

191 FERC ¶ 61,019
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Mark C. Christie, Chairman;
Willie L. Phillips, David Rosner,
Lindsay S. See, and Judy W. Chang.

Midcontinent Independent System Operator, Inc.

Docket No. ER25-579-000

ORDER ACCEPTING TARIFF REVISIONS

(Issued April 4, 2025)

1. On November 26, 2024, Midcontinent Independent System Operator, Inc. (MISO) submitted proposed revisions to its Open Access Transmission, Energy and Operating Reserve Markets Tariff (Tariff) to revise the rules governing Value of Lost Load (VOLL), Demand Curves for Operating Reserves (Operating Reserve Demand Curve or ORDC), and Emergency Demand Response (EDR) in MISO's Day-Ahead Energy and Operating Reserve Market (Day-Ahead Market) and Real-Time Energy and Operating Reserve Market (Real-Time Market).¹ As discussed below, we accept MISO's Tariff revisions,² effective September 30, 2025, as requested.

I. Background

2. On February 25, 2008, the Commission accepted MISO's proposal to establish its Ancillary Services Market (ASM), which included, among other things, the VOLL and market-wide ORDC.³

3. MISO's Tariff currently defines VOLL as "[t]he maximum value associated with the Operating Reserve Demand Curve that represents the average cost to consumers of an

¹ Capitalized terms that are not defined in this order have the meanings specified in the Tariff.

² See Appendix for eTariff records.

³ *Midwest Indep. Transmission Sys. Operator, Inc.*, 122 FERC ¶ 61,172 (2008) (2008 ASM Order).

interruption of firm demand as specified in Schedule 28.”⁴ In the 2008 ASM Order, the Commission accepted MISO’s methodology for calculating the VOLL as \$3,500/MWh.⁵

4. MISO’s current ORDC is largely defined by two steps, based on percentages of the operating reserves requirement level (in MWh) rather than a static MW value,⁶ with the two steps set at \$1,100/MWh and \$2,100/MWh.⁷ For the most extreme operating reserve deficits, MISO’s current ORDC has an upper bound at the current VOLL of \$3,500/MWh.⁸

II. Filing

A. Value of Lost Load

5. In the instant filing, MISO proposes to replace the current \$3,500/MWh VOLL with two different VOLLs: (1) a Pricing VOLL of \$10,000/MWh to be used as a price cap and an administrative price; and (2) a System VOLL of \$35,000/MWh to be used to scale the ORDC.⁹

6. MISO explains that the Pricing VOLL represents the price that consumers are willing to pay to avoid an interruption of electrical service and is mainly based on consumers with the lowest willingness to pay. MISO proposes to use the Pricing VOLL as a price cap and for administrative pricing during MISO-directed Energy Emergency Alert (EEA)-Level 3 load-shed events.¹⁰ MISO asserts that the proposed \$10,000/MWh

⁴ MISO, FERC Electric Tariff, Module A, § 1.V (Definitions) (46.0.0).

⁵ 2008 ASM Order, 122 FERC ¶ 61,172 at P 215.

⁶ *Midwest Indep. Transmission Sys. Operator, Inc.*, Docket No. ER13-921-000 (Apr. 23, 2013) (delegated order); MISO, FERC Electric Tariff, Schedule 28, (Demand Curves for Operating Reserve, Regulating and Spinning) (44.0.0).

⁷ *Midcontinent Indep. Sys. Operator, Inc.*, Docket No. ER19-328-001 (Jan. 10, 2019) (delegated order); MISO, FERC Electric Tariff, Schedule 28 (Demand Curves for Operating Reserve, Regulating and Spinning) (44.0.0).

⁸ 2008 ASM Order, 122 FERC ¶ 61,172 at P 215; MISO, FERC Electric Tariff, Schedule 28 (Demand Curves for Operating Reserve, Regulating and Spinning) (44.0.0), § III.iv.

⁹ Filing, Transmittal Letter, at 2 (Transmittal).

