189 FERC ¶ 61,065
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

Midcontinent Independent System Operator, Inc. Docket Nos. ER24-1638-000
ER24-1638-001

ORDER ACCEPTING PROPOSED TARIFF REVISIONS

(Issued October 25, 2024)

1. On March 28, 2024, as amended on August 26, 2024, Midcontinent Independent System Operator, Inc. (MISO) filed, pursuant to section 205 of the Federal Power Act (FPA)[1] and section 35.12 of the Commission's regulations,[2] proposed revisions to its Open Access Transmission, Energy and Operating Reserve Markets Tariff (Tariff)[3] to establish a two-step direct loss of load (DLOL) accreditation methodology for the purposes of accrediting all Capacity Resources[4] except External Resources,[5] as well as establishing the Planning Reserve Margin Requirements (Reserve Requirements).[6] As

[1] 16 U.S.C. § 824d.

[2] 18 C.F.R. § 35.12 (2024).

[3] Capitalized terms not otherwise defined herein have the meanings ascribed to them in the Tariff.

[4] A Capacity Resource is defined as the "Generation Resources, Demand Response Resource-Type I, Demand Response Resource-Type II, Dispatchable Intermittent Resources, External Resources, Intermittent Generation, or Electric Storage Resources that are available to meet Demand." MISO, FERC Electric Tariff, Module A, § 1.C (72.0.0).

[5] An External Resource is defined as a "generator located outside of the metered boundaries of the MISO Balancing Authority Area." MISO, FERC Electric Tariff, Module A, § 1.E (88.0.0).

[6] *See* Appendix for eTariff records.

discussed below, we accept MISO's proposed Tariff revisions, effective September 1, 2024, as requested.

I. Background

2. MISO accredits Capacity Resources that are Demand Response Resources or Generation Resources but not Dispatchable Intermittent Resources, Intermittent Generation, Electric Storage Resources (ESR), External Resources, or Use Limited Resources under Schedule 53 of its Tariff.[7] A resource's accreditation under Schedule 53 is based on the resource's average availability throughout the year, weighted toward hours that represent periods of higher risk, i.e., Resource Adequacy (RA) Hours (RA Hours). There is a 65-hour target for RA Hours for each Season, which represents the tightest 3% of hours in the Season. RA Hours include all hours in the Season with declared MaxGen Events and the remaining hours with the tightest operating margin, subject to a maximum operating margin threshold of 25%.

3. MISO accredits Schedule 53 Resources for each Season using a two-tiered structure based on the Intermediate Seasonal Accredited Capacity (ISAC), which is determined using the Real-Time offered availability, capped at the resource's Generation Verification Test Capacity (GVTC) value,[8] during RA Hours (Tier 2) and Non-RA Hours (Tier 1) for that Season over the most recent three years. The ISAC value is the weighted average of the resource's average availability from the two tiers, where Tier 1 availability is weighted at 20% and Tier 2 availability is weighted at 80%.[9] The ISAC value is then converted to a Schedule 53 Resource's final Seasonal Accredited Capacity (SAC) value by applying a system-wide Unforced Capacity (UCAP)/ISAC ratio.[10]

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[7] MISO, FERC Electric Tariff, Schedule 53 (39.0.0). Resources accredited under Schedule 53 are called Schedule 53 Resources.

[8] GVTC is "[t]he maximum output (MW) that a Generation Resource, External Resource or [Behind the Meter Generation] can sustain over the specified period of time, if there are no equipment, operating, or regulatory restrictions, minus any Capacity utilized for On-Site Self-Supply, as detailed in the Business Practices Manual for Resource Adequacy." *Id.* at Module A, § 1.G (41.0.0).

[9] The 2025/2026 Planning Year is the first year where the Tier 2 weighting reaches the full 80% based on a phased approach. *Id.* at Schedule 53.

[10] The UCAP/ISAC ratio is the sum of MISO's fleet-wide UCAP accreditation of Schedule 53 Resources divided by the sum of MISO's fleet-wide ISAC accreditation of Schedule 53 Resources. *Id.*

4. MISO accredits wind resources using an average Effective Load Carrying Capability (ELCC) methodology.[11] MISO calculates a system-wide average ELCC for wind resources, which is then allocated to individual wind resources based on their actual performance during the top eight daily peak hours of each Season. Wind resources with no commercial operation history receive a wind capacity credit equivalent to the MISO system-wide capacity credit from the seasonal ELCC study for their initial Planning Year, and thereafter metered data is used to calculate the resource's future capacity credit. Existing solar resources receive capacity credit based on their actual performance during seasonal peak hours, whereas new solar resources receive a seasonal class average value of 50% for the Summer, Fall, and Spring Seasons, and 5% for the Winter Season for their initial Planning Year.[12] Similarly, existing ESRs receive capacity credit based on their actual performance during seasonal peak hours, and new ESRs are accredited the seasonal class average value for storage for their initial Planning Year.[13]

