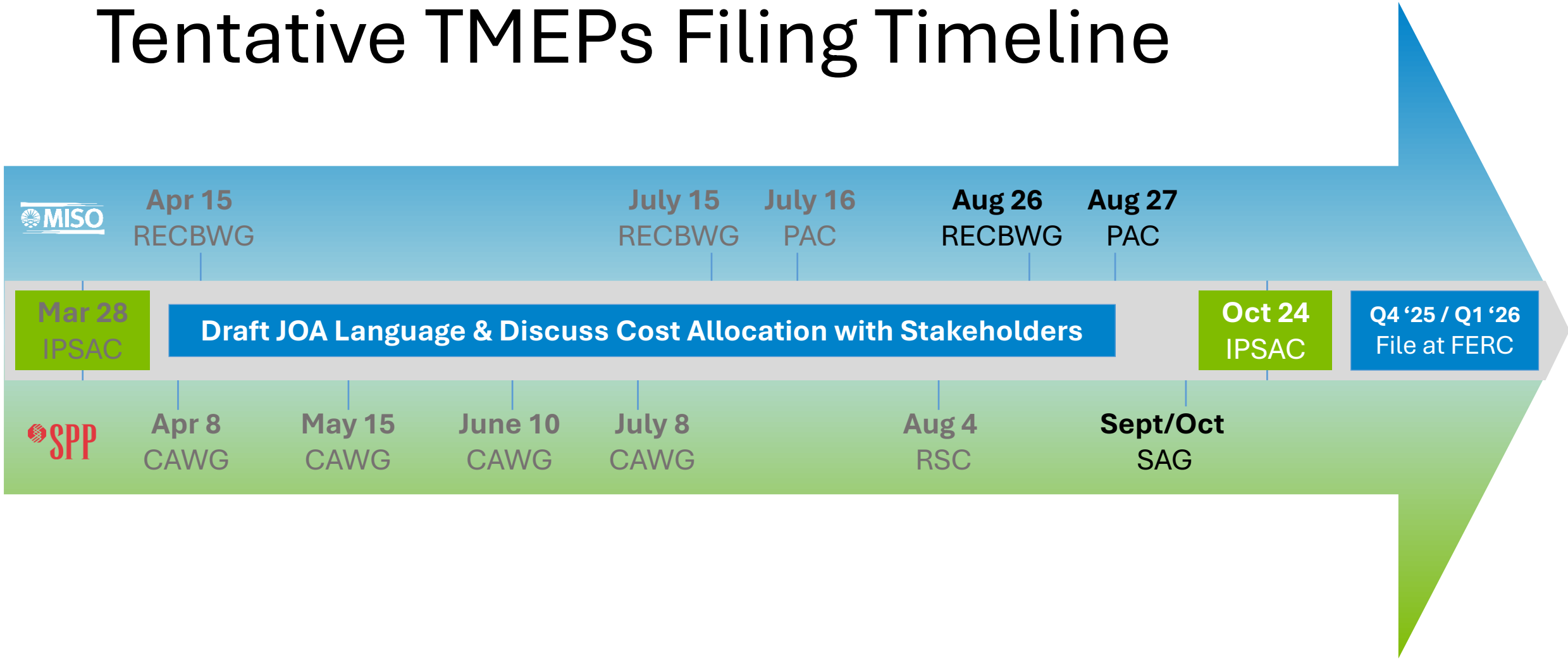
SPP-MISO Interregional Planning Stakeholder Advisory Committee

August 6, 2025

Agenda

1. Tentative TMEPs Filing Timeline
2. CSP Study Updates
    a. FERC CSP Waiver Update
    b. Models Update
    c. Analyses Update
    d. Transfer Scenarios Update
    e. Extreme Weather Scenario Update
3. Transmission Solution Idea Submission Window & Feedback Request
4. Study Timeline / Next Steps

Tentative TMEPs Filing Timeline



This timeline assumes regional processes approve cost allocation.

MISO-SPP 2024-’25 CSP Study Update

2024-25 CSP Overview

The RTOs proposed to expand the scope of the CSP study to provide for a more robust and comprehensive interregional planning process in the 2024-25 planning cycle.

The study aims to identify transmission system enhancements to improve reliability and resiliency in both MISO and SPP, while also enhancing transfer capability between the two systems.

To achieve this goal, the RTOs will consider a FERC 205 filing to recommend projects with multiple benefits.

Study effort will be performed throughout 2025.

Study scope is posted at the following locations:

- SPP website: https://spp.org/Documents/73529/MISO-SPP%20IPSAC%20Meeting%20Materials%2020250328.zip
- MISO website: https://www.misoenergy.org/engage/committees/interregional-meetings/

MISO-SPP JOA Language Waiver Filing Update

- MISO and SPP filed a joint waiver request for certain specific language in the MISO-SPP Joint Operating Agreement (JOA) on January 15, 2025
  - Waiver request included the need for additional model years for issue/needs analysis and whether reliability and public policy projects could be alternatively valued, and not limited to replacement cost of regional projects
- The filing received support from stakeholders and no protests
- The RTOs believed the study as scoped could proceed as a CSP; however, certain existing JOA provisions proved challenging for project recommendation

FERC Waiver Update

What did FERC deny?

- The Commission denied the waiver request for the temporary exemptions from the JOA multi-year analysis requirement and regional project avoidance benefit metrics for reliability and public policy projects

What are we doing to comply?