¹⁰ *Id.*

Pricing VOLL allows market prices to exceed the willingness to pay threshold for many loads, providing a clear financial incentive to reduce consumption and increase the availability of incremental emergency supply from resources and interchange transactions.¹¹ MISO also explains that the proposed Pricing VOLL of \$10,000/MWh, combined with the redesigned Operational Reserve Demand Curve, provides room for all pricing components (e.g., Marginal Energy Component, Marginal Congestion Component, and Marginal Loss Component) before price capping.¹²

7. MISO states that it developed the Pricing VOLL value by combining the methodology accepted by the Commission in the 2008 ASM Order and a methodology recommended by the MISO Independent Market Monitor (IMM).¹³ MISO states that this approach seeks to estimate the price at which customers prefer interruption of their electrical service instead of the marginal cost of service, taking into account such variables as market segment, temporal factors, duration and frequency of outages, and amount of advance notification of an outage. MISO explains that its analysis used the Lawrence Berkeley National Laboratory meta-analyses with MISO-specific drivers, consistent with the original determination of VOLL approach accepted by the Commission in the 2008 ASM Order and with the IMM's recommended approach. MISO further explains that this approach uses two-step regression models to estimate statistically significant outage cost functions. MISO states that, after balancing the different customer class VOLLs and prioritization during load shed events, it concluded that \$10,000/MWh is a reasonable and appropriate value for the Pricing VOLL that will generate appropriate pricing signals without being punitive.¹⁴ MISO further states that its proposed Pricing VOLL of \$10,000/MWh recognizes that MISO-directed Load Shedding will be focused on the residential class, with a one-hour-outage Summer VOLL of \$4,337/MWh, but that other load classes would inevitably be dropped, too.¹⁵

8. The System VOLL represents the composite price that consumers are willing to pay to avoid an interruption of electrical service and MISO proposes to use the System VOLL to inform the slope of the ORDC to appropriately reflect the increased possibility of MISO-directed load curtailment as an operating reserve deficiency worsens. MISO

¹¹ Filing, Tab D (Testimony of Zacharia Joundi), at 32 (Joundi Test.).

¹² Transmittal at 28-29, 32; Joundi Test. at 33.

¹³ Transmittal at 29-32.

¹⁴ Joundi Test. at 33

¹⁵ *Id.* MISO states that its updated Pricing VOLL calculation was guided by the same consumer class weightings on which the current VOLL was based, *i.e.*, 85% residential class and 15% for small commercial and industrial class. *Id.* at 31.

states that the proposed System VOLL of \$35,000/MWh is based on its analysis finding that a composite value of \$36,888/MWh represents the financial impact of shedding load across all customer classes in accordance with annual MWh consumption (using class weightings of 35% residential, 31% small commercial and industrial, and 34% large commercial and industrial).¹⁶ MISO asserts that the higher System VOLL is consistent with firm load-shedding actions taken by MISO operations during increasing operating reserve deficits, noting that all customer classes would be affected during a pervasive system outage.¹⁷ MISO notes, however, that the System VOLL is used to determine the slope of the ORDC, which reaches a maximum of \$6,000/MWh. MISO argues that the updated values will ensure that MISO's shortage pricing rules maintain and enhance compliance with the Commission's requirement¹⁸ that shortage prices reflect load's willingness to pay to avoid service interruption under shortage conditions.¹⁹

B. Operating Reserve Demand Curves

9. MISO proposes changes to the ORDC so that it will be lower for small shortages and will increase as the Loss-of-Load Probability escalates, driving prices towards the Pricing VOLL as reserves are exhausted, while not overwhelming other pricing components.²⁰ MISO contends that the proposed ORDC will better manage congestion during small shortages and will incentivize appropriate behavior from market participants. Specifically, MISO states that appropriately high prices in real-time incentivize increases in supply and decreases in consumption. Additionally, MISO notes that increased day-ahead participation by loads will allow MISO to economically commit additional longer-lead time resources and schedule additional imports.²¹

10. MISO proposes to establish a decreased, two-step floor for the ORDC. Specifically, MISO proposes that the ORDC will be set at \$600/MWh, rather than the

¹⁶ *Id.* at 30, 36; Filing, Tab C (Testimony of Todd Ramey), at 15 (Ramey Test.).

¹⁷ Transmittal at 36; Joundi Test. at 55; Filing, Tab E (Affidavit of David B. Patton, Ph.D.) at 10 (Patton Aff.).

¹⁸ See *Wholesale Competition in Regions with Organized Elec. Mkts.*, Notice of Proposed Rulemaking, 122 FERC ¶ 61,167 (2008).

¹⁹ Transmittal at 28; Joundi Test. at 31.

²⁰ Transmittal at 34.

