Planning Reserve Margin Requirement (PRMR) Allocation

RASC

July 9, 2025

(Issues RASC-2020-4 and 2019-2)

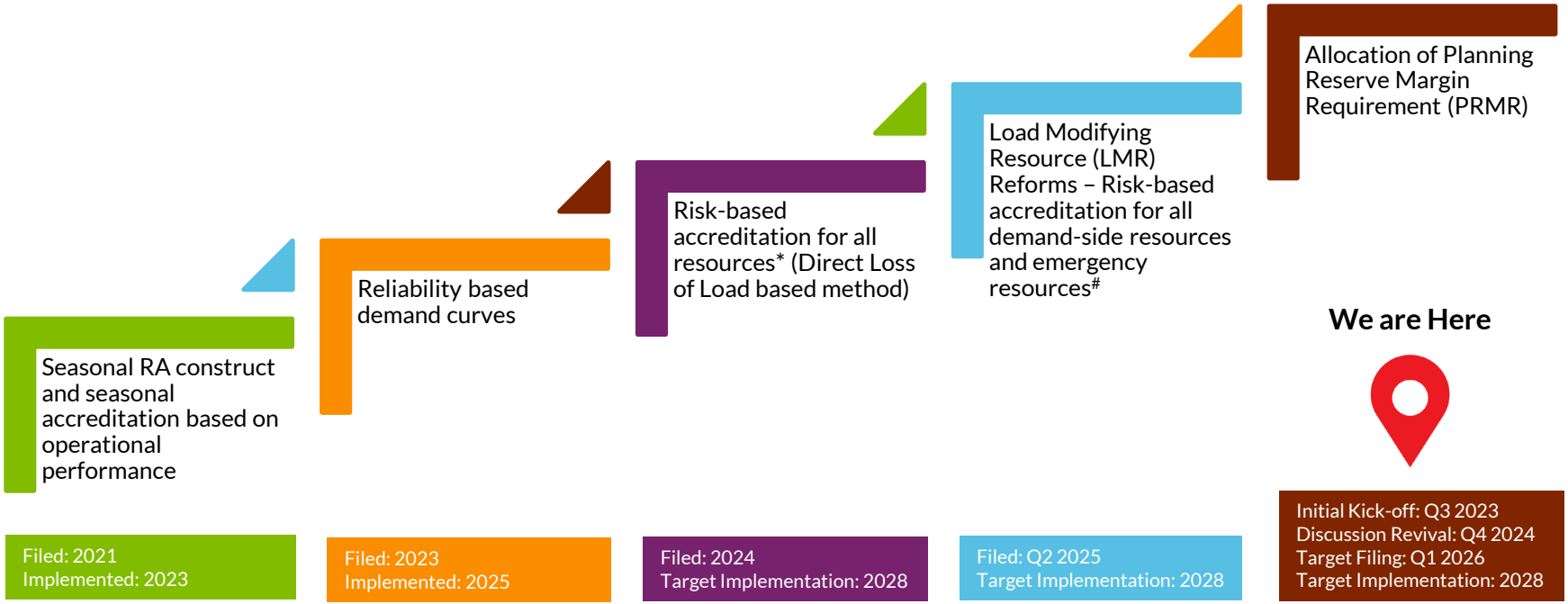
Purpose & Key Takeaways

Purpose: Review MISO's revised proposal for allocation of the Planning Reserve Margin Requirement (PRMR)

Key Takeaways:

- Shifting system risks drive the need for the PRMR to be allocated to LSEs based on periods with the highest reliability risks
- Stakeholder feedback emphasized that stability is needed for PRMR allocation to enable better planning
- The hours proposed for a LSEs PRMR allocation will be determined using Seasonal Expected RA Hours that will be updated once every three years

MISO continues to evolve its Resource Adequacy construct to meet the needs of the changing operating paradigm and associated risk profile