II. MISO's Accreditation Proposal

5. MISO states that sizable segments of dispatchable thermal generation are aging into retirement and being replaced with increasing amounts of highly weather dependent, intermittent wind and solar resources.[14] MISO asserts that these trends are shifting the nature of system risk and creating challenges to maintaining reliable system operations. MISO also states that these conditions, combined with shifting load profiles, have created what North American Electric Reliability Corporation (NERC) has characterized as a "hyper-complex risk environment."[15] Therefore, MISO explains, its existing resource accreditation methods are no longer sufficiently robust to capture those risks and send the proper signals to Load Serving Entities (LSE) and state regulators participating in

[11] MISO Resource Adequacy Business Practices Manual (BPM) at Appendix A.

[12] New solar resources are those with less than 30 days of metered values, which will then receive the seasonal class average for their initial Planning Year. *See id.* at Appendix V.

[13] *Id.*, § 4.2.9.4.

[14] Transmittal at 2.

[15] *Id.* at 2-3 (citing NERC, Challenges to Reliability and Resilience, 5 (Dec. 2023), https://cdn.misoenergy.org/20231207%20Board%20of%20Directors%20Item%2007a%20NERC%20CEO%20 Update631092.pdf).

integrated resource planning processes for the investment and retirement of resources needed to maintain reliability.[16]

6. MISO explains that it currently uses different accreditation methods for thermal, wind, solar, and storage resources.[17] MISO states that, although there are historical reasons for MISO's development and use of different accreditation methodologies, this can lead to inaccurate, inconsistent, and sometimes overstated accreditation results. MISO asserts that its proposed accreditation methodology is the robust tool that it needs to meet its reliability imperative.[18] According to MISO, its proposal will better align accreditation across all relevant resources with observed resource availability during the periods of highest risk.[19] MISO asserts that its proposal will award more relative accreditation to resources that have properly mitigated risks during each Season and will ensure that resources committed during the seasonal Auction receive accreditation based on their reliability contribution during the times of highest need.

7. Beginning with the 2028/2029 Planning Year, MISO proposes to accredit all Capacity Resources, except External Resources, using a two-step resource accreditation methodology that measures a resource's availability when reliability risk is the greatest based on both a probabilistic and deterministic approach.[20] For Step 1, MISO proposes to measure a resource's expected marginal contribution to reliability using Resource Class-level performance during the loss of load expectation (LOLE) analysis.[21] MISO explains that the LOLE analysis includes a Monte Carlo probabilistic simulation using 30 years of correlated load and weather data for each of five load forecasts that incorporates economic uncertainties and associated probabilities into the forecasts.[22] Resource Class-level UCAP will be determined by calculating the combined expected availability and performance of all resources within that Resource Class.[23] For Step 2, MISO proposes to allocate the Resource Class-level UCAP among the individual resources in the Resource

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[16] *Id.* at 2.

[17] *Id.* at 8.

[18] *Id.* at 17.

[19] *Id.* at 8.

[20] *Id.* at 3.

[21] *Id.* at 3, 8.

[22] *Id.* at 3.

[23] MISO, Proposed FERC Electric Tariff, Schedule 53A, (32.0.0), § II.

Class.[24] MISO proposed to do so by using the deterministic element of resource accreditation established in Schedule 53, which is based on historical resource-level performance during Tier 1 and Tier 2 RA Hours.[25]

8. According to MISO, its proposed accreditation methodology balances a range of reliability risks in the planning and operations horizons by incorporating forward-looking probabilistic analysis (Step 1) and measuring a resource's performance during recent periods of high system risk (Step 2).[26] For purposes of its probabilistic analysis, MISO proposes to calculate expected resource availability and performance during Critical Hours, which MISO defines as all loss of load hours as well as low margin hours—those hours where available generation in excess of load is less than or equal to 3% of load in that hour.[27] According to MISO, its proposal to measure resource availability during Critical Hours in its probabilistic analysis is within the marginal ELCC accreditation framework used by PJM Interconnection, L.L.C. (PJM) and New York Independent System Operator, Inc. (NYISO).[28]

9. MISO requests an effective date of September 1, 2024 to accommodate the indicative reporting requirement included in MISO's proposal in advance of the 2025/2026 Planning Year.[29] MISO states that although it proposes to implement the DLOL methodology for the 2028/2029 Planning Year, it will begin publishing estimated Resource Class-level accreditation values on September 1, 2024.[30] MISO asserts that it is producing these indicative results during the three-year transition period at the request of stakeholders and that the three-year transition period is reasonable and appropriate to allow stakeholders to adapt to the new methodology before requirements and resource accreditation are impacted by the proposed change. Additionally, MISO states that it is

[24] *Id*.