²¹ Ramey Test. at 18.

current \$1,100/MWh, until reserves fall below the Most Severe Single Contingency.²² MISO further proposes that, in the event that reserves fall below the Most Severe Single Contingency, the ORDC will be set at \$1,100/MWh rather than the current \$2,100/MWh, after which the price will increase based on the probability of shedding load multiplied by the System VOLL until it reaches MISO's proposed cap of \$6,000/MWh.²³

11. MISO explains that it selected the proposed floors to prevent undesirably low prices during declared system emergencies and to allow for better congestion management. Specifically, MISO states that it selected the \$600/MWh floor to ensure that the operating reserve price does not fall below the \$500/MWh cap on the short-term reserve offer floor plus the \$100/MWh Contingency Reserve Offer Cap. Similarly, MISO explains that the \$1,100/MWh floor ensures that the operating reserve price does not fall below the Emergency Tier II Offer Floor²⁴ of \$1,000/MWh plus the \$100/MWh Contingency Reserve Offer Cap. MISO asserts that the proposed floors will better help congestion management, among other things. MISO explains that, for the majority of operating reserve shortages, MISO is proposing to lower the ORDC because the vast majority of operating reserve shortages are small, where the ORDC would remain at or near one of the proposed floors.

12. MISO proposes to determine the sloped portion of the ORDC by multiplying the System VOLL and a newly proposed Loss of Load Probability Curve, which reflects the probability that MISO will have to shed load. MISO states that the Loss of Load Probability Curve is determined by performing a Monte Carlo analysis on historical net load and generator outage and derate data to simulate loss of load probabilities for varying operating reserve levels.²⁵ MISO contends that the proposed changes to the ORDC better reflect the probability of multiple, simultaneous contingencies and uncertainties. MISO states that the current ORDC does not fully reflect the reliability conditions of the grid, as the ORDC is largely defined by two steps (\$1,100/MWh and

²² Transmittal at 35; Joundi Test. at 52.

²³ Transmittal at 26, 39.

²⁴ The MISO Tariff defines Emergency Tier II Offer Floor, in part, as the "minimum Proxy Offer established by the Transmission Provider, as specified in Schedule 29A [of the Tariff], following the declaration of maximum generation emergency event, step 2 as specified in the Transmission Provider's Emergency Operating Procedures." MISO, FERC Electric Tariff, Module A, § 1.E (Definitions) (87.0.0).

²⁵ Transmittal at 36; Joundi Test. at 55.

\$2,100/MWh), and prices do not increase as an operating reserve deficiency worsens.²⁶ MISO explains that it proposes a sloped demand curve to better account for the increased probability of shedding load as cleared operating reserves decrease, while specifying upper and lower bounds for the ORDC to satisfy other price formation objectives.

13. Finally, MISO proposes a \$6,000/MWh upper limit for the ORDC. MISO explains that its analysis showed that the loss of load probability only reached around 60% as cleared operating reserves approached zero. Thus, MISO contends that it is reasonable that the ORDC should not exceed 60% of the Pricing VOLL, even when cleared reserves are minimal.²⁷ MISO explains that a \$6,000/MWh cap on the ORDC allows sufficient room for other pricing components—such as generator offers, four other reserve demand curves, congestion, and losses—to function ahead of MISO-directed Load Shedding, which triggers the updated \$10,000/MWh Pricing VOLL.²⁸

C. Circuit Breakers

14. MISO proposes to add market price “circuit breakers” that will reduce the Pricing VOLL when capacity shortage conditions—which lead to a MISO-declared EEA-Level 3 Capacity Emergency—last for an extended period. First, MISO proposes that, at the end of four hours of real-time EEA-Level 3 load-shedding, the real-time Pricing VOLL will be reduced to \$5,000/MWh. MISO explains that it derived this value similar to the way it determined the Pricing VOLL but instead looked at the value of lost load during EEA-Level 3 events lasting between four and 12 hours.²⁹ MISO states that the capacity shortage’s duration will not be deemed ended, but only paused, when MISO declares an end to the EEA-Level 3 and declares that capacity shortage conditions remain. MISO asserts that the shortage’s duration is deemed ended when MISO declares an end to capacity shortage conditions.³⁰ Second, MISO proposes that, when shortage conditions that led to the EEA-Level 3 persist when the Day-Ahead Market closes at 10:30 Eastern Prevailing Time (EPT), the day-ahead and real-time Pricing VOLLs will be reduced to \$5,000/MWh for the next Operating Day.³¹

²⁶ Ramey Test. at 14; Joundi Test. at 54.

²⁷ Joundi Test. at 52.

²⁸ Transmittal at 35.

²⁹ *Id.* at 33.

³⁰ *Id.*

³¹ *Id.* at 34.