*Excludes LMRs and External resources

#Excludes External resources

Reminder on Problem Statement and Design Objectives

Problem Statement

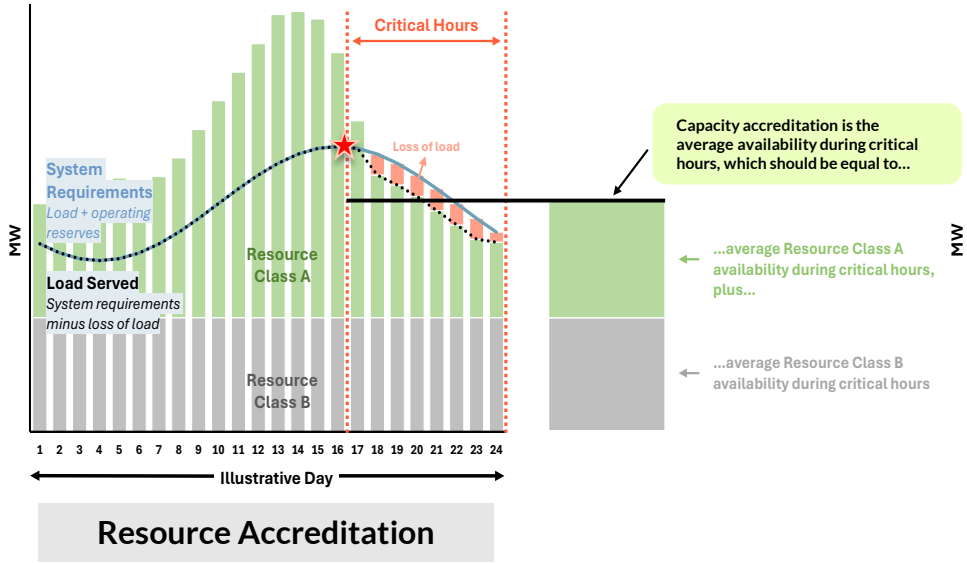
The current Load Serving Entity (LSE) obligation for regional resource adequacy is based on LSE coincident peak load at MISO's peak load multiplied by the regional Planning Reserve Margin. This may not align with the adequacy risks MISO is experiencing in its current operating environment, the adequacy risks that are predicted to occur in the future, nor the proposed DLOL methodology. LSE PRMR allocation should be examined in order to align the LSE and retail choice LSE obligations with the risks the system is experiencing during times of highest need, consistent with the DLOL methodology and other proposed and pending Resource Adequacy reforms.

Design Objective

- LSE obligation (PRMR) based on load during times of highest need
- Alignment between resource accreditation and PRMR allocation

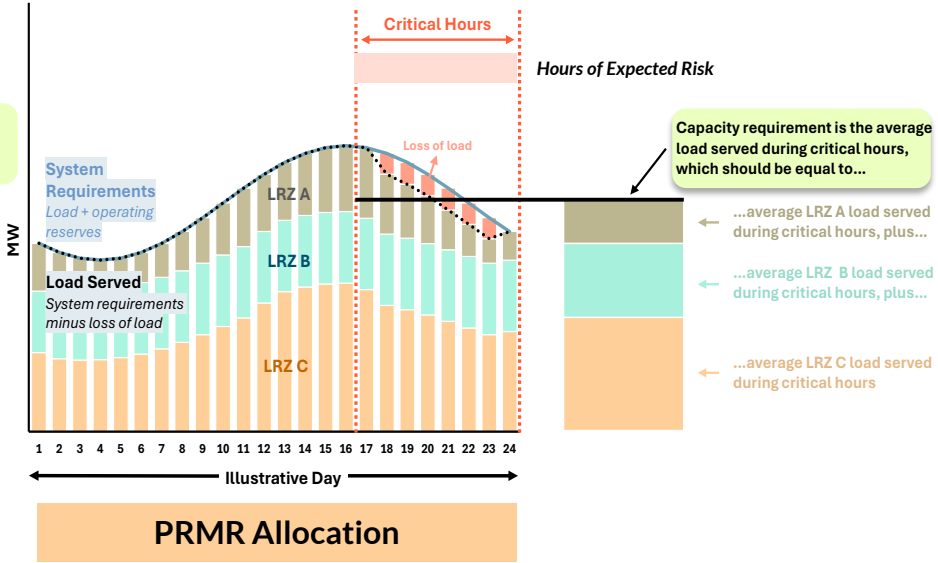
PRMR Allocation based on peak load does not align with accreditation reforms that accredit Resources during times of risk

