



Demand Resources Reforms Workshop

October 14, 2025

Executive Summary



- Today's presentation focuses on changes planned for this upcoming PRA
 - Reforms for PY 28/29 are not included in this presentation
- An overview of the requirements, documentation, and other changes planned for this upcoming PRA will be discussed
 - MISO will not discuss policy design questions
- BPM -11 redlines have been posted
 - This language is final except for the testing requirements which may change pending FERC action but does not include penalties, DR Deferral Notice, or replacement language
- FERC has not acted upon the order however MISO requested a 1-day effective date
 - Tests should be planned to be performed to the filed standards; tests that are completed in this fashion will be guaranteed to be accepted
 - Tests performed under the prior rules that occur after July 14 may be denied

Current Filing Status of Changes for Next Planning Year

- FERC has not given a final approval of the proposed Tariff changes regarding real power testing
- MISO will file two more filings, posted with today's material, regarding LMR Replacement and LMR Penalties and are discussed below
- MISO requested a 1-day effective date and Market Participants should plan to perform testing under the new rules
 - Tests performed under proposed rules will be valid under the old rules
- MISO will grandfather tests performed prior to July 15 to permit resources to test under the previous testing rules
 - Greater scrutiny will be used to assess the appropriateness of weather adjustments and MISO may reject adjustments that do not provide sufficient documentation regarding the appropriateness of these adjustments

January 1	July 14	July 15	February 1 or March 1
Testing Window Opens		New Testing Rules Begin	Tests must be completed by
Old Testing Rules may be used			registration

MECT Tool Registration Information

MECT Tool Registrations – Documentation Requirements

- Operating procedures used to curtail the load
 - Communication from MP to facility
 - Procedures used to curtail load
 - What we need to see is that the person(s) physically responsible for curtailing the load understand what they need to do and how they will do it – does not need to provide confidential information but should be specific enough that a reasonable third party feels confident the facility knows what they're doing
 - EOP startup/shutdown process documentation will suffice – this may be redacted for sensitive information
 - Expected time required to curtail the load
 - Confirmation the load can be curtailed for 4 consecutive hours
 - The MINIMUM amount of curtailment possible for all 4 consecutive hours
- Verification from the facility owners that what the real power test shows is what loads are expected to be curtailed during Emergencies
- Evidence supporting the Firm Service Level
 - This may take the form of contractual obligations or documentation supporting the amount of load that will never be expected to be curtailed
 - The contractual obligations may be a standard Tariff rider and an indicator of how many MWs the specific resource has
- Each non-residential resource being registered must submit a physical address of the actual load being curtailed
 - MPs with resources at least 5 MW in size will be required to submit EPNode information starting in PY 27/28.

MECT Tool Registrations – Real Power Test Requirements

- If a Market Participant is electing to use a real power test waiver, documentation must be provided demonstrating either:
 1. The test is explicitly waived by a state or other regulatory authority OR;
 2. The resource is participating in a retail contract approved by a state or regulatory authority AND the MP has posted credit of \$12,000/MW OR;
 3. The resource was issued Scheduling Instructions¹:
 1. The resource must identify the Hours in which Scheduling Instructions were issue
 2. Confirm at the time of registration that it has not added any new components to the resource if comprised of an aggregation of components. An aggregation may disaggregate (an) asset(s) without needing to retest provided the Demand Resource meets the waiver criteria with the asset(s) being disaggregated;
 3. Confirm the Demand Resource, and all components, operate in substantially the same manner as previously registered. For the purposes of this language, a significant change in the operations is defined as any change in the operational characteristics of an asset, such as the expansion of the facility, operation of additional production lines, or a change in the method by which Demand reduction is achieved. A change in accredited values due solely to a change in the resource's contribution to the Coincident Peak Demand forecast not driven by changes in operational characteristics does not preclude the use of this waiver provision.
- If a Market Participant is electing to perform a real power test, the test must satisfy the testing requirements based on when the real power test is performed
 - Tests from prior to July 15 may use last year's criteria
 - Adjustments will only be permitted for resources demonstrating temperature sensitive load
 - Adjustments for a change in the size of the aggregation or resource may also be considered
 - Tests occurring on or after July 15 must use the new testing criteria
 - This will be elaborated on further below

