Spread)  
Mike Risan (Basin)  
Al Tamimi (Sunflower)
- **Independent Power Producers - 2 Representatives**  
Rob Janssen (Dogwood Energy) – *Vice-Chair*  
Holly Carias (NexEra)
- **Municipals - 1 Representative**  
Dennis Florom (LES)
- **State Agencies - 1 Representative**  
Tom Kent (Nebraska Public Power District) - *Chair*
- **Independent Transmission Companies - 1 Representative**  
Brett Leopold (ITC Great Plains)
- **Senior SPP Staff (to Serve as Staff Secretary) - 1 Representative**  
Paul Suskie (SPP Staff)

# HITT SCOPE



# OVERVIEW OF HITT TASKS (5 AREAS)

- SPP's transmission planning and study processes;
- Transmission cost allocation issues;
- Integrated Marketplace impacts related to, among others, a changing resource mix, potential changes in production tax credits, approach of using market-based compensation for varying attributes of different types of generators, etc.;
- Disconnects or potential synergies between transmission planning and real-time reliability and economic operations; and
- The Team is to issue a report to the SPP Board of Directors and Members Committee containing a set of high-level recommendations that address these areas for the region by April 2019.

# **DATES FOR FACE TO FACE MEETINGS**

<b>Dates</b>	<b>Times</b>	<b>Location</b>
<b>Tues/Wed, 24-25 April</b>	Following BOD/MC-3pm	Kansas City
<b>Wednesday, 16 May</b>	9am-3pm	Dallas
<b>Friday, 8 June</b>	9am-3pm	Dallas
<b>Monday, 9 July</b>	9am-3pm	Dallas
<b>Tues/Wed, 31 July – 1 Aug</b>	Following BOD/MC-3pm	Omaha
<b>Tues/Wed, 21-22 Aug</b>	9am-3pm (Both Days)	Dallas
<b>Wednesday, 22 August</b>	9am-3pm	Dallas
<b>Wednesday, 5 September</b>	9am-3pm	Dallas
<b>Tuesday, 6 November</b>	9am-3pm	Dallas
<b>Wednesday, 5 December</b>	9am-3pm	Little Rock or Dallas



# SPP AND JOINT PARTY REVIEW OF THE REGIONAL TRANSFER AND IMPACTS OF JANUARY 17, 2018

# INTRODUCTION

- The Joint Parties (AECI, LGE/KU, PowerSouth, Southern, TVA), SPP and MISO were able to manage operations in the mid and south central U.S. during the very challenging week of January 15
- High loads caused by extreme cold temperatures, coupled with heavy flows from MISO Midwest to MISO South, created significant challenges throughout the event
- The Joint Parties, SPP and MISO have been reviewing the event and associated operational impacts
- The Joint Parties, SPP and MISO are striving to reach a common expectation of reliable operations on the SPP and Joint Parties' systems, consistent with the Regional Directional Transfer Limits established in their 2015 Settlement Agreement and accepted system operating practices