[25] Transmittal at 3-4.

[26] *Id.* at 4.

[27] MISO, Proposed FERC Electric Tariff, Schedule 53A, (32.0.0), § II.

[28] Transmittal at 4.

[29] *Id.* at 2.

[30] *Id.* at 2, 5.

committed to publishing longer term Resource Class-level indicative values (i.e., 5-year and 10-year forward).[31]

III. Notices of Filings and Responsive Pleadings

A. MISO Filing

10. Notice of the filing was published in the *Federal Register*, 89 Fed. Reg. 23,593 (Apr. 4, 2024), with interventions and protests due on or before April 29, 2024.

11. Notices of intervention and timely motions to intervene were filed by: Advanced Energy United; ALLETE, Inc.; Alliant Energy Corporate Services, Inc. (Alliant Energy); Ameren Services Company (Ameren);[32] American Clean Power Association and Clean Grid Alliance; American Electric Power Service Corporation (AEP);[33] American Municipal Power, Inc. (AMP); Arevon Energy, Inc. (Arevon); Arkansas Electric Cooperative Corporation (AECC); Arkansas Public Service Commission (Arkansas Commission); Association of Businesses Advocating Tariff Equity; Calpine Corporation (Calpine); Clean Wisconsin; Clearway Energy Group LLC; Cleco Power LLC (Cleco); Coalition of Midwest Power Producers, Inc.; Coalition of MISO Transmission Customers; Constellation Energy Generation, LLC (Constellation Energy); Consumers Energy Company (Consumers Energy); Cooperative Energy; Cordelio Services LLC (Cordelio); Council of the City of New Orleans (City of New Orleans); DTE Electric Company (DTE Electric); East Texas Electric Cooperative, Inc. (ETEC); Electric Power Supply Association; Entergy Services, LLC (Entergy), on behalf of the Entergy Operating Companies;[34] Fresh Energy; Great Lakes Utilities, Missouri Joint Municipal Electric Utility Commission (MJMEUC), Missouri River Energy Services (MRES), Southern Minnesota Municipal Power Agency (SMMPA), and WPPI Energy; Illinois Commerce Commission; Illinois Industrial Energy Consumers; Illinois Municipal Electric Agency (IMEA); Indiana Municipal Power Agency (IMPA); Indiana Office of Utility Consumer Counselor; Indiana Utility Regulatory Commission; Louisiana Energy

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[31] *Id.* at 5.

[32] Ameren submitted on behalf of its affiliated public utility operating companies Union Electric Company, Ameren Illinois Company, and Ameren Transmission Company of Illinois (collectively, the Ameren Companies).

[33] AEP submitted on behalf of its affiliates AEP Indiana Michigan Transmission Company, Inc., AEP Energy Partners, Inc., and AEP Retail Energy Partners LLC.

[34] The Entergy Operating Companies include: Entergy Arkansas, LLC; Entergy Louisiana, LLC; Entergy Mississippi, LLC; Entergy New Orleans, LLC (Entergy New Orleans); and Entergy Texas, Inc.

Users Group; Louisiana Public Service Commission (Louisiana Commission); Madison Gas and Electric Company; Manitoba Hydro; Michigan Public Power Agency; MidAmerican Energy Company (MidAmerican); Michigan Public Service Commission (Michigan Commission); Minnesota Department of Commerce; Minnesota Public Utilities Commission; Missouri Public Service Commission (Missouri Commission); MISO Transmission Owners;[35] Mississippi Public Service Commission (Mississippi Commission); Natural Resources Defense Council and the Sustainable FERC Project; NextEra Energy Resources, LLC; Northern Indiana Public Service Company (NIPSCO) Large Customer Group;[36] NRG Business Marketing LLC; Organization of MISO States, Inc. (OMS); Orsted Wind Power North America LLC; Otter Tail Power Company; Public Citizen, Inc.; Public Service Commission of Wisconsin (Wisconsin Commission); Public Utility Commission of Texas; Rainbow Energy Center (Rainbow Energy); Sierra Club; Solar Energy Industries Association (SEIA); Southern Renewable Energy Association; Vistra Corp. and Dynegy Marketing and Trade, LLC (Vistra); Wisconsin Electric Power Company, Wisconsin Public Service Corporation, and Upper Michigan Energy Resources Corporation; and Xcel Energy Services Inc. (Xcel Energy).[37]