MECT Tool Registrations – Data Requirements

Time	Jan 1, 2025 HE 1	Jan 1, 2025 HE 2	Jan 1, 2025 HE 3	Jan 1, 2025 HE 4	Jan 1, 2025 HE 5	Jan 1, 2025 HE 6	Jan 1, 2025 HE 7	Jan 1, 2025 HE 8
Resource A	18132	19143	17875	18301	7104	18979	18362	18345
Test				Start	Stop			
Resource B	2090	1327	2081	1811	2021	1599	757	295
Test			Start					Stop

- Hourly metered output, measured in kWh
 - Only Seasons in which the resource is registering need to have data provided
 - Each resource, whether registering as part of an aggregation or not, must submit this data
 - Residential programs may submit a single aggregated value
 - FSL resources must provide data from Sept 1 through Aug 31 in addition to the specific Seasons they wish to participate
- The real power test can use this data to provide the requisite tests as shown on the right

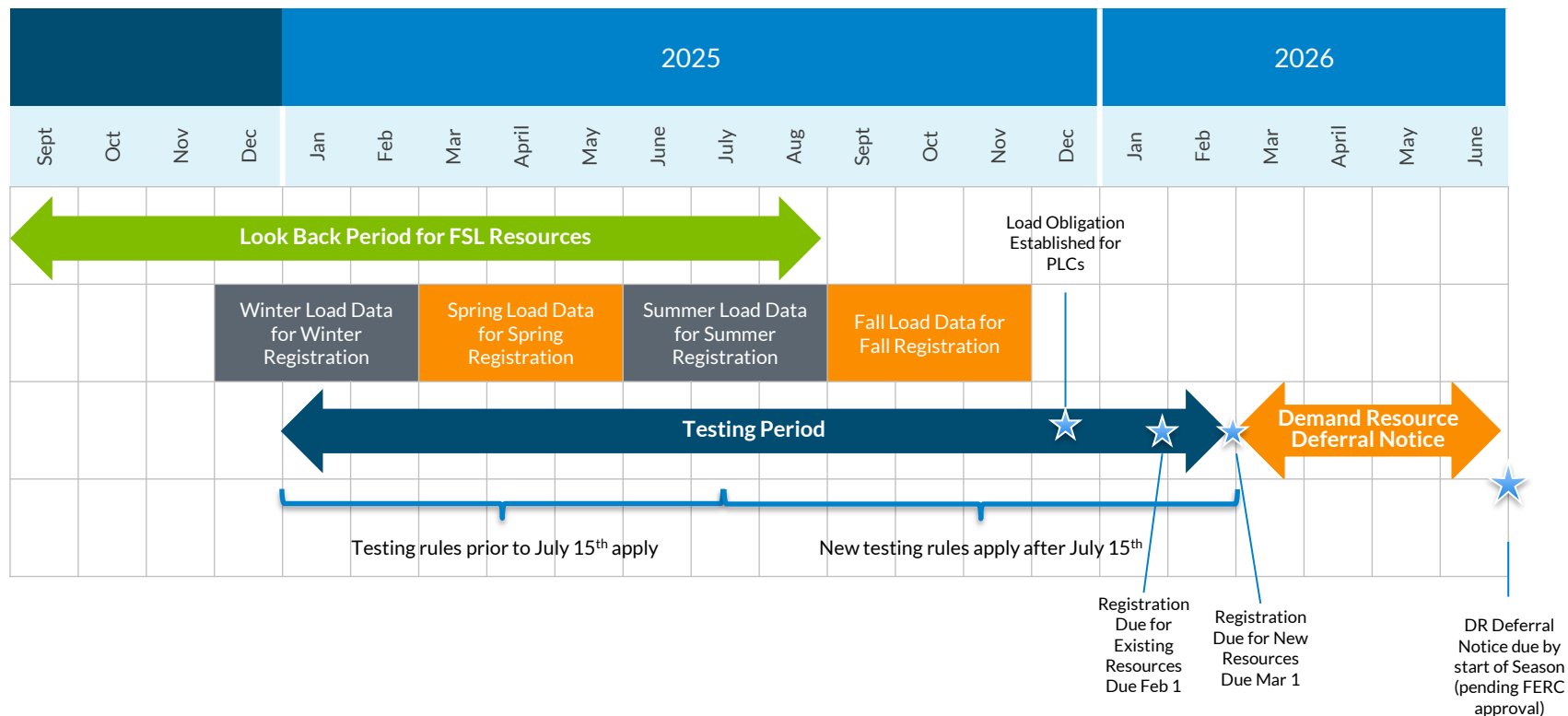
Resource A tested over a 1-hour period and so may register as a 1-hour or longer resource.