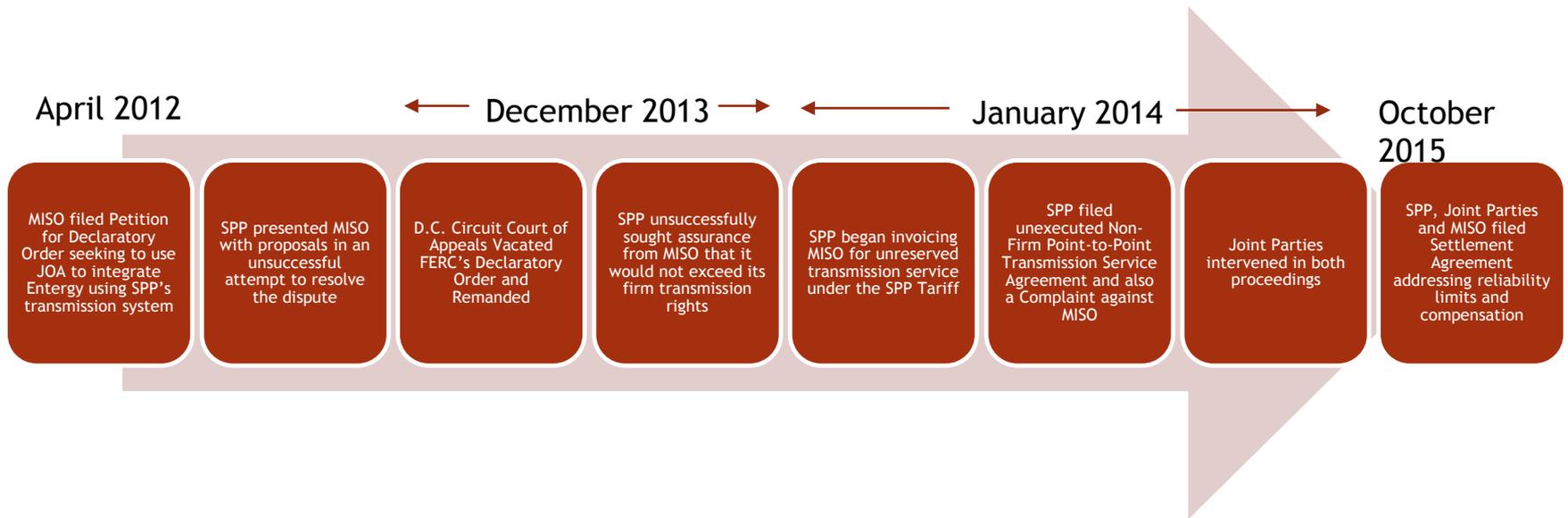
# BACKGROUND

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- In December 2013, Entergy and other companies in the Southern US joined MISO
- Reliability concerns raised by SPP and the Joint Parties related to the integration of these companies into the MISO BA resulted in a Settlement Agreement approved by FERC in Docket Nos. EL14-21-000 et. al., effective February 2016