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[35] MISO Transmission Owners include: Ameren, as agent for the Ameren Companies; American Transmission Company LLC; Big Rivers Electric Corporation; Central Minnesota Municipal Power Agency; City Water, Light & Power (Springfield, IL); Cleco; Cooperative Energy; Dairyland Power Cooperative; Duke Energy Business Services, LLC for Duke Energy Indiana, LLC; ETEC; the Entergy Operating Companies; Great River Energy; GridLiance Heartland LLC; Hoosier Energy Rural Electric Cooperative, Inc.; Indiana Municipal Power Agency; Indianapolis Power & Light Company; International Transmission Company; ITC Midwest LLC; Lafayette Utilities System; Michigan Electric Transmission Company, LLC; MidAmerican; Minnesota Power (and its subsidiary Superior Water, Light & Power); MRES; Montana-Dakota Utilities Co.; Northern Indiana Public Service Company LLC; Northern States Power Company, a Minnesota corporation, and Northern States Power Company, a Wisconsin corporation, subsidiaries of Xcel Energy Services Inc.; Northwestern Wisconsin Electric Company; Otter Tail Power Company; Prairie Power, Inc.; Southern Illinois Power Cooperative; Southern Indiana Gas & Electric Company; SMMPA; Wabash Valley Power Association, Inc.; and Wolverine Power Supply Cooperative, Inc.

[36] NIPSCO Large Customer Group's motion to intervene was filed by Lewis & Kappes, P.C.

[37] Xcel Energy submitted on behalf of its utility operating company affiliates Northern States Power Company, a Minnesota corporation, and Northern States Power Company, a Wisconsin corporation.

12. On April 26, 2024, members of the Coalition of Utilities with an Obligation to Serve[38] filed a motion requesting a 16-day extension of time, from April 29, 2024 to May 15, 2024, to respond to MISO's filing.

13. On April 29, 2024, protests were filed by: AECC; Arkansas Commission; Clean Energy Parties;[39] Consumers Energy; Cordelio; DTE Electric; Entergy and Cleco;[40] IMEA; MidAmerican; Midwest TDUs;[41] MISO Cities and Communities;[42] OMS; Public Interest Organizations;[43] and Vistra. Also on April 29, 2024, Constellation Energy filed comments in support.

14. On April 30, 2024, Alliant Energy and the Michigan Commission filed protests.

15. On May 2, 2024, the Commission issued a notice of extension of time to extend the deadline for submitting comments and interventions to and including May 15, 2024.

16. On May 15, 2024, Arevon and the Mississippi Commission filed protests. On May 16, 2024, Minnesota Power filed a protest.

17. On June 7, 2024, MISO filed a motion for leave to answer and an answer (MISO June 7 Answer). On June 24, 2024, Midwest TDUs and Public Interest Organizations filed motions for leave to respond and responses to the MISO June 7 Answer. On July 2,

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[38] Coalition of Utilities with an Obligation to Serve include: Alliant Energy; Arkansas Commission; Louisiana Commission; Mississippi Commission; Minnesota Power, Inc. (Minnesota Power); Superior Water, Light & Power; Upper Michigan Energy Resources Corporation; Wisconsin Electric Power Company; Wisconsin Public Service Corporation; and Xcel Energy.

[39] Clean Energy Parties include: Advanced Energy United; American Clean Power Association; Clean Grid Alliance; Invenergy, LLC; NextEra Energy Resources, LLC; SEIA; and Southern Renewable Energy Association.

[40] On April 30, 2024, Entergy and Cleco submitted an errata to their protest.

[41] Midwest TDUs include: AMP, Great Lakes Utilities, IMPA, MJMEUC, MRES, SMMPA, and WPPI Energy.

[42] MISO Cities and Communities include: City of Minneapolis, Minnesota; City of Des Moines, Iowa; City of New Orleans, Louisiana; City of Saint Paul, Minnesota; County of Dane, Wisconsin; and City of St. Louis, Missouri.

[43] Public Interest Organizations include: Sierra Club, Natural Resources Defense Council, Sustainable FERC Project, Fresh Energy, and Clean Wisconsin.

2024, MidAmerican filed a motion for leave to answer and an answer to the MISO June 7 Answer. On July 9, 2024, MISO filed a motion for leave to answer and an answer to protesters' answers (MISO July 9 Answer). On July 12, 2024, Consumers Energy filed a motion for leave to respond and a response to the MISO June 7 Answer. On July 19, 2024, MISO filed a motion for leave to answer and an answer to Consumer Energy's July 12, 2024 response (MISO July 19 Answer).

B. Deficiency Letter and Responsive Pleadings

18. On July 25, 2024, Commission staff issued a letter informing MISO that the filing was deficient and requesting additional information (Deficiency Letter). On August 26, 2024, MISO submitted a response to the Deficiency Letter (Deficiency Response).

19. Notice of the Deficiency Response was published in the *Federal Register*, 89 Fed. Reg. 70,620 (Aug. 30, 2024), with interventions and protests due on or before September 16, 2024.