15. Third, MISO proposes that, when the shortage conditions that led to the EEA-Level 3 continue to any additional Day-Ahead Market closing, the day-ahead and real-time Pricing VOLLs will be reduced to \$2,000/MWh for the next Operating Day.³² Fourth, MISO proposes that, when the day-ahead and/or real-time Pricing VOLLs have been reduced by a circuit breaker, they will cease to apply after MISO has declared an end to the capacity shortage. MISO states that, at that point, the Pricing VOLL, as a potentially applicable administrative price, will be reset to \$10,000/MWh. MISO explains that, if the capacity shortage termination occurs before 10:30 EPT, the day-ahead and real-time Pricing VOLLs, as potentially applicable administrative prices, will be reset to \$10,000/MWh at the end of the current Operating Day; if after 10:30 EPT, the Pricing VOLLs will be reset to \$10,000/MWh at the end of the next Operating Day.³³

D. Emergency Demand Response Offer Cap

16. MISO states that its EDR product allows MISO to call on EDRs during an EEA-Level 2, EEA-Level 3, or any other type of emergency events.³⁴ MISO explains that Schedule 30 of the Tariff currently defines the EDR Offer Cap as the VOLL. MISO asserts that potential EDR offers capped at a much higher Pricing VOLL would overstate the relative value of EDRs compared to other types of supply resources. Therefore, MISO proposes to fix the EDR Offer Cap at the current level of \$3,500/MWh, without tying it to the VOLL. MISO states that it intends to work with stakeholders to improve how demand response can effectively be offered/utilized during emergency shortage conditions; as part of that discussion, MISO is contemplating the eventual removal of the EDR category, as recommended by the IMM.³⁵

E. Day-Ahead Price-Sensitive Bid and Virtual Demand Bid Caps

17. MISO proposes to remove as unnecessary the \$2,000/MWh cap for Day-Ahead Price-Sensitive Bids and Virtual Demand bids. MISO states that it imposed these caps when it complied with Order No. 831,³⁶ which required a \$2,000/MWh hard cap on

³² *Id.*

³³ *Id.*

³⁴ MISO states that EDRs have only been deployed once, on September 24, 2014, and make up a very small volume of MISO's available resources, often totaling less than 500 MW, with notification times averaging over four hours. *Id.* at 40.

³⁵ *Id.*

³⁶ *Offer Caps in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, Order No. 831, 157 FERC ¶ 61,115 (2016), *order on reh'g & clarification*, Order No. 831-A, 161 FERC ¶ 61,156 (2017).

energy offers, but contends that Order No. 831 did not require this bid cap. MISO states that without this removal, Fixed Demand Bids can clear at any price up to the existing VOLL and that there is no policy reason for Price Responsive Demand bids to be capped differently from Fixed Demand Bids.³⁷ The IMM contends that both these types of demand must be permitted to reflect their expectations of real-time prices in their day-ahead demand bids, arguing that setting bid caps lower than the Pricing VOLL could encumber legitimate day-ahead demand bids when the probability of real-time shortages are very high. The IMM notes that this removal implicitly caps these bids at the Pricing VOLL of \$10,000/MWh.³⁸

F. Waiver of Prior Notice

18. MISO requests waiver of the Commission's prior notice regulation requiring that proposed revisions to rate schedules and tariffs be tendered for filing with the Commission not less than 60 days nor more than 120 days prior to the requested effective date.³⁹ MISO states that its requested effective date—September 30, 2025—is more than 120 days from the tender date of its filing. MISO asserts that waiver is appropriate because it needs adequate time, after acceptance of the proposed Tariff revisions, to make and test software and make other operational adjustments needed to implement its proposal.⁴⁰

III. Notice and Responsive Filings

19. Notice of MISO's filing was published in the *Federal Register*, 89 Fed. Reg. 95762 (Dec. 3, 2024), with interventions and protests due on or before December 17, 2024. On November 27, 2024, the Commission extended the comment due date to January 10, 2025.⁴¹

20. Notices of intervention were filed by: the Illinois Commerce Commission, the Louisiana Public Service Commission, the Missouri Public Service Commission, and the Public Utility Commission of Texas. Timely motions to intervene were filed by: Ameren Services Company (on behalf of Ameren Illinois Company, Ameren Transmission

³⁷ Transmittal at 25.

³⁸ Patton Aff. ¶ 29.

³⁹ 18 C.F.R. § 35.3(a)(1) (2024).

⁴⁰ Transmittal at 44.

⁴¹ *Midcontinent Indep. Sys. Operator, Inc.*, Errata Notice, Docket No. ER25-579-000 (issued Nov. 27, 2024).