# HISTORICAL TIMELINE



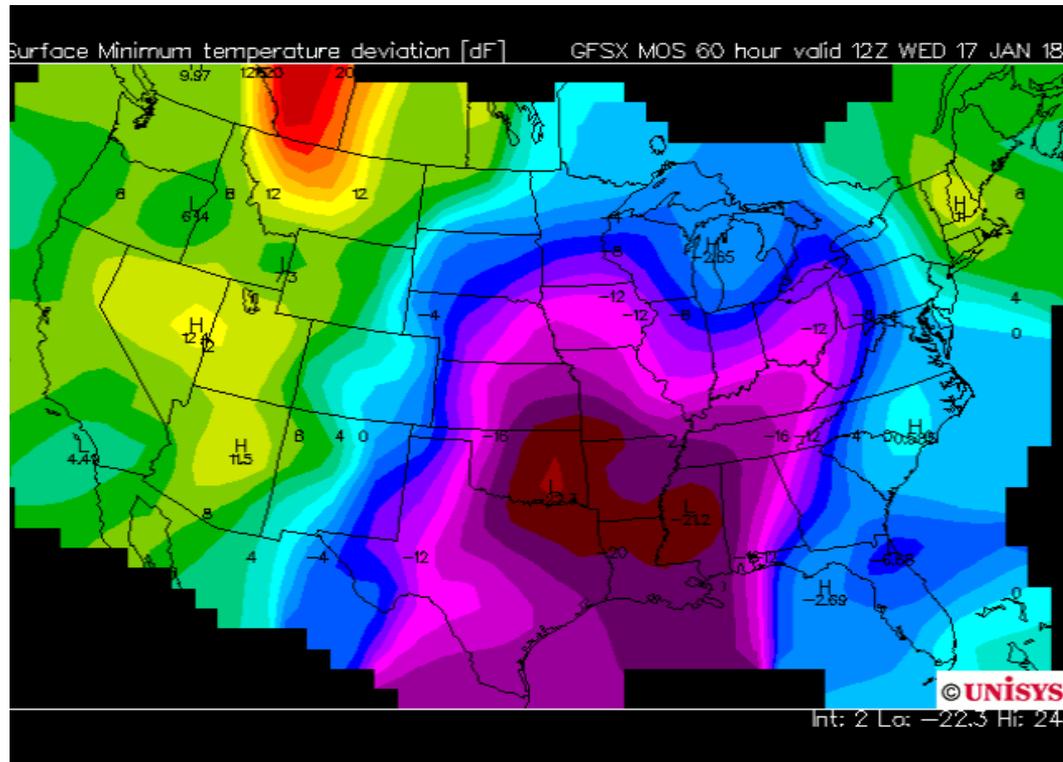
# SETTLEMENT AGREEMENT

- Allows MISO some use of the SPP and Joint Parties' systems (above MISO's firm capability) on a non-firm, as-available basis
  - MISO currently has 1,000 MW of firm transmission transfer capability between its Midwest and South regions
  - MISO, SPP and the Joint Parties agreed to the following total Regional Directional Transfer Limits:
    - Midwest to South Limit: 3,000 MW (2,000 MW being non-firm, as available)
    - South to Midwest Limit: 2,500 MW (1,500 MW being non-firm, as available)
- Definitions in NERC glossary of terms
  - Non-firm transmission service is defined as transmission service that is reserved on an as-available basis and is subject to curtailment or interruption
  - Firm transmission service is defined as the highest quality (priority) service offered to customers under a filed rate schedule that anticipates no planned interruption