- MISO and SPP will create 15-year models to be completed in October/November.
- The RTOs are considering a 205 filing to amend the JOA to support recommendations of projects with multiple benefits (i.e., FERC Order 1920 Benefits)

What does that mean for the study?

- MISO and SPP have completed analysis on 10-year models and will do the same when 15-year models are completed. Should results be drastically different, MISO and SPP may open a second solution window for stakeholders

Models Update

- MISO and SPP completed blended/combined study models, which were posted on June 27 and include stakeholder input*
- 15-year models are in-process; expected to be completed in October/November
- Extreme temperature scenario will utilize SPP's ITP 2025 resilience model and MISO's CSP blended model, which is expected to be posted in the next few weeks to be used as a sensitivity assessment to the study

**MISO-SPP CSP Models & Transfers Feedback – RTO Responses* can be found here.

Analysis Update

	Reliability Analysis	Transfer Analysis	Economic Analysis	Extreme Cold Weather Analysis
Analyses:	NERC TPL: 001-5 Planning Contingencies: P0, P1, P2, and P7	First Contingency Incremental Transfer Capability (FCITC) NERC TPL: 001-5 Planning Contingencies: P0, P1, P2, and P7 Single initiating and common mode outages	SPP and MISO will develop a blended Event File reflecting each RTOs approach to flow gate identification	NERC TPL: 001 Planning Contingencies: P0, P1, P2, and P7
Preliminary Results: (2034 Cases)	✓	✓	✓	Pending

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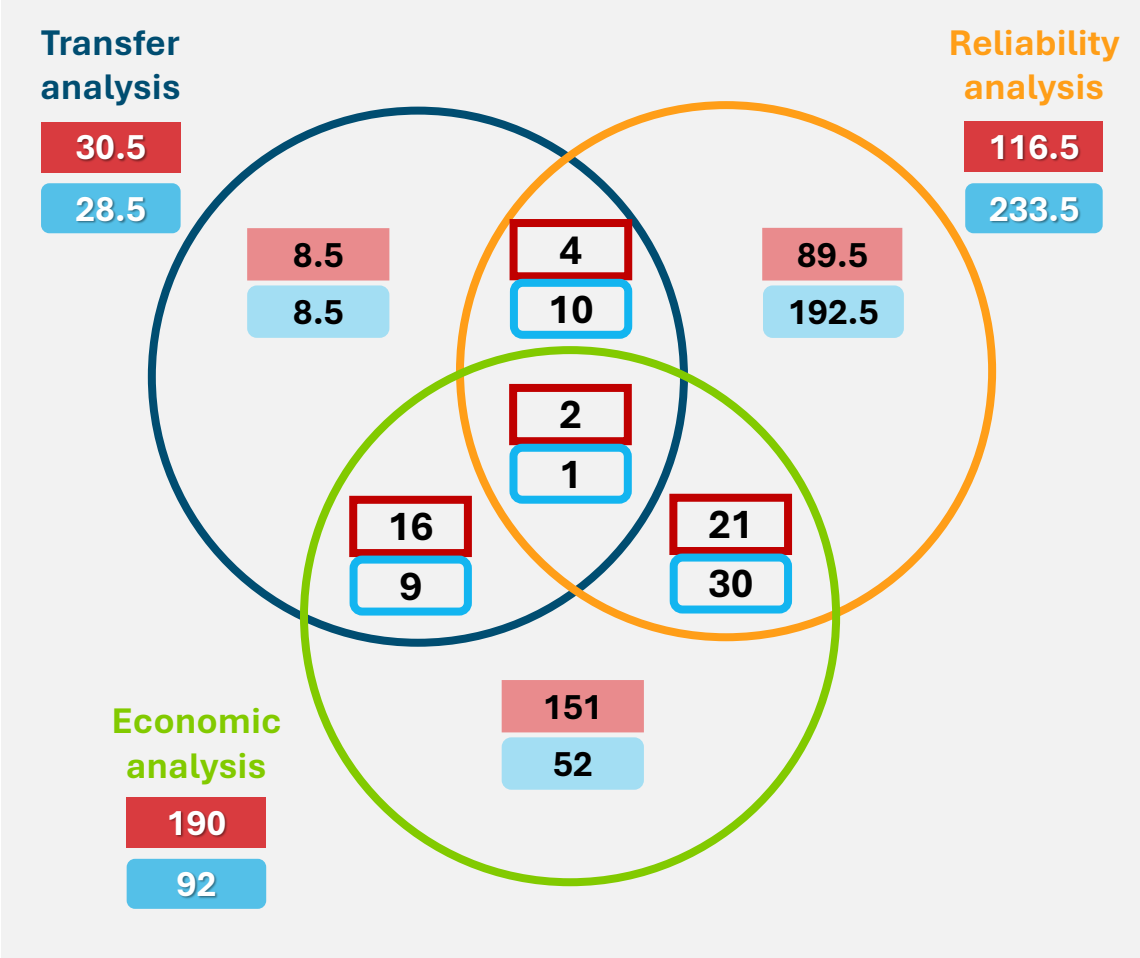
Preliminary Analysis Results Summary

Count of issues by analysis area & footprint

Preliminary Results



SPP / MISO	Reflects **total** issues by RTO under Reliability, Transfer, and Economic categories
SPP / MISO	Reflects **unique** issues by RTO under only Reliability, Transfer, and Economic categories
SPP / MISO	Reflects **unique** issues by RTO under overlapping Reliability, Transfer, and Economic categories

Notes:

- Individual RTO footprint results from the joint study reflect analysis on the blended model.
- Issue counts represent RTO lines and tie-lines; tie lines are counted with 0.5 weight to avoid double counting at regional level.