Company of Illinois, and Union Electric Company); American Electric Power Service Corporation (on behalf AEP Indiana Michigan Transmission Company, Inc., AEP Energy Partners, Inc., and AEP Retail Energy Partners LLC); Association of Businesses Advocating Tariff Equity; Calpine Corporation; Coalition of MISO Transmission Customers; Constellation Energy Generation, LLC; Entergy Services, LLC (on behalf of Entergy Arkansas, LLC, Entergy Louisiana, LLC, Entergy Mississippi, LLC, Entergy New Orleans, LLC, and Entergy Texas, Inc.); Hoosier Energy Rural Electric Cooperative, Inc.; Illinois Industrial Energy Consumers; Illinois Municipal Electric Agency; Louisiana Energy Users Group; MidAmerican Energy Company; NIPSCO Large Customer Group; Public Citizen, Inc.; Shell Energy North America (US), L.P.; Solar Energy Industries Association; Texas Industrial Energy Consumers; Upper Michigan Energy Resources Corporation, Wisconsin Electric Power Company, and Wisconsin Public Service Corporation; Vistra Corp. and Dynegy Marketing and Trade, LLC; and Wolverine Power Supply Cooperative, Inc.

21. A notice of intervention and comments were filed by the Organization of MISO States, Inc. (OMS). Timely motions to intervene and comments were filed by Cooperative Energy and Rainbow Energy Center, LLC (REC). An out-of-time motion to intervene and comments were filed by the Coalition of Midwest Power Producers, Inc. (COMPP).

22. On January 31, 2025, MISO filed an answer to the comments.

A. OMS Comments

23. OMS states that it “cautiously supports” MISO’s proposal conditioned on the inclusion of the circuit breaker mechanism and with the expectation that MISO will promptly review application of the new VOLL and ORDC structure after each energy shortage situation in which the Pricing VOLL is invoked.⁴² OMS considers it reasonable to consider updating VOLL and the ORDC if a circuit breaker mechanism is included. However, OMS asserts that some of its members believe that outage cost metrics for the residential retail class need further evaluation or continued monitoring as this new, higher shortage pricing scheme is implemented. While OMS supports these energy market improvements that send improved signals for long-term planning, OMS states that some members noted that, since the MISO footprint is predominantly vertically integrated, energy market signals may only incent new capacity in the limited jurisdictions open to retail competition.

B. COMPP Comments

24. COMPP states that MISO’s proposed changes will correctly signal the onset of tight operating conditions to market participants and ultimately improve market reliability

⁴² OMS Comments at 6.

and efficiency.⁴³ COMPP explains that the current MISO VOLL of \$3,500/MWh was established at the launch of MISO's ASM in 2009 and has not been updated since. COMPP asserts that, since 2009, the potential direct and indirect costs to residential, commercial, and industrial customers that would result from a disruption in electricity supply have significantly increased and that this requires a higher pricing VOLL than what was implemented in 2009.⁴⁴

25. Additionally, COMPP states that it is encouraged that MISO may soon eliminate the EDR category. COMPP contends that "EDR, which has only been deployed once since its inception, is unnecessary, should be eliminated, and can be replaced by existing Load Modifying Resource and Demand Response programs and services."⁴⁵

C. REC Comments

26. REC asserts that MISO's proposed revisions to shortage pricing rules will send appropriate signals to market participants before and after shortage conditions, resulting in increased supply and reduced demand, and urges the Commission to accept the proposal. REC contends that it is imperative that the MISO markets send accurate price signals as the generation mix changes, large load demand increases, extreme weather events increase, and electrification accelerates. REC states that MISO undertook a five-year stakeholder process and included the IMM in that process to develop the proposed market rule improvements.⁴⁶ REC asserts that involving stakeholders has resulted in a set of market enhancements that will significantly improve the economic incentives to reduce the number and severity of energy and reserve shortages.⁴⁷

D. Cooperative Energy Comments

27. Cooperative Energy details four concerns with MISO's proposed Tariff revisions. First, Cooperative Energy contends that MISO's Planning Resource Auction (PRA) already provides revenues for capacity with the goal of incentivizing resource additions. Cooperative Energy contends that MISO's proposal would add a reactive and punitive component to the market design to solve an issue that is already and more appropriately addressed through an existing, proactive approach. Cooperative Energy argues that

⁴³ COMPP Comments at 2.

⁴⁴ *Id.* at 3.

⁴⁵ *Id.*

⁴⁶ REC Comments at 3-4.

⁴⁷ *Id.* at 4 (citing Ramey Test. at 13:5-14:2).