JANUARY 17, 2018

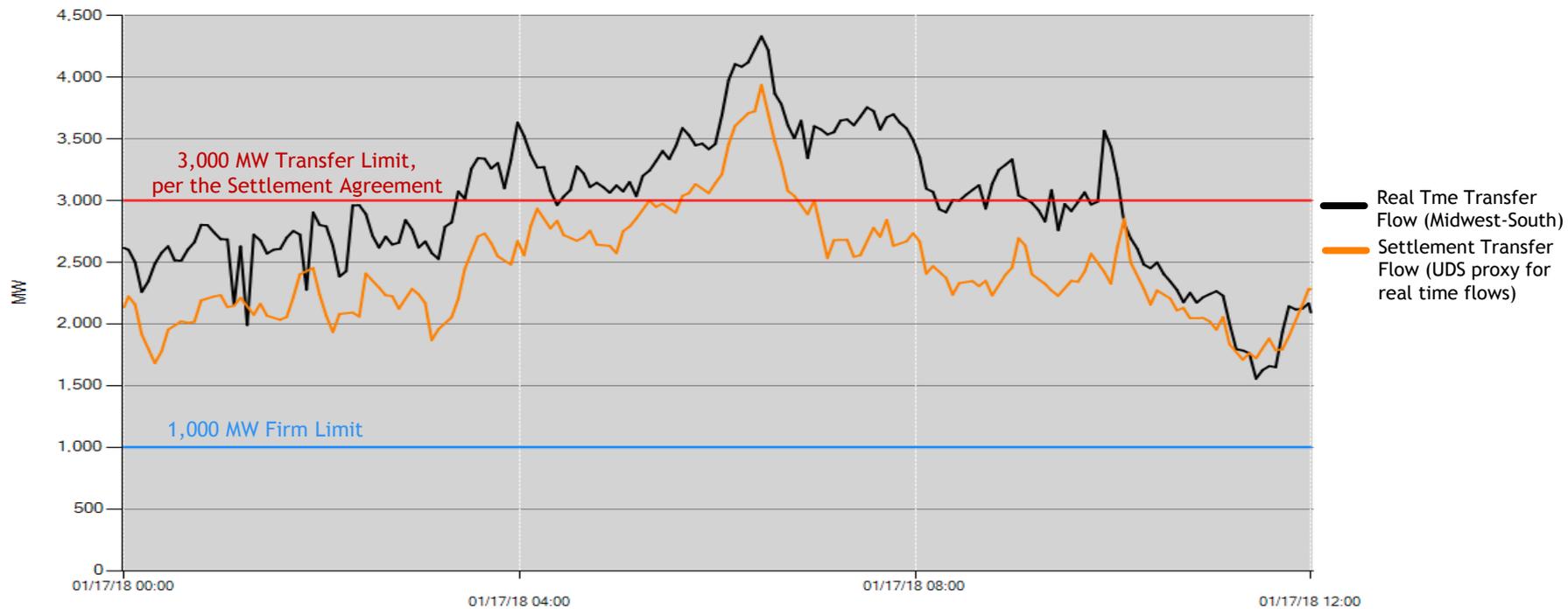
# TEMPERATURE DEVIATION FROM NORMAL MINIMUM SURFACE TEMPERATURE



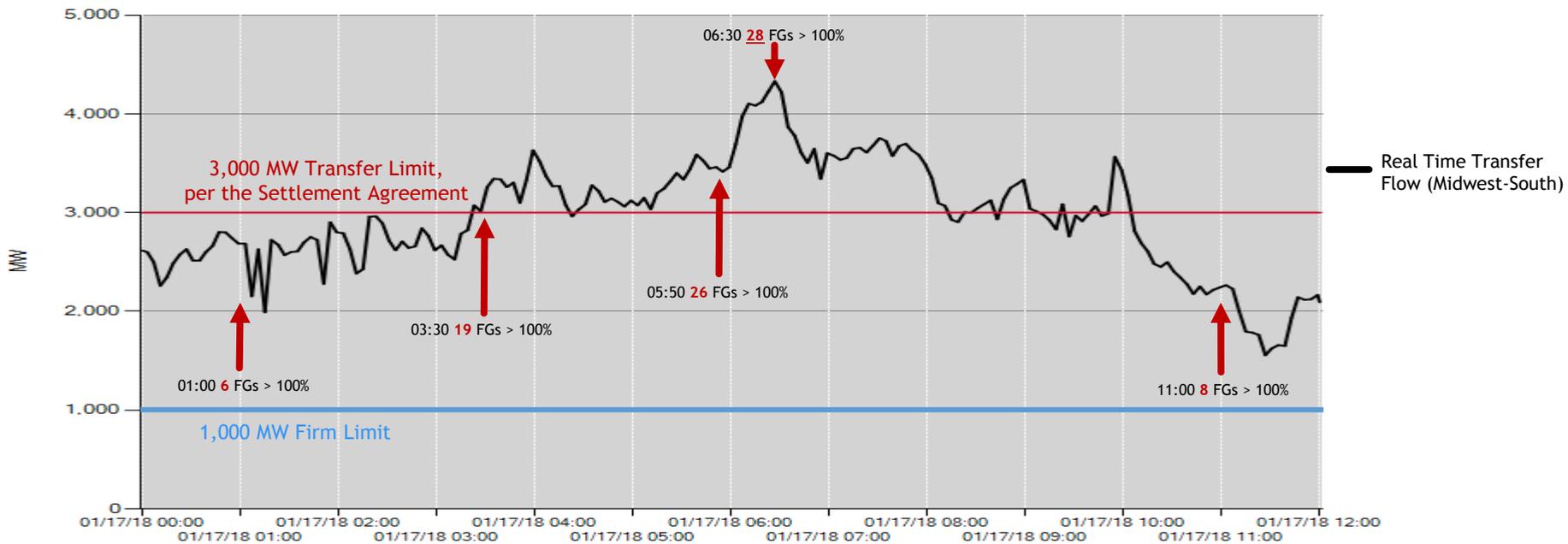
## REGIONAL OPERATIONS ON 1/17 AND 1/18

- The Real Time data values Midwest-South on January 17 and 18 were in excess of 3,000 MW for many hours of both days with a maximum value of 4,331 MW on the morning of January 17
- The Midwest-South Regional Directional Transfer Limit (RDTL), as defined in the Settlement Agreement, was exceeded on January 17 from 0635-0745 EST, with a maximum exceedance during this timeframe of 936 MW (as measured by the Settlement Transfer Flow, which uses UDS as a proxy for real time flows)