Resource B tested over a 5-hour period and so may register as a 5-hour or longer resource.

The real power test need not use a 10-in-10 calculation – a simple drop from hour to hour may be used

If a MP prefers to use the registered M&V methodology this is permitted
MPs should identify how they want the real power test measured

Important Dates for PY 26/27



Real Power Test Requirements

Testing Period

- Testing Period:
 - Begins January 1 of each Calendar Year for the following Planning Year
 - A real power test may be performed on any day after January 1 provided it is submitted at the time of registration
 - Resources wishing to submit a Demand Resource Deferral Notice must provide evidence they have begun operations prior to March 1
 - This evidence can be metered output or an attestation with meter data provided at a later date demonstrating operations prior to March 1
 - MISO will make a filing later this year to change the Demand Resource Deferral Notice to permit testing until the start of the Season being registered for
 - This permits a resource to test in August if it begins participating in the Fall PRA rather than requiring a test by June 1
- A Market Participant electing to submit a real power test using data prior to July 15, 2025 is subject to all testing parameters in effect in BPM-11 Resource Adequacy – R31
- A Market Participant electing to submit a real power test on or after July 15, 2025 is subject to the new testing parameters
- A resource must provide a test for each Season – a single test can be used if it satisfies the requirements for all Seasons

Requirements for Tests Prior to July 15, 2025

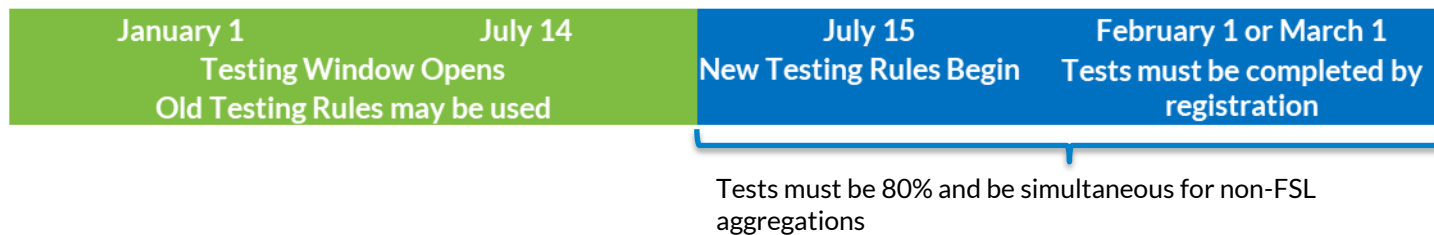
- This means a real power test must demonstrate 80% of the registered amount of Demand reduction OR;
- Demonstrate at least 50% of the registered Demand reduction and submitting an attestation from an officer of the MP or other financially responsible party documenting the need to increase Demand by this amount
 - In either case, an adjustment to peak seasonal conditions must be justified by documentation demonstrating the sensitivity of the load to temperature or other weather conditions
- Demand reduction below the FSL does not count towards the demonstration of Demand reduction
- Demand reduction must be maintained for at least one hour
- Mock tests will not exempt a resource from performing a real power test and an MP may not use the waiver provisions that existed prior to July 15th to waive the requirements to perform a real power test



Tests may be 50% with attestation

Real Power Test Requirements Period

- A real power test must demonstrate 80% of the registered amount of Demand reduction
- Demand reduction must be maintained for at least 15-minutes
- Any interval may be selected, and a normal plant shutdown may be used to provide the real power test
- A test must demonstrate demand reduction in no longer than 6-hours
- A resource may not register with a notification time less than provided by the real power test



Non-FSL Demand Resources Testing Requirements

- For a Demand Resource that is not an aggregation, the Demand reduction achieved must use all equipment that may be curtailed when called during a Scheduling Instruction
 - There is no requirement that all of this equipment be operating when issued a Scheduling Instruction; however, to qualify for capacity payments the real power test must demonstrate the equipment was curtailed
- For a Demand Resource that is part of an aggregation, the Demand reduction must be achieved simultaneously for all resources within the aggregation
 - The Demand reduction need not start simultaneously, but all resources within the program must have curtailed load by the same set of intervals used to identify the Demand reduction
- For non-residential programs, the tested Demand reduction is measured as either:
 - From starting from the Demand at the start of the test period to the interval the reduction is achieved by; OR
 - The appropriate Measurement and Verification methodology will be applied
 - The MP may select which option they prefer
- For residential programs, the Demand reduction is measured using the registered Measurement and Verification methodology