20. On September 16, 2024, protests to MISO's Deficiency Response were filed by: Clean Energy Parties; Cordelio; Entergy and Cleco; Midwest TDUs; and Public Interest Organizations. On September 18, 2024, Rainbow Energy filed a motion to file comments out-of-time and comments.

21. On October 4, 2024, MISO filed a motion for leave to answer and an answer (MISO October 4 Answer).

IV. Discussion

A. Procedural Matters

22. 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.

23. 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 or an answer unless otherwise ordered by the decisional authority. We accept the answers filed in this proceeding because they have provided information that assisted us in our decision-making process.

B. Substantive Matters

1. Accreditation

a. Overview of Design Details

24. MISO proposes to implement a two-step DLOL-based accreditation methodology to accredit resources participating in the Auction and to calculate Reserve Requirements that LSEs participating in MISO's markets must meet to be considered resource adequate for each Season during the applicable Planning Year.[44] MISO states that its proposed accreditation methodology provides direct alignment between the system-wide LSE Reserve Requirements, risk, availability, and accreditation.[45] MISO also states that it provides a wider range of simulated conditions that better account for infrequent risks without penalizing individual resources.

25. MISO explains that the two-step approach can be described as first determining the size of a pie and then, second, divvying up the pie.[46] MISO asserts that its proposed accreditation methodology aligns operational needs with non-discriminatory market and planning requirements and results in transparent market prices that reflect marginal contributions to reliability during the highest risk hours.[47]

26. MISO states that its proposed accreditation methodology is similar to PJM's marginal ELCC methodology, which also uses a single model to both set requirements and accredit resources.[48] MISO contends that, similar to PJM's marginal ELCC accreditation methodology, MISO's proposed accreditation methodology sets requirements and accredits resources pursuant to a framework that seeks to assess the patterns, drivers, and probabilities of reliability risk across all hours of the year.[49]

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[44] Transmittal at 1.

[45] *Id.* at 17.

[46] *Id.* at 15.

[47] *Id.* at 16.

[48] *Id.* (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080, *reh'g denied*, 186 FERC ¶ 62,168 (2024)).

[49] *Id.* at 17 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 1).

i. Step 1 – Class-Level

27. MISO states that Step 1, the probabilistic element used to perform Resource Class-level UCAP calculations, aligns the class-level accreditation of all Schedule 53A Resources with the determination of LSEs' Reserve Requirements.[50] MISO also states that Resource Class-level UCAP values do not depend on the number and type of Resource Classes; they only depend on the definition of the subject class. MISO explains that, in Step 1, MISO performs a Monte Carlo probabilistic simulation using 30 years of correlated load and weather data for each of five load forecasts to calculate Resource Class-level UCAP.

28. MISO's Executive Director of Market and Grid Strategy, Zakaria Joundi, explains in his testimony that the Resource Class-level accreditation is calculated by first identifying the lowest 3% margin hours for each Season, where margin equals total available generation plus net imports minus load.[51] Mr. Joundi states that these hours include both loss of load hours, when margins are negative, and low margin hours, where there was no loss of load, but margin was equal to or less than 3%.[52] Mr. Joundi states that the hour with the maximum positive margin from all the low margin hours for each Season across all 30 weather years is selected as the "max margin" such that there are four total max margin values, one for each Season.[53]

29. Mr. Joundi explains that, for each hour, the effective margin is calculated relative to the max margin hour (effective margin = max margin – margin) to ensure that all hours are positive for a weighted sum operation, and that the hour with the largest unserved energy has the greatest weight, while the hour with the largest margin receives the smallest weight.[54] Mr. Joundi further explains that all loss of load hours are included in the final calculation, regardless of the number of loss of load hours, because it is vital to fully capture all the expected reliability risks observed in the probabilistic model.[55] Mr. Joundi also states that, if there are fewer than 1,950 loss of load hours per Season, MISO proposes to use low margin hours for the Resource Class-level accreditations, but cap the

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[50] *Id.* at 19.

[51] *Id.*; Prepared Direct Testimony of Zakaria Joundi at 22 (Joundi Test.).

[52] Transmittal at 19; Joundi Test. at 24.

[53] Transmittal at 20; Joundi Test. at 26.

[54] Transmittal at 20; Joundi Test. at 26.