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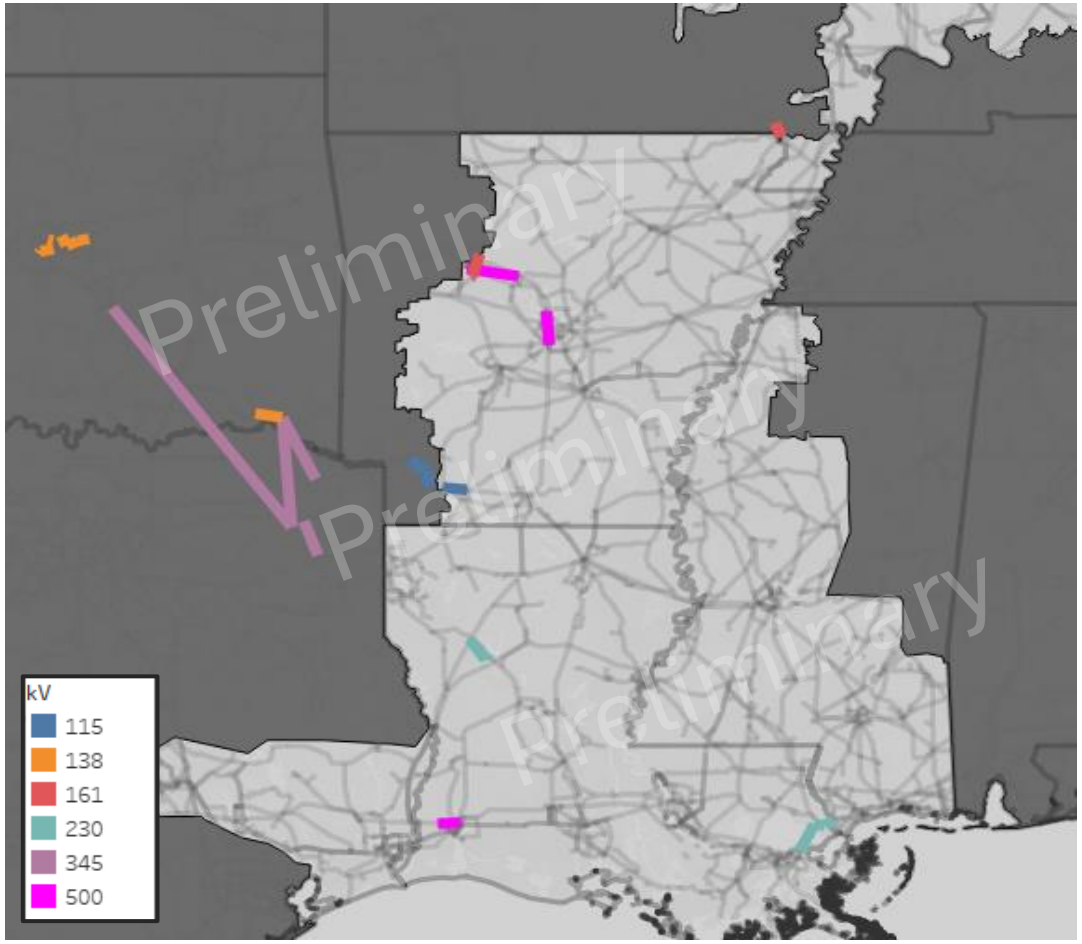
Preliminary Results

Transfer Results

SPP Export, MISO Import Limitations (all cases)



Notes:
Summarized preliminary transfer results represent limits or violations on monitored facilities for NERC P0 or P1 events
Additional contingencies such as NERC P2 and P7 will be evaluated to ensure resolving an identified issue is a robust solution

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Transfer Issues | *SPP Export, MISO Import Limitations*

Preliminary Results

Monitored Facility	RTO	Transfer Rank	Total Transfers Impacted	Worst Loading (%)	Congestion Measure ($/MW)
[EAI]MAYFLOWER EHV 500kV - [EAI]MABELVALE 500 kV	MISO	1	3	-	-
[WERE]JEFFREY ENERGY CENTER 345kV - [WERE]HOYT 345 kV	SPP	1	3	-	-
[AEPW]WELSH 345kV - [AEPW]DIANA 345kV 1	SPP	1	2	-	-
[AEPW]WELSH 345kV - [AEPW]DIANA 345kV 2	SPP	1	2	-	-
[CLEC]DOLET HILLS 345kV - [CLEC]DOLET HILLS 230kV	SPP	1	1	-	-
[OKGE]HORSESHOE LAKE 138kV - [OKGE]HAMMETT TAP 138kV	SPP	1	1	92.38	-
[CLEC]LAYFIELD 230kV - [CLEC]WESTERN KRAFT 230 kV	MISO	2	4	103.96	-
[EES]SLIDELL 230kV - [CLEC]FRONT ST 230kV	MISO	2	2	-	408
[SWPA]CLARKSVILLE 161kV - [SWPA]DARDANELLE DAM 161kV	SPP	2	2	-	344,412
[AEPW]PITTSBURG 345kV - [AEPW]VALLIANT 345kV	SPP	2	2	-	590
[AECI]SAINT FRANCIS 161kV - [EAI]JIM HILL 161kV	MISO	2	1	-	-
[OKGE]DUNJEE 138kV - [OKGE]RENO 138kV	SPP	2	1	145.6	-
[AEPW]HUGO 138kV - [WFEC]VALLIANT 138kV	SPP	2	1	-	3,768
[EAI]ARK NUCLEAR ONE 500kV - [EAI]PLEASANT HILL 500kV	MISO	3	2	-	-
[AEPW]VALLIANT 345kV - [AEPW]LYDIA 345kV	SPP	3	2	-	6,764
[OKGE]RENO 138kV - [OKGE]TROSPER 138kV	SPP	3	1	-	-