Non-FSL Demand Resources Testing Requirements

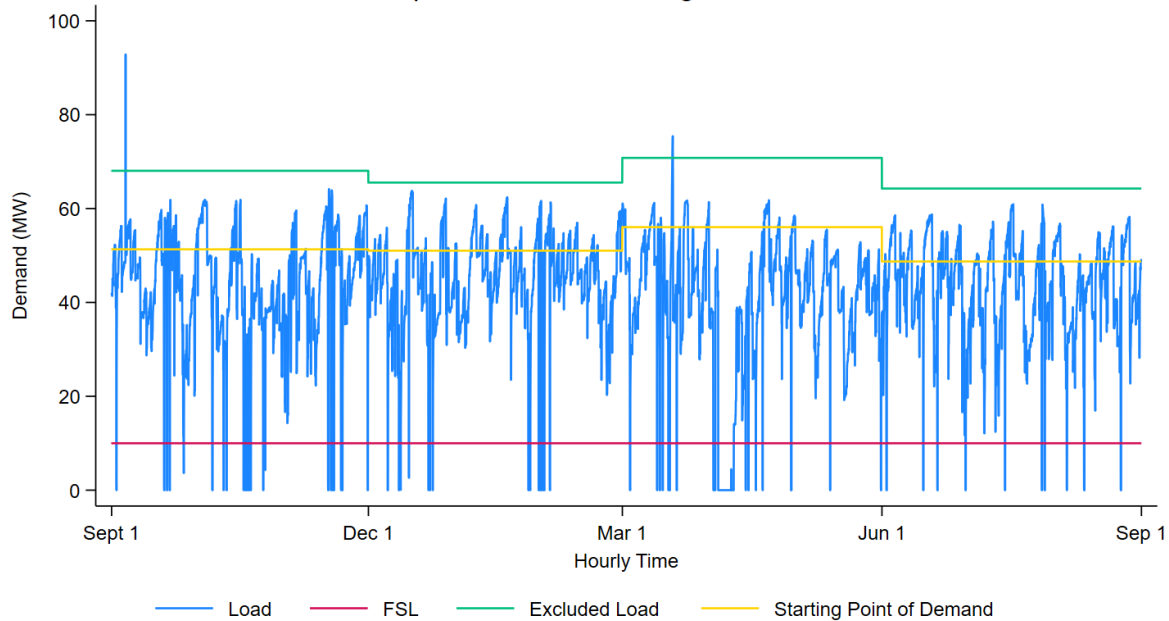
	1500	1600	1700	1800	1900	2000	2100	2200
Resource A	0	7	10	3	2	7	9	8
Resource B	10	7	1	10	1	9	8	9
Resource C	2	2	6	1	3	10	7	4

- Example of the accreditation of three resources, each with different response times, that all achieve the full demand reduction by 1900
- Here, the aggregated starting point is 23 MW (10 + 7 + 6), while the ending point is 6 MW (2 + 1 + 3) as reflected at 1900 resulting in a total Demand reduction of 17 MW
- Resource C reduced to 1 MW at 1800, however this is not included in the Demand reduction achieved as 1900 was the selected test end period
- The resource must register with at least four (4) hours notification time to reflect the 1500 starting point for Resource B

FSL Demand Resources Testing Requirements

- Aggregations may continue to use the FSL baseline
 - Each resource within the aggregation may be tested separately
- Demand reduction below the FSL does not count towards the demonstration of Demand reduction
- FSL resources are required to provide demand reduction starting from a point at least 80% of the maximum load consumed between the most recent period of September 1 through August 31 prior to the start of the PY
 - For the PY 26/27 this means Sept 1, 2024 through Aug 31, 2025
- MISO will identify the maximum Demand as follows:
 1. Calculate the mean load in each Hour of a Season
 2. Identify all Hours where Demand consumption is greater than 2 standard deviations greater than the mean and exclude these Hours
 3. Identify the Hour with the greatest Demand consumed
 4. Multiply the value identified in step 3 by 0.8 to establish the minimum starting point of the Demand reduction
- Resources desiring to use the FSL baseline that do not meet the above criteria will be required to select a different M&V baseline