[55] Transmittal at 20; Joundi Test. at 26.

total number of Critical Hours at 1,950 hours.[56] Mr. Joundi explains that the number of Critical Hours are capped to create a balance between improving numerical instability from including a low number of hours and diluting the contribution of loss of load hours.[57]

30. Mr. Joundi states that, after the Critical Hours for each Season are identified and the 1,950-hour cap is applied as necessary, the hourly weights are calculated using the probability associated with the load forecast error scenario within the probabilistic model that the selected Critical Hour belongs to, and the effective margin for each hour calculated.[58] Mr. Joundi explains that the weights are then normalized so that the sum equals one. Finally, Mr. Joundi explains that the total Resource Class availability is calculated for each Critical Hour, and those values are averaged for each Season using the hourly weights, thus resulting in the Resource Class-level accreditation, referred to as the Resource Class-level UCAP in the Tariff.[59]

ii. Step 2 – Resource-Level

31. MISO states that Step 2 is largely based on the current Schedule 53. MISO explains that Step 2 uses the availability of Schedule 53A Resources during Tier 1 and Tier 2 RA Hours for the past three years for allocating Resource Class-level UCAP to individual Schedule 53A Resources within each Resource Class.[60] MISO explains that Tier 1 availability is based on each resource's real-time offered availability during normal operating conditions, and Tier 2 availability is based on each resource's real-time offered availability during hours with the most difficult operating conditions, including declared maximum generation events. MISO asserts that Tier 2 is more heavily weighted so that most of a resource's accreditation will be based on its availability during times of reliability need.

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[56] Transmittal at 20; Joundi Test. at 27.

[57] Joundi Test. at 30.

[58] *Id.* at 27; Transmittal at 20. According to Mr. Joundi, the load forecast error values are included in the probabilistic analysis to account for economic load uncertainty. Joundi Test. at 28 (citing MISO, *LOLE Study Report for the 2023/2024 Planning Year*, § 3.3.2 (updated May 3, 2023), https://cdn.misoenergy.org/PY%202023-2024%20LOLE%20Study%20Report626798.pdf).

[59] Joundi Test. at 28; Transmittal at 21.

[60] Transmittal at 21.

32. According to MISO, the number of Tier 2 RA Hours in a Season could exceed the target 65 hours when a high number of hours are accrued due to declared system or subregional emergencies.[61] MISO explains that, if there are fewer than 65 Tier 2 RA Hours in a Season, seasonal Resource Class-level UCAP as a percentage of Resource Class-level Installed Capacity (ICAP) is used for resource availability during those deficient hours.[62] MISO also asserts that all other foundational aspects of the current Schedule 53, including outage exemptions, tier weighting, and lead time considerations remain unchanged.

33. MISO states that Tier 1 and Tier 2 RA Hours ensure that individual resources are compared to other resources within their Resource Class when the system experiences the highest operational risk.[63] MISO explains, for example, that resources in the Solar Resource Class may have no output during evening risk hours, but all resources within that Resource Class would be affected in the same manner and therefore, the allocation to individual resources within the Resource Class would not be affected. MISO further explains that resources with better performance during Tier 1 and Tier 2 RA Hours receive a larger slice of the overall Resource Class-level UCAP value. MISO also states that the individual resource SAC is calculated as the Resource Class-level UCAP multiplied by the ratio of the individual resource's ISAC to the Resource Class-level ISAC.

b. Accreditation Methodology

i. Comments and Protests

34. The Michigan Commission, DTE Electric, Constellation Energy, and Vistra support MISO's proposed two-step accreditation methodology.[64] The Michigan Commission states that the explanation provided by MISO and its supporting testimonies give the Michigan Commission confidence that the new accreditation methodology will more accurately align with a marginal ELCC framework and more sufficiently meet resource adequacy needs.[65] Vistra states that MISO's proposal will: (1) assist in sending improved price signals for retaining existing generation and incentivizing new generation when and where it is needed most across the region; (2) more appropriately accredit

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[61] *Id.*

[62] *Id.* at 22.

[63] *Id.*

[64] *See, e.g.*, Michigan Commission Comments at 5-6; Vistra Protest at 1-4.

[65] Michigan Commission Comments at 5-6.

individual resources and Resource Classes for their contributions during high-risk resource adequacy hours; and (3) more accurately reflect each individual resource's seasonal contribution to maintaining system reliability by establishing a more equitable and uniform accreditation methodology for all resources.[66] Vistra also states that it agrees with MISO's approach to "align[] the times of system risk and need with the contribution of each Resource Class during those same periods" because it is crucial for understanding the future reliability impact of adding or removing a single resource from the same Resource Class, as well as the effects Resource Classes will have on each other.[67]