# REGIONAL OPERATIONS ON 1/17



# SPP AND JOINT PARTIES FLOWGATE LOADING ISSUES ON 1/17



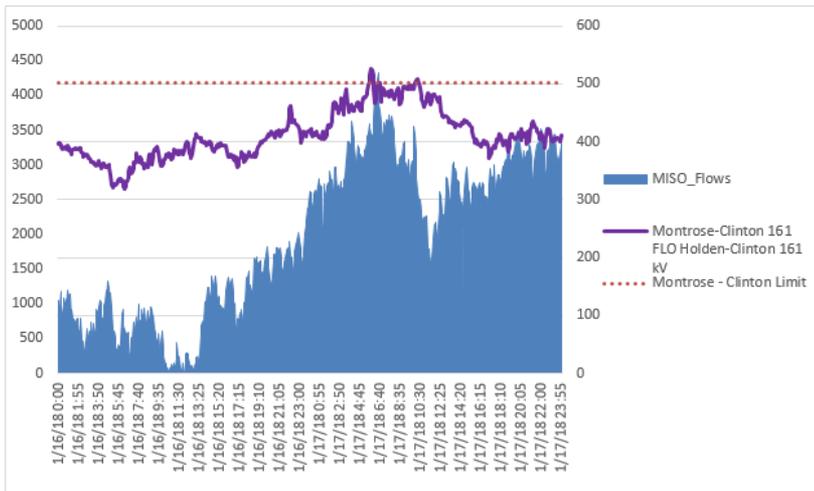
# JOINT PARTY OPERATIONS ON THE MORNING OF JANUARY 17

- SPP and JPs together had **28** flowgates > 100% post-contingent during peak regional transfer
  - Post-contingent load shed plans were the only remaining mitigation measures for several of these flowgates
  - Some elements were approaching overload conditions with no contingency
- Non-firm transactions in the TVA BA, sourced from PJM, were cut due to a MISO TLR, causing TVA to call EEA 1
  - This TLR lasted many hours without any reductions, and was held active to allow for more flow from MISO Midwest to MISO South
- SPP experienced voltage decay in the Southwest Missouri and Northeast Oklahoma region, with voltage as low as **0.89** per unit in real-time
- SPP committed **45** resources from intra-day/short term reliability unit commitment (RUC), or manually committed per RC request, due to transmission congestion
- PowerSouth declared EEA1 due to all resources being deployed
- SPP and the JPs communicated their system reliability issues to MISO several times during this event
- Cold weather ratings were employed during this event. If this event occurred in the summer, loading conditions would be much more severe
- The JPs provided 1,150 MW of Emergency Energy to MISO South, without which the RDTL exceedances may have persisted or worsened

# RE-DISPATCH INFORMATION

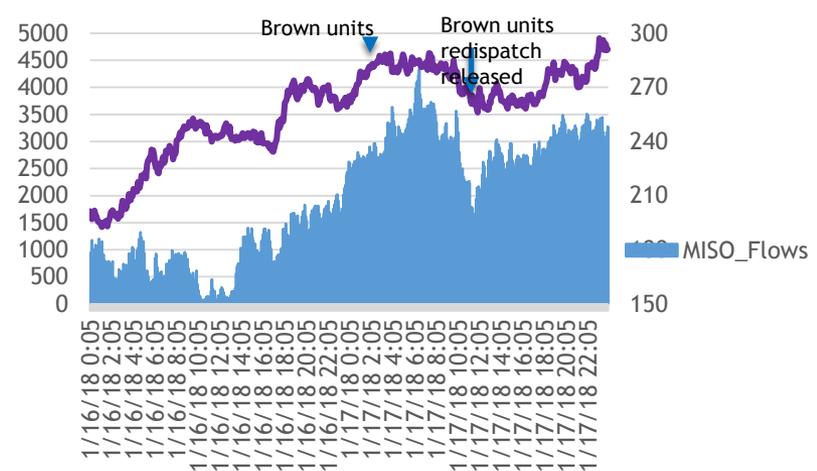
Due to large correlation of the RDTL on particular flowgates, both AECI and LGE/KU internally re-dispatched firm generation to maintain real-time and N-1 System Operating Limits