Example of a resource using the FSL baseline



- So long as the test begins from a point above the yellow line and reduces Demand to or below the red line, this resource has successfully performed a real power test

Accreditation

For PY 26/27 and 27/28 only – DR/ER Reforms are NOT included

Accreditation for non-ARCs

- ARC accreditation is slightly different to ensure equitable treatment for ARCs and LSEs
- Demand Resources not using the FSL baseline will be accredited to the tested amount
 - This may be scaled up by 25% for temperature
 - Residential programs may be scaled up by an additional 25% if they have increased the number of households registered from the time the test was performed
- Demand Resources using the FSL baseline will be accredited based on the Coincident Peak Forecast
 - MISO is not making any recommendations for how the forecast is determined and MPs are free to continue to accredit these resources as they have historically
 - Testing verifies the resource can achieve its FSL no matter where its load is and is separate from accreditation
- All resources being registered as an LMR must be accounted for in the Load Forecasts and an itemized list submitted
 - This information needs to provide some mechanism to tie what is registered with what is in the load forecast and will be used to ensure no double counting occurs

Accreditation for ARCs

- To ensure ARCs cannot over register a resource or LSEs under forecast a resource, MISO has a prescribed methodology to accredit resources being registered as an ARC
- To determine the contribution of the resource to the Coincident Peak Demand forecast the following procedure is used:
 - Identify the Hour of the Coincident Peak Demand
 - For the 5 days prior to the day of the Coincident System Peak Demand, and the 5 days after the day of the Coincident System Peak Demand, determine the maximum Demand consumed in the 5-hour window centered at the Coincident Peak Hour
 - Average these values

Date	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 26	Aug 27	Aug 28	Aug 29	Aug 30	Sep 3
HE 15	101	108	110	81	120	96	100	108	78	117	113
HE 16	105	90	88	101	90	105	80	109	118	113	85
HE 17	82	111	75	93	108	121	83	120	77	78	94
HE 18	112	115	116	89	106	93	117	75	80	93	114
HE 19	101	82	105	109	125	89	80	117	92	96	100
Max Demand	112	115	116	109	125	121	117	120	118	117	114

The hours highlighted in blue are averaged to determine the Coincident Peak Demand. MPs should use these values in their forecasts for each LMR registered by an ARC. Accreditation is determined as this average less firm service level for FSL DR or as the minimum of the tested amount and this calculated value for DR not using the FSL baseline.

Replacement and DR Deferral Notice

Redlines posted to be filed for PY 26/27

LMR Replacement

- LMRs will be permitted to replace under the following conditions:
 - BTMG – any outages w/ 2-week notice, regulatory restrictions such as environmental run-time limitations, or with IMM approval
 - DR – Termination of contracts approved by states or RERRAs, change in ownership of the end use facility, or with IMM approval
- An LMR that is replaced is not subject to penalties for unavailability
- Replacement may not be used to avoid performance penalties after the fact
- LMRs will never be required to replace

Demand Resource Deferral Notice

- This has been changed to reflect MISOs seasonal construct
- Resources may defer a test and test in the Summer to register in Fall or later Seasons
 - The tests must be performed prior to the Season the resource has Cleared ZRCs
 - The test may also be used to setup resources to replace in which case the test must be performed at least 15-days prior to being used to replace
- A resource may only use the DR Deferral Notice if it can demonstrate operations have begun at the facility prior to March 1
 - An MP may submit documentation that the resource has begun operations and provide meter data no later than the start of the Planning Year demonstrating such
- Resources unable to fulfill the requirement of the Demand Resource Deferral Notice will not be permitted to replace any Cleared ZRCs and will be charged:

$$\# \text{ MWs} * \text{Days in the Season} * (ACP + \frac{1}{365} * CONE)$$

Hourly-Ahead Baseline

- Resources performance is measured based on difference between Demand when the Hour prior to the Scheduling Instruction being issued to the Hour the Scheduling Instruction is issued for
 - This means the calculation is simply how many MWs the resource can provide in real-time
- Operationally the end use customer does what they would do if using the Firm Service Level baseline
- From an offer perspective, the MP must keep track of how far above the Firm Service Level the facility is
- This baseline shifts the part of the performance risk from a reliability risk to a financial risk
 - Currently, inaccurate information is not penalized so long as the resource achieves the FSL meaning a resource capable of providing 1 MW is not penalized if offering 100 MW so long as it achieves its Firm Service Level
- This baseline is one candidate for aggregations of resources desiring to use the FSL baseline to use beginning PY 28/29 when aggregations will no longer be permitted to use the FSL baseline