35. Constellation Energy states that MISO's proposal to evaluate the availability of resources during Critical Hours and to use the same methodology to calculate LSE Reserve Requirements that it uses to accredit Resource Classes is consistent with Commission-approved marginal ELCC methodologies in PJM and NYISO.[68] Specifically, Constellation Energy points to the Commission's finding for PJM that "[u]sing the same model for determining the amount of capacity required and the amount of capacity a resource is capable of providing is a reasonable modeling methodology that allows risk to be evaluated on a more granular level and provides for consistency between the system's resource adequacy requirements and resource accreditation to meet those requirements."[69] Constellation Energy explains that weather events have caused challenges in ensuring sufficient capacity during all Seasons and that load growth due to increased electrification and other factors is changing MISO's load characteristics.[70] Constellation Energy also asserts that MISO's proposal prudently addresses operating challenges caused by an evolving resource mix, changing load demands, extreme weather concerns, and other factors and risks.[71]

36. DTE Electric asserts that MISO's proposal will communicate more accurate price signals and better incentivize resource planning across the MISO footprint.[72] DTE

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[66] Vistra Protest at 1-3.

[67] *Id.* at 4 (citing Joundi Test. at 73).

[68] Constellation Energy Comments at 5-6 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080; *N.Y. Indep. Sys. Operator, Inc.*, 179 FERC ¶ 61,102 (2022)).

[69] *Id.* at 6 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 177).

[70] *Id.* at 2 (citing Transmittal at 6).

[71] *Id.* at 2-4.

[72] DTE Electric Protest at 6-8.

Electric states that MISO's proposal modernizes accreditation and acknowledges that the "worst" hour is shifting, fluctuating, and becoming more uncertain.[73] According to DTE Electric, annually analyzing the current system to identify the high-risk periods before accrediting resources according to their contribution during such periods is an appropriate methodology and will drive stakeholders across MISO to plan for and build resources that will ultimately support system reliability.[74] DTE Electric contends that MISO's proposed accreditation methodology better models and communicates system risks and the ability of various types of resources to meet and mitigate those risks.[75] DTE Electric explains that MISO's proposal identifies the ability of Resource Classes in aggregate to meet system needs and accredits individual resources according to their relative performance within their respective Resource Class.

37. Constellation Energy and DTE Electric assert that MISO's proposal will provide consistency between and among Resource Classes.[76] Constellation Energy states that MISO's current accreditation framework, which applies different accreditation methodologies to thermal, wind, solar, and storage resources, results in inconsistent evaluation and is limited to assessing past performance.[77] DTE Electric asserts that MISO's proposed accreditation methodology is resource-agnostic and eliminates using different accreditation approaches for different resource types.[78]

38. The Arkansas Commission and the Mississippi Commission raise concerns that the marginal framework underpinning the proposed methodology will exacerbate the volatility of accreditation for newly built resources.[79] The Arkansas Commission argues that the volatile accreditation for such resources will force states with renewable portfolio standards to acquire excess capacity, which will result in higher rates for customers. The Mississippi Commission contends that volatile resource accreditation values will require states and LSEs to overbuild generation in order to avoid capacity deficiency penalties.

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[73] *Id.* at 6-7.

[74] *Id.* at 7.

[75] *Id.* at 8.

[76] *Id.* at 7-8; Constellation Energy Comments at 4-5.

[77] Constellation Energy Comments at 4 (citing Joundi Test. at 9-10).

[78] DTE Electric Protest at 7-8 (citing Affidavit of David B. Patton at 13 (Patton Affidavit)). Dr. David B. Patton is the President of Potomac Economics Ltd., MISO's Independent Market Monitor (Market Monitor).

[79] Arkansas Commission Protest at 2; Mississippi Commission Protest at 2.

According to the Mississippi Commission, because renewables will receive so little credit, LSEs will either construct more thermal generation or keep generation on-line and operating that would have otherwise been retired.[80]

39. The Arkansas Commission requests that the Commission direct MISO to engage with stakeholders before each Planning Year to address the impacts of the DLOL methodology, specifically the LOLE methodology, on their resources' ability to meet their respective Planning Reserve Margins.[81]

40. Arevon argues that MISO's proposed accreditation methodology will lead to inefficient price signals in the market because the proposed accreditation methodology relies on incorrect inputs.[82] Specifically, Arevon contends that the proposed accreditation methodology wrongly assumes that the future loss of load risk will be mitigated because it was mitigated in the past. Arevon explains that the LOLE portfolio only mitigates risk when resources in the portfolio accept a must-offer obligation in the Auction, which is not guaranteed. Arevon asserts that relying on this flawed assumption distorts investment signals, which will negatively impact the accreditation of the resources that MISO is relying on to mitigate prompt-year risk. Arevon states that this devaluation of capacity leaves resources with few to no incentives to continue to provide capacity and will ultimately diminish system reliability, contrary to the purpose of capacity accreditation. Arevon adds that, in the absence of adequate compensation for resources, the capacity market may clear at higher prices, which will distort the market's ability to send accurate price signals.[83]

41. Arevon asserts that MISO's proposal to accredit Resource Classes based on their predicted availability during Critical Hours will unfairly compensate resources for their contribution to the prompt year.[84] Arevon explains that, while Critical Hours are meant to represent hours in which the LOLE model is unable to prevent loss of load or near loss of load, the LOLE model is "sized" to sufficiently limit loss of load in the prompt year.[85] Arevon states that Critical Hours capture future risk rather than risk in the prompt year, which has already been mitigated by the LOLE model. Therefore, according to Arevon,

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[80] Mississippi Commission Protest at 2.