Notes:
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Additional contingencies such as NERC P2 and P7 will be evaluated to ensure resolving an identified issue is a robust solution

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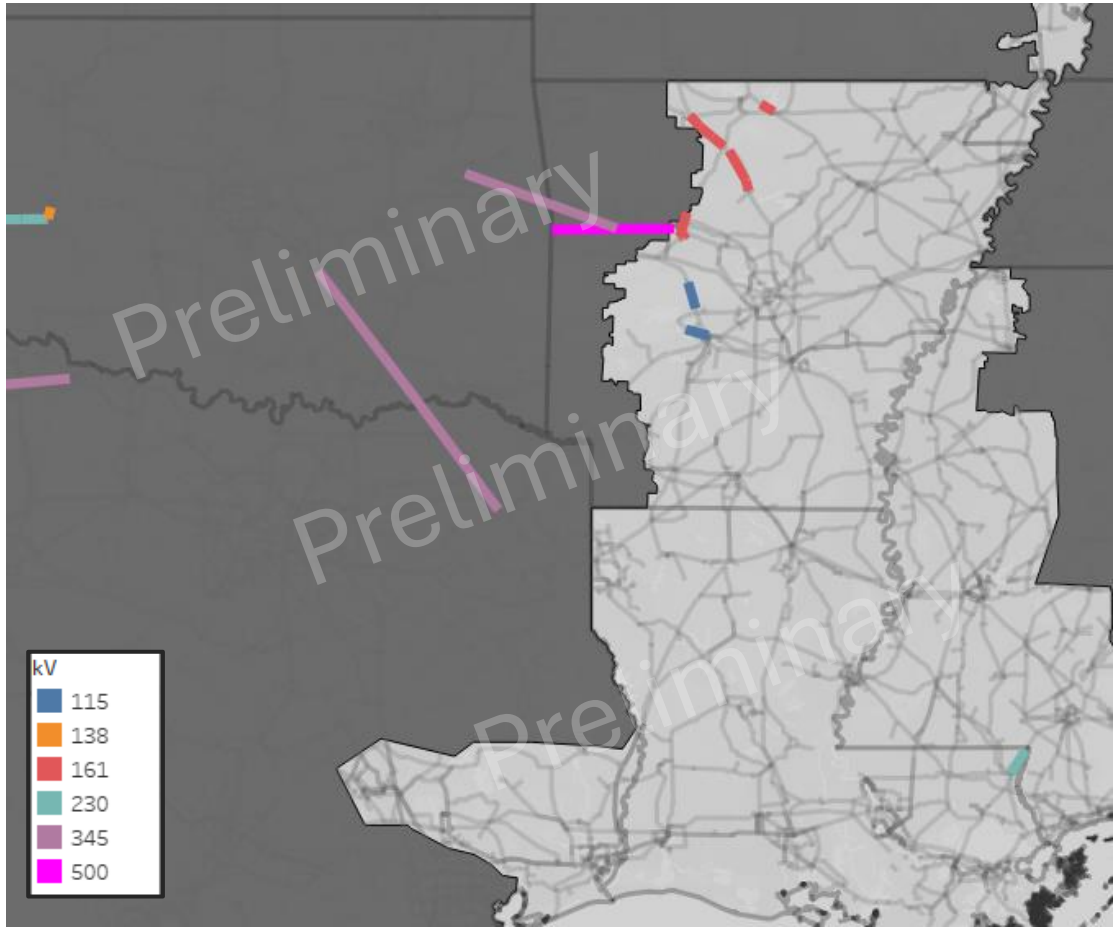
Preliminary Results

Transfer Results

SPP Import, MISO Export Limitations (all cases)



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Transfer Issues | *SPP Import, MISO Export Limitations*

Preliminary Results

Monitored Facility	RTO	Transfer Rank	Total Transfers Impacted	Worst Loading (%)	Congestion Measure ($/MW)
[SWPA]DARDANELLE DAM 161kV - [SWPA]CLARKSVILLE 161 kV	SPP	1	6	126.7	344,412
[AEPW]PITTSBURG 345kV - [OKGE]SEMINOLE 345 kV	SPP	1	3	112.26	-
[AEPW]SWEETWATER 230kV - [SPS]STLN-DEMARC6 230 kV	SPP	1	3	142.27	-
[EAI]ARKLAHOMA 115kV - [EAI]HOT SPRINGS EHV-E 115 kV	MISO	1	2	-	-
[EAI]LAKE CATHERINE 115kV - [EAI]ARKLAHOMA 115 kV	MISO	1	2	-	-
[SPS]HOLCOM1 345kV - [SUNC]FINNEY 345 kV	SPP	1	2	-	-
[EAI]ARKLAHOMA 115kV - [EAI]HOT SPRINGS EHV-E 115 kV	MISO	1	1	-	-
[OKGE]MUSKOGEE 345kV - [OKGE]GRIFFIN 345 kV	SPP	1	1	119.08	579
[EAI]RUSSELVILLE SOUTH 161kV - [SWPA]DARDANELLE DAM 161 kV	Tie Line	2	7	112.93	109,443
[CSWS]CHISHOLM 230kV - [AEPW]SWEETWATER 230 kV	SPP	2	3	-	541,744
[EAI]ARKLAHOMA 115kV - [EAI]HOT SPRINGS EHV-W 115 kV	MISO	2	1	-	-
[EAI]HILLTOP 161kV - [EAI]ST.JOE 161 kV	MISO	2	1	-	-
[AEPW]ELKCTY-4 138kV - [AEPW]ELKCTY-6 138kV	SPP	2	1		-
[EAI]RUSSELVILLE EAST 161kV - [EAI]RUSSELVILLE SOUTH 161 kV	MISO	3	4	-	-
[EES]ADAMS CREEK 230kV - [EES]BOGALUSA 230kV	MISO	3	1	-	-
[EAI] ST.JOE 161kV - [EAI] EVERTON ROAD 161kV	MISO	3	1	-	-
[AEPW]ELKCTY-6 138kV - [AEPW]ELKCITY6 230kV	SPP	3	1	-	-