Penalties

Redlines posted to be filed for PY 26/27

When Penalties are Applied

- Resources are applied when:
 - A resource says it can do value X and gives less than that amount
 - A resource says it is unavailable and is:
 1. Consuming Demand when LMRs are deployed; OR
 2. Operating above its FSL when LMRs are deployed; OR
 3. Is on outage and has not replaced or pre-scheduled an outage when LMRs are deployed
- Penalties are not applied to resources that are unavailable when:
 - A Demand Resource not consuming Demand; OR
 - Operating at or below their Firm Service Level; OR
 - Is an LMR that has replaced; OR
 - Is a BTMG that has pre-scheduled its outage (March 1 – May 15 or Sept 15 – Nov 30 for no more than 31 days); OR
 - Is a BTMG under NERC requirements to coordinate outages in CROW and is on a MISO approved CROW outage
- Penalties are not applied if a resource states it can do less than what it is registered to do – accurate real time information is the requirement, not performance to what is accredited

Updating DSRI Availability

- The Tariff requirement is to maintain accurate information for each Hour of the Season
- MISO sends out reminders as part of Capacity Advisory and higher declarations asking for MPs to update and keep up to the DSRI with accurate offers
- Information can be updated in the DSRI up to 5-minutes prior to the start of the Hour
- More information regarding the DSRI can be found on the MISO Learning Center by searching for DSRI Training
- Offers do not impact accredited values until PY 27/28 when they will be used to determine accreditation for PY 28/29

What are the Penalties?

- Penalties are broken into two parts:
 - Partial failures – defined as providing at least 25% of the required response
 - Complete failures – defined as providing less than 25% of the required response
- Penalties include a charge based on real-time LMP and an auction revenue component
 - DR will be charged based on the single worst performing Hour of the Season, measured in MW
 - BTMG will be charged based on the single worst performing Event of the Season, measured in MWh
- DRR will not be subject to auction penalties outside of Emergencies
- Resources experiencing multiple complete performance failures will be subject to disqualification
 - Disqualified resources may replace
 - If a disqualified resource does not replace, it is subject to CRNCC charges



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Overview of LMR and Demand response filings

Topic/Effort	Key Objectives of FERC Filing	Anticipated Filing Date	Anticipated Effective Date
Demand Response Participation Rules Enhancements	<ul style="list-style-type: none"> Address issues identified by FERC Office of Enforcement and IMM with respect to Demand Response Resources (DRRs) and Load Modifying Resources (LMRs) currently participating in MISO's Markets 	Filed March 21, 2025 ER25-1729	July 19, 2025 Accepted
Dual Registration of EDRs	<ul style="list-style-type: none"> Eliminate dual registration for EDRs as a LMR and/or DRR to align the incentive signals sent by the participation options 	Filed April 25, 2025 ER25-2050	July 19, 2025 Accepted
Demand Response and Emergency Resources Reforms (formerly known as LMR Reforms)	<ul style="list-style-type: none"> Improve availability, operational effectiveness, and accreditation of demand response and emergency only resources to allow earlier access during emergency conditions based on notification times Key elements: i) Participation Options, ii) Measurement & Verification Baseline methodology, iii) Accreditation, iv) Real-time availability, v) MISO Initiated Testing 	Filed April 4, 2025 ER25-1886	September 1, 2027
LMR Testing Rules	<ul style="list-style-type: none"> Provide a standard, clear testing requirement for Demand Resources participating in the PRA Resources without contracts overseen by regulatory authorities will be required to test 2026 / 2027 PY Resources without explicit testing waivers approved by regulatory authorities will be required to test in 2027 / 2028 PY 	Filed July 14, 2025 ER25-2845	July 15, 2025 Effective pending FERC approval
Energy Efficiency Filing	<ul style="list-style-type: none"> Eliminating Energy Efficiency as a Planning Resource 	Planned 2025	Dec 15, 2025
LMR Participation Rules Enhancements	<ul style="list-style-type: none"> Clarify when and how MPs can replace LMRs during a Planning Year Test Deferral 	Separate filings planned, 2025	March 1, 2026
	<ul style="list-style-type: none"> Update non-performance penalties 		June 1, 2026