Load measured at peak may not align with expected risk



Resource Accreditation

Load measured during expected times of risk allows PRMR allocation to shift as risk changes



PRMR Allocation

Graphics courtesy of Energy + Environmental Economics (E3)
account for adjustment to LOLE criteria

★ Coincident Peak Demand

Differences in settled load v. Coincident Peak Forecast load can impact a LSE's PRMR allocation under the revised proposal

ILLUSTRATIVE EXAMPLE

	Current PRMR Allocation			Proposed PRMR Allocation			Delta	
LSE	CPF	%	PRMR	Settled Load*	%	PRMR	%	PRMR
LSE A	4,000	44.4%	4,316	3,600	45.6%	4,425	1.1%	109
LSE B	3,000	33.3%	3,237	2,800	35.4%	3,442	2.1%	205
LSE C	2,000	22.2%	2,158	1,500	19.0%	1,844	-3.2%	(314)
Total	**9,000**	**100.0%**	**9,711**	**7,900**	**100.0%**	**9,711**	0.0%	0

PRMR	**9,711**

For simplicity, PRMR unchanged in both examples

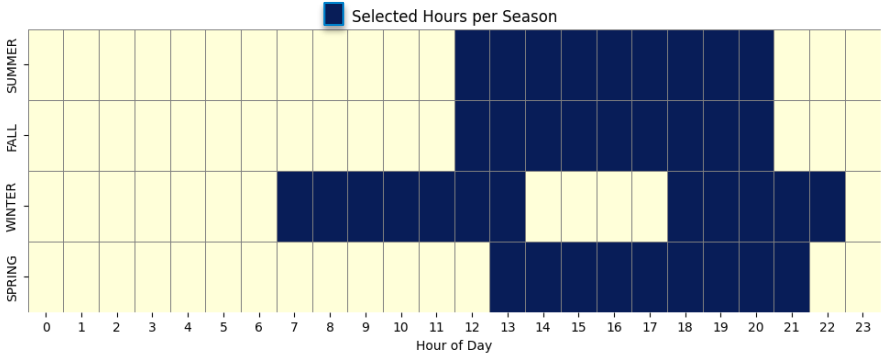
*Settled load during Expected RA Hours

CPF = Coincident Peak Forecast

In response to stakeholder feedback requesting more stability, MISO's revised proposal uses a fixed set of Seasonal Expected RA Hours for allocation of PRMR

- Under the revised PRMR allocation proposal, settled load will be evaluated using a one-year lookback and top 10 loads during a set of Seasonal Expected RA Hours on Business Days for each Season
  - Seasonal Expected RA Hours are derived from a 3-year analysis of historical RA Hours*
- Set of Seasonal Expected RA Hours remain fixed for 3 years with the potential to update for substantial changes (criteria to be developed)
- MISO analysis of RA Hours shows that, although the hours are slowly shifting, year to year the hours are stable

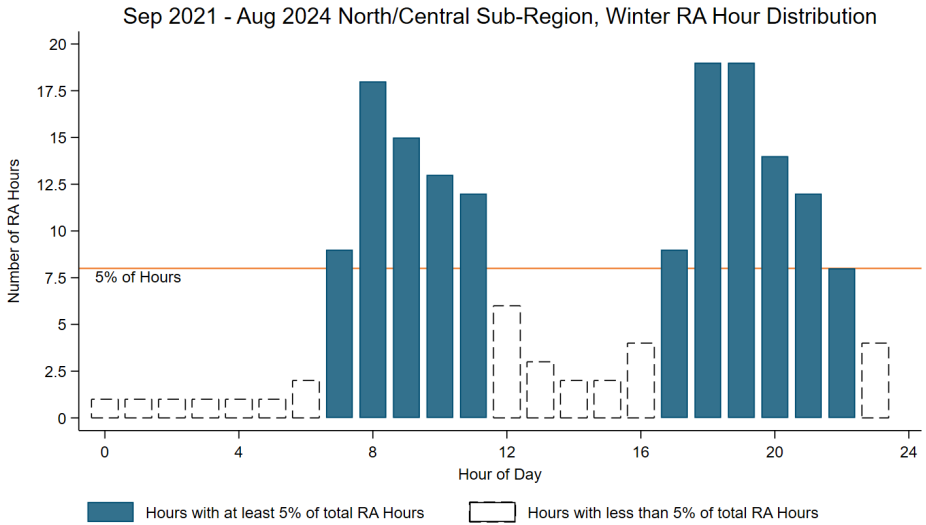
Example set of Seasonal Expected RA Hours