Notes:
Summarized preliminary transfer results represent limits or violations on monitored facilities for NERC P0 or P1 events
Additional contingencies such as NERC P2 and P7 will be evaluated to ensure resolving an identified issue is a robust solution

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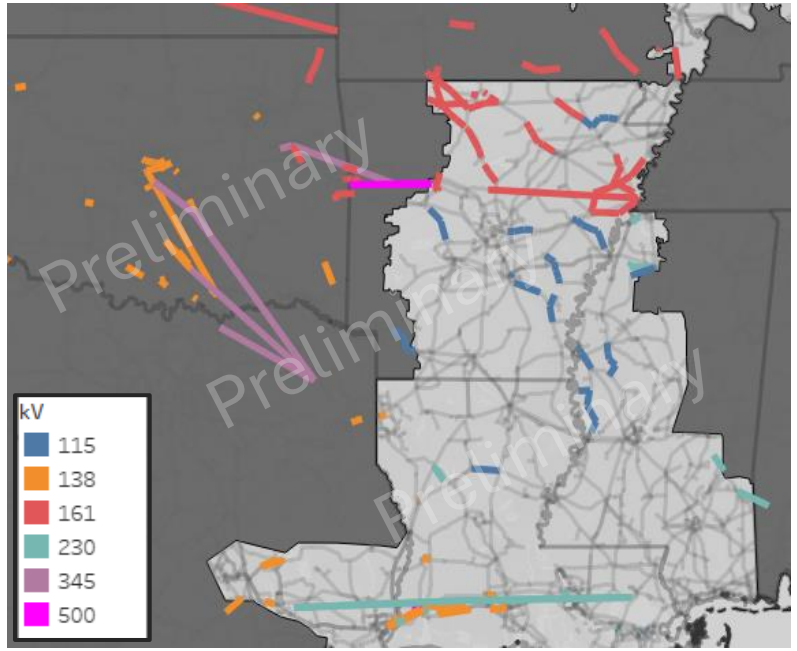
Preliminary Results