MISO has not provided evidence that the PRA is not functioning as intended and argues that MISO's recent improvements to the PRA should be allowed to mature before MISO adjusts other mechanisms such as the VOLL.⁴⁸

28. Second, Cooperative Energy asserts that high emergency pricing has the potential to bankrupt generator owners, particularly rural electric cooperatives. Cooperative Energy states that, during Winter Storm Uri, high prices and penalties charged by the Electric Reliability Council of Texas (ERCOT) forced several market participants to burden their customers with high long-term costs and even declare bankruptcy. While Cooperative Energy acknowledges MISO's proposed "circuit breaker" mechanism, Cooperative Energy argues that even four hours at the proposed Pricing VOLL can have devastating financial impacts on cooperatives. Cooperative Energy states that the economic risk associated with its largest capacity resource will increase from \$7.7 million to \$22 million for the four hours of applicability.⁴⁹ Cooperative Energy contends that North American Electric Reliability Corporation's (NERC) Long-Term Reliability Assessment reported that MISO is at a high risk of experiencing shortfalls during even normal summer and winter hours, which underscores the need for reliable generation.⁵⁰ Cooperative Energy asserts that pricing that can lead to bankruptcy of generator owners during supply constraints beyond their control does not accomplish this goal.

29. Third, Cooperative Energy argues that MISO's proposal incentivizes generators to offer units into the Day-Ahead Market at elevated prices. Specifically, Cooperative Energy asserts that MISO's must-offer requirements for capacity resources that are cleared in the PRA result in the majority of generation units clearing in the Day-Ahead Market during extreme weather events, rendering them unable to capture any benefits from high real-time locational marginal prices. Thus, Cooperative Energy contends that generators will offer units in the Day-Ahead Market at higher costs to hedge against these disproportionate risks and benefits.⁵¹

30. Finally, Cooperative Energy argues that, "in the event Real-Time prices spike to VOLL, MISO market participants using their load forecasts can risk losses of millions of

⁴⁸ Cooperative Energy Comments at 3.

⁴⁹ *Id.* at 4-5.

⁵⁰ *Id.* at 5 (citing NERC, *2024 Long-Term Reliability Assessment* (Dec. 2024), [https://www.nerc.com/pa/RAPA/ra/Reliability Assessments DL/NERC_Long Term Reliability Assessment_2024.pdf](https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf)).

⁵¹ *Id.* at 6.

dollars per hour.”⁵² Cooperative Energy asserts that market participants are likely to require more load in the Day-Ahead Market, which will force MISO to award excessive day-ahead generation and unnecessarily raise costs. Cooperative Energy argues that such increases in costs would undoubtedly result in a windfall to some suppliers at the expense of load-serving entities and their customers.⁵³

E. MISO Answer

31. MISO reiterates that the proposed Tariff revisions are intended to establish appropriate price signals before and during reserve shortage conditions to increase energy production and reduce consumption to avoid or mitigate shortage conditions.⁵⁴ MISO states that the proposed revisions are part of the Market Redefinition pillar of its Reliability Imperative, which “seeks to enhance and optimize MISO’s markets to ensure continued reliability and efficiency while enabling the changing resource mix, responding to more frequent extreme weather events, preparing for increasing electrification and ensuring accurate pricing of energy and reserves.”⁵⁵

32. MISO contends that its proposal is not duplicative of its PRA. First, MISO contends that, while the PRA’s goal is to ensure a sufficient pool of resources to meet projected demand during peak conditions, the proposed adjustments to VOLL and ORDC are more near-term and “incent real-time actions by generation and load resources.”⁵⁶ MISO additionally contends that its proposal would provide for appropriate shortage pricing in energy markets that would support, but not duplicate, capacity market mechanisms.⁵⁷ MISO explains that revenue will be considered in the determination of the Net Cost of New Entry (CONE) beginning with the 2025-2026 Planning Year. MISO states that, if resources collect greater Inframarginal Rents⁵⁸ in the energy markets,

⁵² *Id.*

⁵³ *Id.*

⁵⁴ MISO Answer at 2.

⁵⁵ *Id.*

⁵⁶ *Id.* at 8.