** More details follow in slide 8*

Seasonal Expected RA Hours

- For each hour of the day, measure frequency of RA Hour occurrence for last 3 years
- Seasonal Expected RA hours occur at least 5% of total hours
- Set of Seasonal Expected RA Hours remain fixed for 3 years with the potential to update for substantial changes (criteria to be developed)



Seasonal Expected RA Hour evaluation for PRMR allocation provides added stability to the PRA

- Provides planning certainty and stability with clearly defined expected risk periods
  - Expected RA Hours will be known in advance and the LSE and can take steps to influence load during these times
- Expected RA Hours during the season continue to cover times of highest risk for a specific season and provides better insight into reasonable expected demand during risky hours
- Includes a greater number of hours considered, avoiding volatility that may result from the impact of weather or random events when measuring load in just a few hours

Example of PRMR allocation based on settled load during Expected RA Hours

ILLUSTRATIVE EXAMPLE

LSE	Expected RA Hour	Average Settled Load	Seasonal Average	%	PRMR Allocation
LSE A	15	11,500	11,643	34.1%	11,932
LSE A	16	11,785			
LSE B	15	8,750	8,670	25.4%	8,886
LSE B	16	8,590			
LSE C	15	13,575	13,838	40.5%	14,182
LSE C	16	14,100			
Total			**34,150**	**100%**	**35,000**

PRMR	35,000

Average Settled Load: Average of Top 10 loads during the specific Expected RA Hour that season for non-holiday weekdays
Seasonal Average: Average of Settled Load

MISO does not have the data needed to provide indicative allocation based on historical settled load

- Settled load includes embedded LMR behind the meter generator (BTMG) and Demand Response (DR) MW that would need to be added back to provide a proper allocation across loads
- This data is not currently available to MISO, but is proposed to be collected and provided to MISO as a part of the upcoming Demand Response and Emergency Resource Reform
- Without this data, accurate indicative allocation by LSE is not possible
- MISO is requesting stakeholder feedback regarding feasibility and timeline to collect historical hourly LMR data necessary to calculate PRMR impacts of allocation by settled load

BTMG and DR data reflecting activity in Real-Time is required for PRMR allocation based on settled load

ILLUSTRATIVE EXAMPLE

	Proposed PRMR Allocation		
LSE	Net Settled Load*	%	PRMR
LSE A	11,643	34.1%	11,932
LSE B	8,670	25.4%	8,886
LSE C	13,838	40.5%	14,182
Total	**34,151**	**100%**	**35,000**

Data not Available

BTMG/DR in Use
3,500
0
790

Proposed PRMR Allocation with BTMG/DR			Delta	
Gross Settled Load*	%	PRMR	PRMR	%
15,143	39.4%	13,787	1,855	5.3%
8,670	22.6%	7,894	(992)	-2.8%
14,628	38.1%	13,319	(863)	-2.5%
38,441	**100.0%**	**35,000**	0	**0%**