### AECI Example

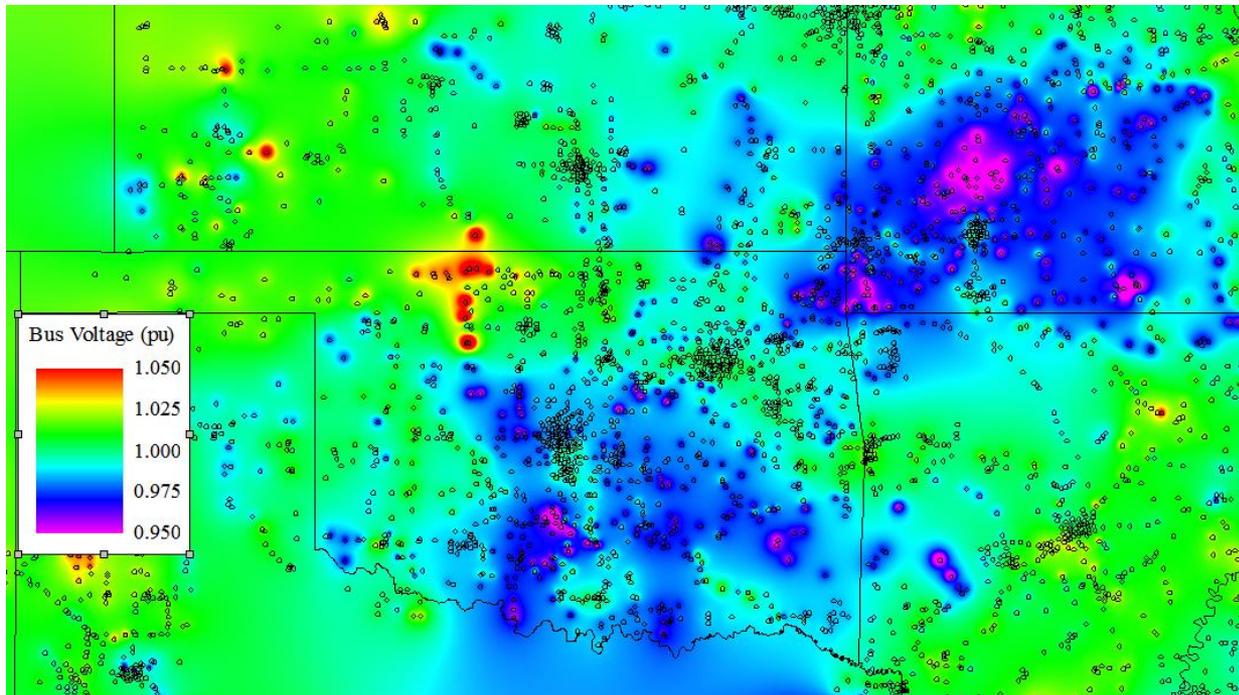


\*Absolute value of MISO transfers shown in this graph.

### LGE/KU Example



# SPP REAL TIME VOLTAGE ISSUES ON 1/17



## LESSONS LEARNED FROM 1/17

- More clarity and mutual understanding of the non-firm, as-available nature of MISO's Regional Transfer flows and of the expectations for congestion management processes, use of TLR, redispatch, reconfiguration, or manual load shed (if necessary)
- Advanced preparation and planning for purchases of emergency energy schedules and RC training exercises for readiness to implement emergency energy schedules
- Increased communication, pre-planning, and information exchange regarding MISO's Regional Transfer flows
- Operational control of Regional Transfers using real-time data rather than controlling to UDS flows

## SUMMARY

- On January 17, 2018, MISO exceeded the “non-firm, as-available” transfer limits established under the Settlement Agreement
- This failure to comply with the agreed transfer limits put firm load at risk in adjacent Reliability Coordination Areas
- SPP and the Joint Parties have raised their concerns with MISO and the parties are discussing meaningful improvements to ensure reliable operations and protect firm load

# QUESTIONS