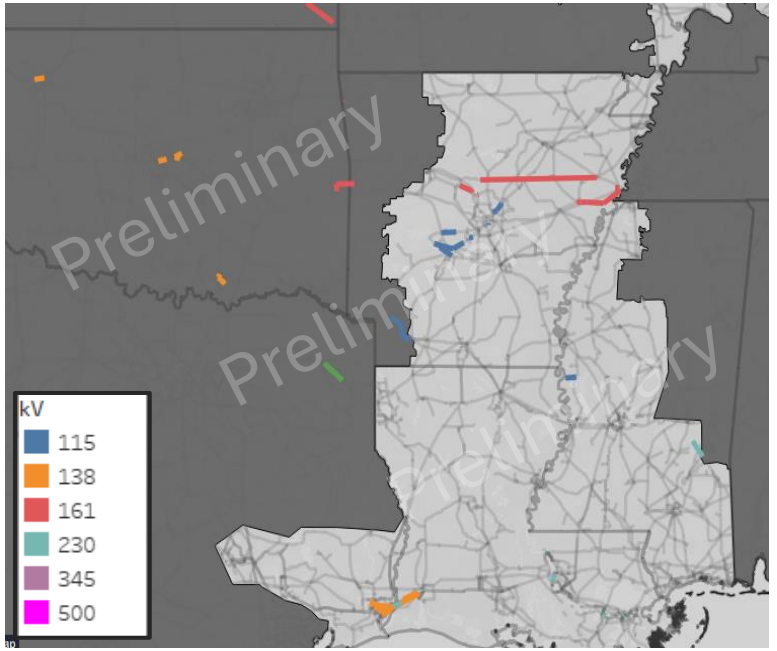
Reliability Results Map

Thermal violations (>90%) by case/season

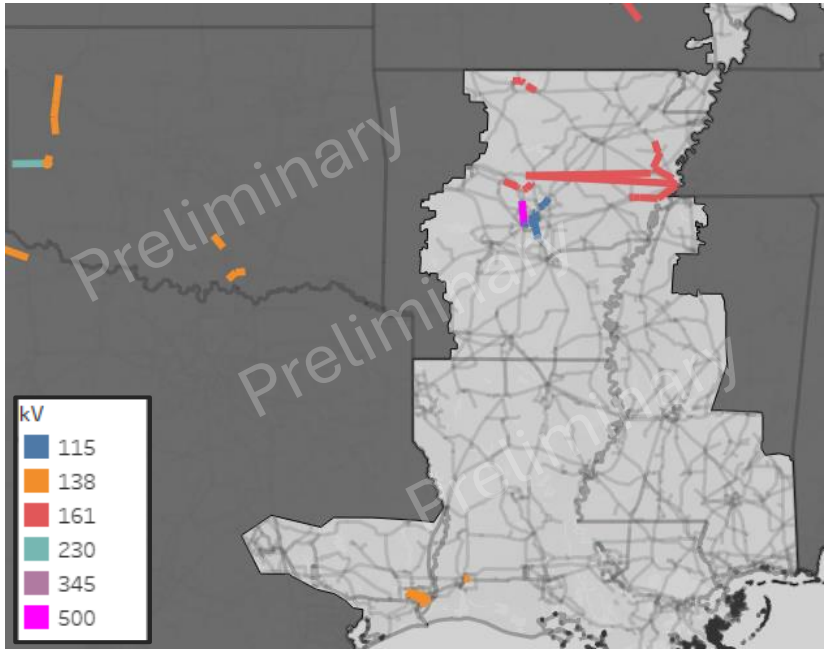
Summer



Winter



Light Load



Maps include monitored facilities with a thermal violation (> 90%) for any of the following:
Base case or NERC P1, P2, or P7

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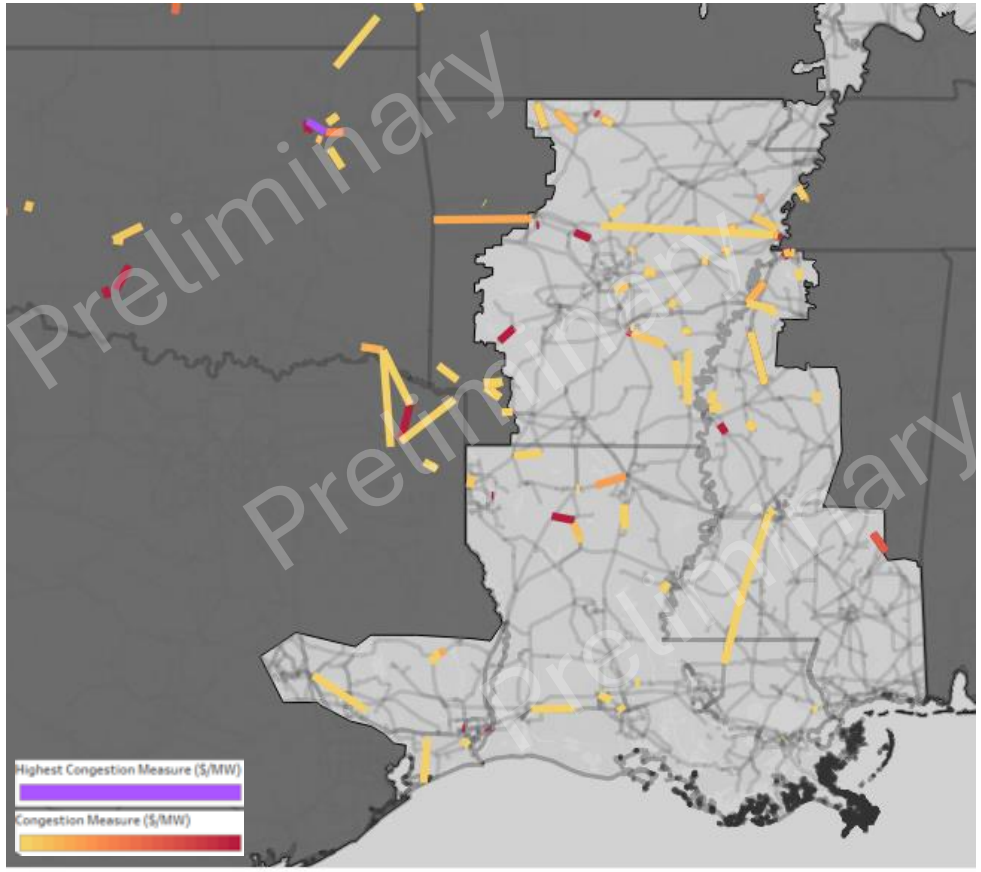
Preliminary Results

Economic Results – Congested Flowgates

Congestion Measure ($/MW) = Average shadow price * binding hours



Scale Details:

- <$10,000 – yellow
- >$100,000 – red
- Top flowgate - purple
  - Highlighted separately to avoid skewing the color scale