PRMR	35,000

For simplicity, PRMR unchanged in both examples

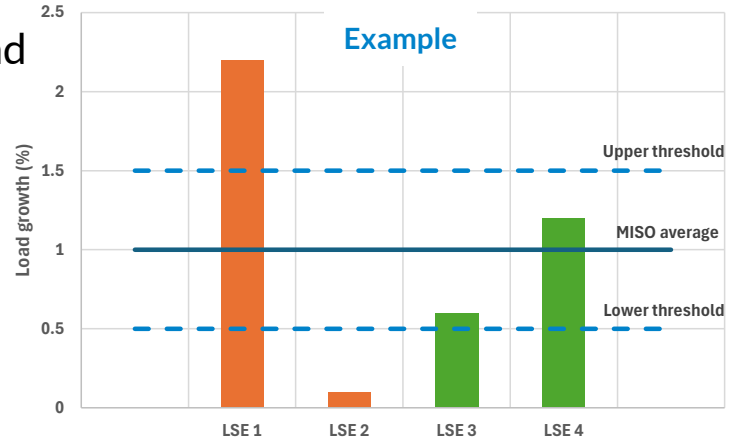
*Settled load during Expected RA Hours, Gross Settled Load adds back BTMG and DR in use

CPF = Coincident Peak Forecast

MISO is considering introducing corrections to account for substantial load changes from one year to the next

- Forecasted load additions/reductions for the upcoming Planning Year will not be reflected in the LSE's RA hours from the previous year
- An LSE with a large load addition (reduction) would cause a disproportional increase (decrease) of the requirement for other LSEs, instead of its own

- A correction factor could be applied to the demand data from the previous year, only for large deviations
- MISO is considering establishing a threshold
  - Option: LSE seasonal peak growth is much larger/smaller than the MISO-wide growth



Previously presented at the January 2025 RASC

Allocation to EDCs in Retail Choice states will require further discussion

- Currently, PRMR allocation to EDCs is done by the submission of Peak Load Contribution (PLC)
- Because of customer switching, it is not practical to look back at settled load for allocation of PRMR to EDCs
- MISO is requesting stakeholder feedback regarding a methodology to allocate PRMR to individual EDCs in retail choice states

Stakeholder Feedback Request

- MISO requests written feedback on MISO's revised proposal by July 25, 2025 on the following topics:
  - Feasibility and timeline to collect historical hourly LMR data necessary to calculate PRMR impacts of allocation by settled load.
  - Proposal to use Expected RA Hours updated every 3-years to evaluate settled load for PRMR allocation and suggestions for threshold to update before 3-year cycle.
  - Evaluation of settled load using the top 10 loads during Seasonal Expected RA Hours on non-holiday weekdays.
  - Methodology to account for substantial load changes from one year to the next.
  - Methods for allocation of PRMR obligation to individual EDCs in retail choice states.
- Issue Tracking ID#: RASC-2019-2, RASC-2020-4
- Feedback requests and responses are managed through the Feedback Tool on the MISO website: https://www.misoenergy.org/engage/stakeholder-feedback/