⁵⁷ *Id.*

⁵⁸ The MISO Tariff defines Inframarginal Rents as “estimated revenues from the Transmission Provider’s Energy and Operating Reserves Markets in excess of production costs for a Generation Resource.” MISO, FERC Electric Tariff, Module A, § 1.I (Definitions) (50.0.0).

that will reduce the Net CONE in subsequent years, which in turn would reduce capacity value in the capacity market, as Reliability Based Demand Curves are based on Net CONE values. MISO contends that this dynamic would reduce any possibility of duplicate price signals.⁵⁹

33. In response to Cooperative Energy's argument that similar actions taken by ERCOT led to bankruptcies of rural electric cooperatives following extreme weather events, MISO states that the circuit breaker mechanism was proposed in response to similar concerns. MISO contends that it is unlikely that MISO's markets would experience the same outcomes as ERCOT, noting that ERCOT operates a transmission system isolated from the Eastern and Western Interconnections. MISO points out that its resource mix and the greater diversity of its geographic area limited VOLL shortage pricing during Winter Storm Uri to approximately two hours.⁶⁰

34. MISO states that the proposed revisions direct higher costs to market participants that deviate negatively from day-ahead awards and are inflexible to high real-time prices. MISO explains that market participants can employ several methods of avoiding high costs, such as hedging risks through the Day-Ahead Market, increasing real-time demand-side management programs, and proactively reducing loads.⁶¹

35. MISO agrees with Cooperative Energy that MISO's proposal should increase day-ahead prices when real-time shortages are possible or likely, but MISO contends that this is a benefit of the proposal. MISO argues that these prices would better reflect the reliability risks associated with reserve shortages and lead to better day-ahead schedules and decisions by market participants.⁶² MISO concedes that higher generator offers would only be a concern if day-ahead offer prices exceeded competitive offer price levels; however, MISO states that it has measures to protect against speculative actions, and it notes that sufficiently high offers are subject to review and mitigation by the IMM.⁶³

36. MISO contends that Cooperative Energy's argument that the proposed revisions would lead to excess day-ahead generation and unnecessarily raise costs misunderstands MISO's energy markets. MISO argues that market participants requesting more

⁵⁹ MISO Answer at 9.

⁶⁰ *Id.* at 10.

⁶¹ *Id.* at 11.

⁶² *Id.* at 13.

⁶³ *Id.* at 14-15.

generation is an efficient market response. MISO states that the scheduling of more generation due to anticipated emergencies or uncertainty is part of the process of minimizing risk of real-time deficiencies and volatile shortage pricing. MISO further notes that this behavior will reduce the need for MISO to commit additional resources after the Day-Ahead Market closes.⁶⁴

IV. Discussion

A. Procedural Matters

37. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2024), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

38. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d), we grant COMPP's late-filed motion to intervene, given its interest in this proceeding, the early stage of this proceeding, and the absence of undue prejudice or delay.

39. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2024), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We accept MISO's answer because it has provided information that assisted us in our decision-making process.

B. Substantive Matters

40. We find MISO's proposed Tariff revisions to be just and reasonable and not unduly discriminatory or preferential, and we therefore accept them, effective September 30, 2025, as requested.⁶⁵ We find that MISO's proposal to revise its VOLL and ORDC will give market participants efficient financial incentives to respond to scarcity and shortage conditions and act in ways that support system reliability in MISO by either increasing supply or reducing demand. These reforms may also result in more efficient unit commitment in MISO by reducing the need for MISO to commit additional resources after the close of the Day-Ahead Market.

41. We accept MISO's proposal to derive its new Pricing and System VOLLs using the same calculation methodology, which the Commission previously accepted, with updated willingness to pay data. We find that MISO's use of two VOLLs, whereby the

⁶⁴ *Id.* at 16.

⁶⁵ We grant waiver of the Commission's prior notice requirement for good cause shown. *See* 18 C.F.R. § 35.11 (2024).

System VOLL is used to scale the sloped portion of the ORDC, and the Pricing VOLL is used as to set the price during MISO-directed Load Shedding events, is just and reasonable because the two VOLL values serve different purposes. We consider the use of the System VOLL to be a reasonable value to scale the Loss of Load Probability Curve to calculate the ORDC, as the System VOLL is a reasonable estimate of the financial impact of shedding load across all MISO customer classes. Similarly, we find it appropriate to use the Pricing VOLL to as an administrative price during load-shed events, which reasonably estimates the value residential loads place on avoiding load shedding. We continue to find MISO's approach to balance the VOLLs of different customer classes and the relative prioritization of customer classes in load shedding events is reasonable.⁶⁶ Further, we find that MISO has sufficiently justified its proposal to lower the ORDC floors, which MISO explains will help with congestion management when MISO is experiencing small Operating Reserve shortages. Finally, we find that MISO's proposal to remove the \$2,000/MWh bid caps in the day-ahead market for Price-Sensitive Demand and Virtual Demand to be just and reasonable, as this proposal will allow for such day-ahead bids to better reflect expectations of real-time prices.