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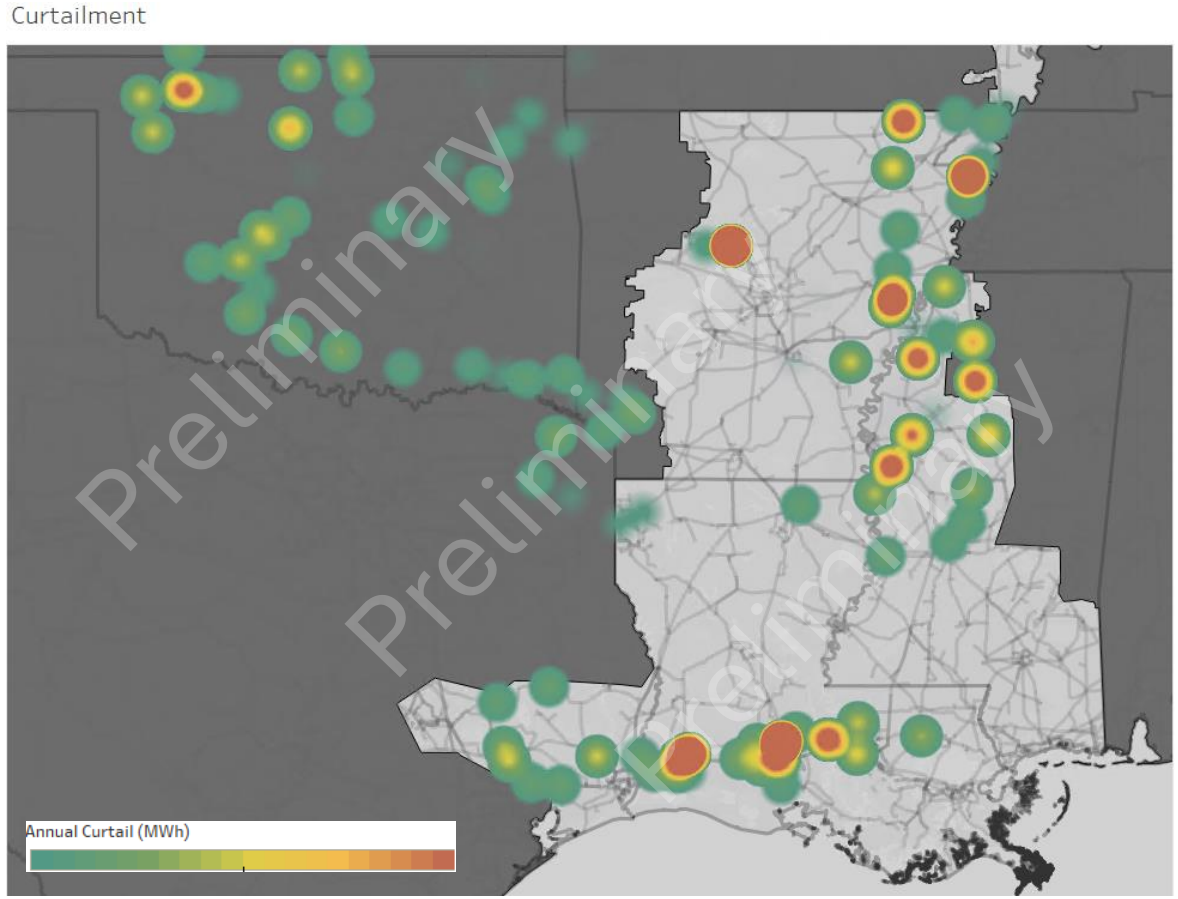
Preliminary Results

Economic Results (Curtailment)

Annual generation curtailment due to congestion (MWh)



Annual curtailed generation (MWh) reported includes:

- Wind
- Solar
- Hybrid (Solar PV + BESS)
- Distributed Generation Solar (DGPV)

Scale details:

- <10,000 MWh - Green
- >100,000 MWh - Red

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Preliminary Results

Economic Results (Top Congested Flowgates)

TOP 5 MISO SOUTH FLOWGATES		
Flowgate	**Area**	**Congestion Measure**
BUNCH GULLY - COLONIAL ORANGE 138 kV	EES	$449,220
MORRILTON EAST - GLEASON 161 kV	EES-EAI	$366,656
CARROLL STREET PARK - NECHES 138 kV	EES	$364,242
HARRISON EAST - OMAHA 161 kV	EES-EAI	$317,996
WALNUT RIDGE TRANSFORMER 161/115 kV	EES-EAI	$145,278

- Flowgate analysis was conducted to determine the top congested flowgates for each of the areas: MISO, SPP, and tie lines between MISO and SPP
- Preliminary results show the top five unique flowgates for each of the respected areas
- Further analysis will be conducted to determine the top flowgates along the seam for MISO and SPP

TOP 5 SPP FLOWGATES		
Flowgate	**Area**	**Congestion Measure**
TULSA - ANTHEM 345 kV	AEPW	$8,561,586
SWEETWATER - CHISHOLM 230 kV	AEPW	$541,714
WOODRING TRANSFORMER 345/138 kV	OKGE	$492,930
LAWTON SHERIDAN - FTSIL_TP 138 kV	AEPW	$454,490
DARDANELLE DAM - CLARKSVILLE 161 kV	SWPA	$344,412

TOP 5 MISO-SPP TIE LINE FLOWGATES		
Flowgate	**Area**	**Congestion Measure**
PATMOS WEST AECC - FULTON 115 kV	EES-EAI/AEPW	$184,435
RUSSELVILLE SOUTH - DARDANELLE DAM 161 kV	EES-EAI/SWPA	$109,443
SOUTHLAND - NORFORK 161 kV	EES-EAI/SWPA	$25,979
SOUTH LEAD HILL - BULL SHOALS DAM 161 kV	EES-EAI/SWPA	$15,469
ARKANSAS NUCLEAR ONE - FT SMITH 500 kV	EES-EAI/OKGE	$4,140