Next Steps

Develop approach for Retail States and EDC obligation calculations

Finalize proposal for load additions/reductions

Request and evaluate any additional LSE load data submission

Draft tariff language and FERC Filing - TENTATIVE

Contact Information

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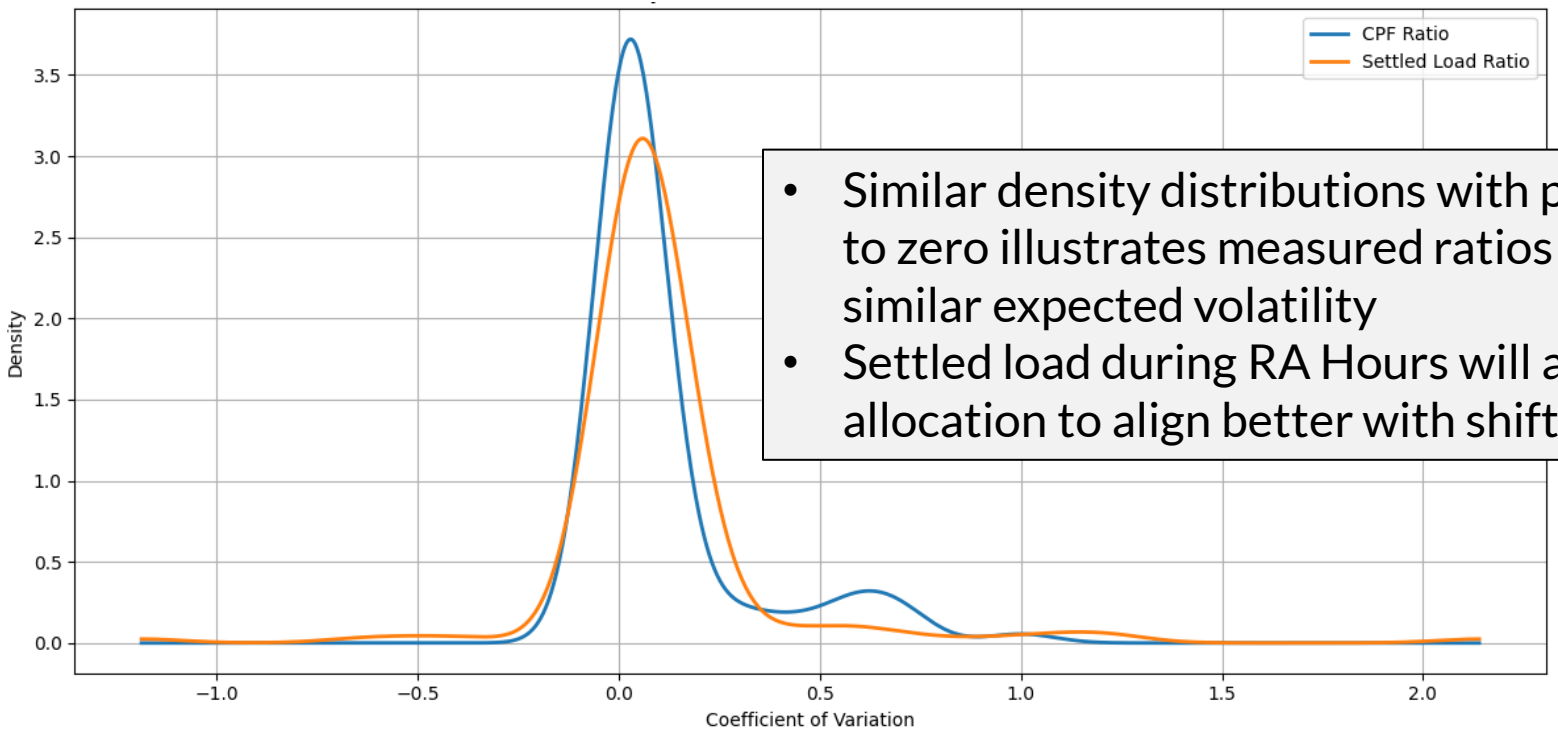
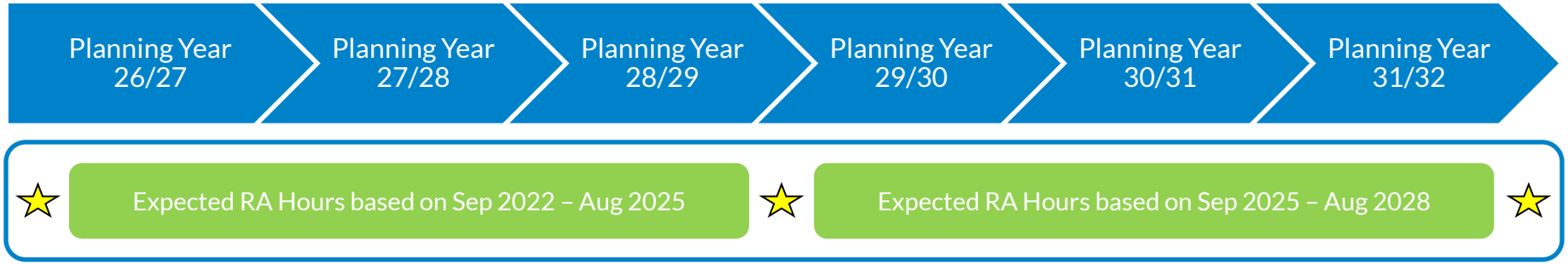
Appendix