42. We disagree with Cooperative Energy's argument that MISO's proposal creates a duplicative incentive. The PRA ensures resource adequacy for the Season and Planning Year and provides a price signal to encourage the long-term development and retainment of resources where needed. While an appropriate VOLL does guide investment and retirement decisions in the long term, we emphasize that shortage price signals in the Day-Ahead and Real-Time markets, which are developed through the VOLL and ORDC, are also near-term signals to incent real-time actions by generation and demand resources during the Operating Day, or the day before the Operating Day, to avoid potential shortage conditions.⁶⁷ Further, as MISO explains in its answer, if resources collect greater Inframarginal Rents in the energy markets, that will reduce Net CONE in subsequent years, which in turn would reduce capacity value in the capacity market, as Reliability Based Demand Curves are based on Net CONE values.⁶⁸

43. As to Cooperative Energy's concern with the impact of high long-term costs on customers and potential bankruptcy of utilities, we find that MISO's proposal strikes a reasonable balance by more accurately reflecting load's willingness to pay and by providing protection to consumers by limiting the duration of their exposure to higher prices that could result from its proposal. We note that the circuit breaker mechanism,

⁶⁶ MISO explains that residential customers, comprising 35% of MISO's total load, has a markedly lower VOLL than commercial and industrial loads. Joundi Test. at 33.

⁶⁷ Transmittal at 23.

⁶⁸ MISO Answer at 9.

upon which OMS conditioned its support of MISO's proposal, will protect customers from experiencing significant economic harm from prolonged shortage conditions where there is no commensurate benefit.

44. We are not persuaded by Cooperative Energy's assertion that MISO's proposal incentivizes generators to offer units into the Day-Ahead Market at elevated costs. While we agree with Cooperative Energy that offer prices can increase under MISO's proposal, we believe that this results in a more efficient Day-Ahead Market clearing price that will more accurately reflect expected conditions in the Real-Time Market. As MISO notes, shortage pricing that would efficiently increase Real-Time Market prices should also increase Day-Ahead Market prices when shortages are possible.⁶⁹ Additionally, we note that a resource's offers are subject to review and mitigation by the IMM.⁷⁰

45. Finally, we find Cooperative Energy's assertion that MISO's proposal will incentivize excess day-ahead generation and unnecessarily high costs to be unpersuasive. We agree with MISO that, during periods of anticipated emergency conditions or increased uncertainty, it is desirable to clear adequate energy in the Day-Ahead Market to minimize the risks of potential real-time deficiencies and volatile shortage pricing.⁷¹ We find that MISO's proposal will help address periods of higher reliability risk and uncertainty and may result in more efficient unit commitment by reducing the need for MISO to commit additional resources after the close of the Day-Ahead Market.

The Commission orders:

MISO's proposed Tariff revisions are hereby accepted, effective September 30, 2025, as discussed in the body of this order.

By the Commission.

(S E A L)

Carlos D. Clay,
Deputy Secretary.

⁶⁹ *Id.* at 13.

⁷⁰ See generally MISO, FERC Electric Tariff, Module D, §§ 64.1.1 (Thresholds for Identifying Physical Withholding) (59.0.0), 64.2.1 (Market Impact Thresholds) (45.0.0), 64.2.2 (Price Impact Analysis) (31.0.0).

⁷¹ MISO Answer at 16.

Appendix – eTariff Records

- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [1.E, Definitions - E \(89.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [1.L, Definitions - L \(48.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [1.V, Definitions - V \(47.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [39.1.1, Day-Ahead Energy and Operating Reserve Market Trading Deadli \(41.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [39.2.2, Demand Bid Rules in the Day-Ahead Energy and Operating Reser \(34.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [39.2.4, Specifications for Virtual Bids \(34.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [39.2.9, Day-Ahead Energy and Operating Reserve Market Process \(62.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [39.2.10, Shortage Conditions in the Day-Ahead EORM \(45.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [40.2.15, Real-Time Energy and Operating Reserve Market Process \(48.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [40.2.17, Calculation of Real-Time Ex Post LMPs and Ex Post MCPs \(57.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [40.2.20, Capacity Shortage Conditions in the Real-Time Energy and Ope \(51.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [SCHEDULE 28, Demand Curves for Operating Reserve, Regulating and Spinning \(45.0.0\)](#).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, [SCHEDULE 30, Emergency Demand Response Initiative \(38.0.0\)](#).

Document Content (s)

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