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MISO-SPP Study Timeline

Status	Study Tasks
✓	1. Determine study approach – **August 2024**
✓	2. Develop & finalize study scope – **August through December 2024**
✓	3. Review models progress – **March 2025^**
✓	4. Post draft models – **April 2025**
✓	5. Finalize models a. Create 10-year models – **June 2025** b. Create 15-year models *[added due to waiver denial]* – **October/November 2025**
	6. Complete analysis & determine transmission needs – **August 2025^***
	7. Develop and evaluate transmission solutions – **August/September 2025**
	8. Share draft solutions – **October 2025^**
	9. Provide recommendation(s) to IPSAC – **December 2025^**
	10. Determine interregional cost allocation – **begin discussions in Q4 2025, finalize in 2026** a. Allocate between both RTOs b. Disperse costs to membership
	11. Request approvals at MOPC (SPP), PAC (MISO), & RTO Board of Directors – **2026**
	12. Develop JOA changes and file at FERC – **2026**

^ *IPSAC meeting to be scheduled and stakeholder feedback request expected*

* *A stakeholder solution submission window will likely be opened during this time*

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MISO-SPP CSP Transmission Solution Idea Submission Window & Stakeholder Feedback Request

MISO and SPP have opened a transmission solution window and invite stakeholders to:

- ➢Submit solution ideas
- ➢Provide feedback on posted preliminary analysis results

Please use the form below for each individual idea or feedback submission (one idea per form submission):

- ✓Submission Form: https://forms.office.com/g/X2hfasK9Mv
- ✓Email attachments to:
  - MISO: interregionalplanning@misoenergy.org
  - SPP: interregionalrelations@spp.org

Solution Ideas & Stakeholder Feedback are due September 5

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Next Steps

- Review stakeholder feedback and solution ideas at the next MISO-SPP IPSAC on October 24, 2025

Contact

- Interregional Planning (MISO)
  interregionalplanning@misoenergy.org

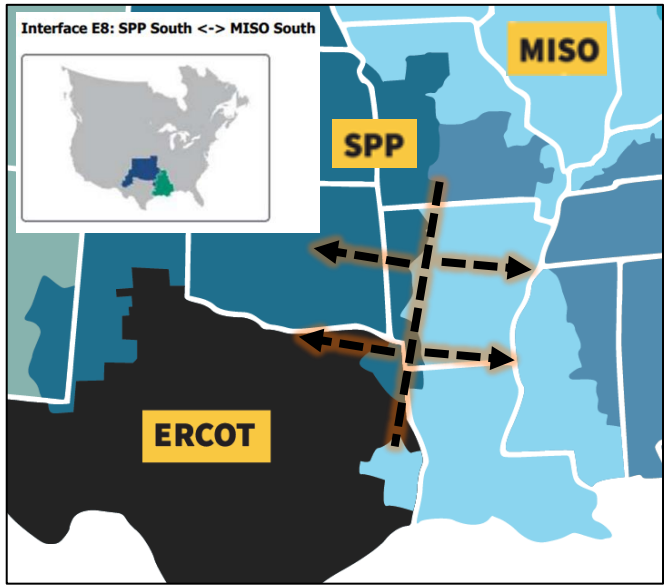
- Interregional Relations (SPP)
  interregionalrelations@spp.org

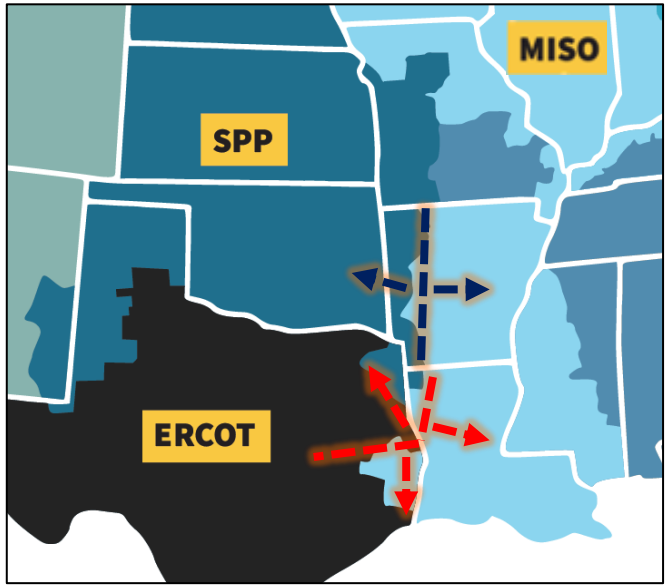
Appendix

Study Scope Update: Planning Models

The RTOs will focus solely on the combined/blended model for issue identification and benefits evaluation

Models:	Blended/Combined Models
Reliability	2034 SPP-MISO Blended Models: • Light Load • Summer Peak • Winter Peak
Economic	2034 SPP-MISO Blended Economic Model
Extreme Hot / Cold Event	2034 SPP-MISO Blended Winter Peak Reliability Model (Adapted)





Transfer Scenarios

The RTOs request feedback on the transfer scenarios below:

Transfer Short Name	Interface Name	Transfer No.	Source	Sink
MISO South Exports to SPP South	**MISO South – SPP South (NERC ITCS)**	1a	MISO South	SPP South
MISO South Imports from SPP South		1b	SPP South	MISO South
Arkansas Exports to Oklahoma	**Arkansas – Oklahoma**	2a	LRZ8	SPP AR-OK[1]
Arkansas Imports from Oklahoma		2b	SPP AR-OK[1]	LRZ8
LA/TX Exports to OK	**Louisiana/Texas – Oklahoma**	3a	LRZ9	SPP LA-TX[2]
LA/TX Imports from OK		3b	SPP LA-TX[2]	LRZ9

[1]SPP AR-OK: AEP, AECC, SPA, GRDA, OGE, WFEC
[2]SPP LA-TX: AEP (LA-TX), SPS

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