In response to the April 9th RASC Action Item, MISO created a density plot of Settled Load and Coincident Peak Forecast (CPF) Ratio Coefficients of Variation indicating similar stability under both processes



- Similar density distributions with peaks close to zero illustrates measured ratios with similar expected volatility
- Settled load during RA Hours will allow PRMR allocation to align better with shifting risk

Expected RA Hours 3-Year Cycle

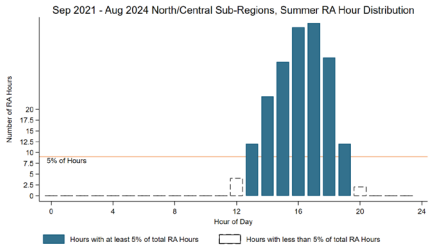


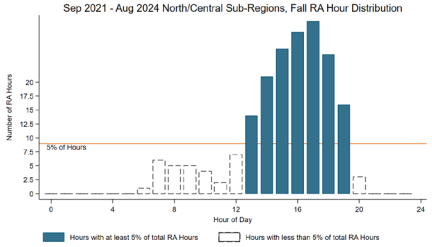
★ Expected RA Hours updated every 3-years with an annual evaluation

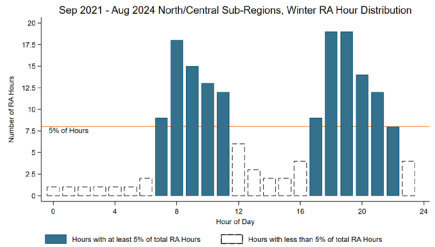
Differences from previous proposal

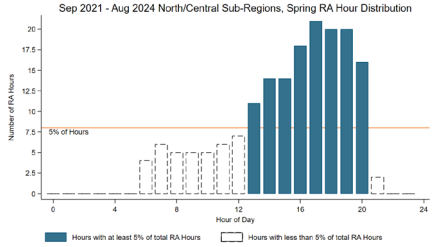
Design Details	Previous Proposal	Current Proposal
Hours to Evaluate	Published RA Hours	Expected RA Hours
Hour Updates	Yearly	Once in 3-Years
When are Hours Known	When published after they occur	Set in advance

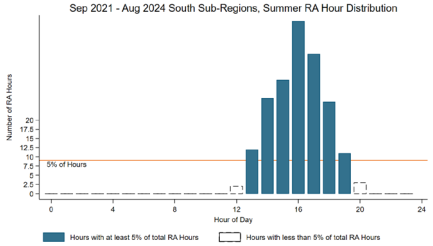
Seasonal Expected RA Hours for all Seasons and Sub-Regions using 2021-2024 RA Hours

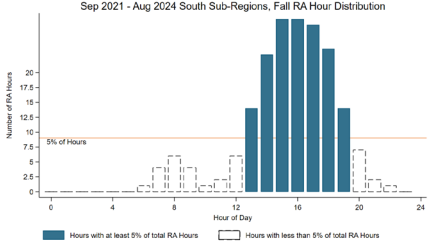


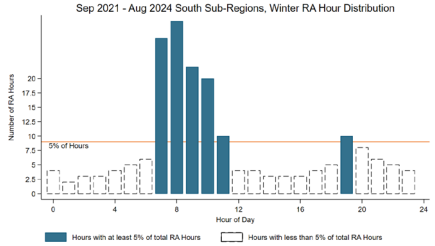


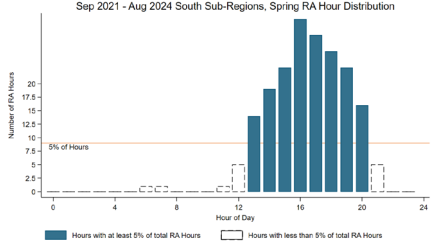












Seasonal Distribution of 2020 - 2024 RA Hours shows relative stability in time of day when RA Hour occurs