[81] Arkansas Commission Protest at 3.

[82] Arevon Protest at 7.

[83] *Id.* at 8.

[84] *Id.* at 4.

[85] *Id.* at 5.

MISO's proposed methodology will reward resources that respond to future risks rather than resources that are available in the prompt year.

42. Arevon argues that the DLOL accreditation methodology is different than the marginal ELCC methodologies accepted for PJM and NYISO in several important ways. Arevon explains that marginal ELCC methodologies calculate resource class-level accreditations directly by running successive LOLE studies; one with a base portfolio and one with the base portfolio plus an incremental amount of capacity of the resource class being studied. Arevon states that marginal ELCC methodologies then attempt to allocate the resource class-level accreditation to individual units in the resource class in proportion to their contribution to the class total. Arevon states that, in contrast, MISO's proposal calculates the Resource Class-level accreditation using one set of hours (Critical Hours) and allocates the Resource Class-level accreditation on a different set of hours (RA Hours).[86]

43. Arevon contends that, under the DLOL accreditation methodology, resources' individual accreditations are not based on the extent to which they contributed to the class total, as they are in PJM and NYISO. Arevon argues that this results in an accreditation methodology that is arbitrary and does not accredit resources in proportion to their contribution to meeting resource adequacy requirements. Arevon further argues that this mismatch in allocation of accreditation exacerbates the market signal issues that Arevon attributes to the proposed methodology.[87] Arevon also states that this allocation of the Resource Class-level accreditation unduly discriminates against resources that are accredited for less than their contribution to the Resource Class-level accreditation. Finally, Arevon claims that MISO is effectively incentivizing investment in future resources by inadequately compensating existing resources for their contribution to reliability.

44. Midwest TDUs contend that MISO's proposed Tariff language does not specify that seasonal Resource Class-level UCAP is used to backfill where a Tier 2 RA Hour deficiency exists in a Season. Midwest TDUs explain that a key difference from the current Schedule 53 approach is the use of seasonal data to backfill deficient Tier 2 RA Hours in a Season, rather than annual average availability that is not likely to capture the variability in performance from Season to Season, particularly for intermittent resources.[88] Midwest TDUs state that, although the use of seasonal data to backfill any Tier 2 RA Hour deficiency is an improvement over the current accreditation methodology, the proposed Tariff language does not indicate that the Resource Class-

[86] *Id.* at 9-10.

[87] *Id.* at 11.

[88] Midwest TDUs Protest at 27.

level UCAP used is from the Season for which the deficiency exists; instead, the Tariff language refers generally to Resource Class-level UCAP as a percentage of Resource Class-level ICAP.[89] Midwest TDUs argue that MISO should correct this mismatch in a future filing seeking to implement a more developed and supported DLOL methodology.

ii. MISO June 7 Answer

45. MISO disagrees that a marginal accreditation methodology will contribute to volatile capacity accreditation values for newly built resources and will cause states with renewable portfolios to procure resources in excess of what is needed.[90] MISO states that its Market Monitor found no evidence to support the claim that marginal accreditation will be volatile and that the "marginal capacity value should rise and fall gradually with the entry and exit of classes of resources whose availability is correlated."[91] MISO further notes that its Market Monitor states that the possible change in accreditation values is not a sign of volatility but rather a reflection of the changing reliability value that new resources bring to the system.[92]

46. With respect to the excess procurement argument, MISO refers to testimony provided by Zachary Ming, Director at Energy and Environmental Economics, Inc., who states that "realignment around [C]ritical [H]ours will create appropriate signals for resources that will incentivize efficient behavior, ultimately minimizing the costs of reliability."[93] Additionally, MISO explains that the DLOL framework is "inherently designed to adapt to changing system conditions as they evolve over time, creating a framework that is sustainable in the long run."[94] MISO also states that its proposed DLOL accreditation methodology is designed to send accurate market signals that will incentivize efficient behavior by accrediting resources that can meet higher risk hours.

47. MISO states that the Commission accepted NYISO's marginal ELCC framework using similar reasoning, finding that "NYISO's proposed marginal capacity accreditation approach will send a more accurate investment signal to market participants about the

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[89] *Id.* at 27-28.

[90] MISO June 7 Answer at 26.

[91] *Id.* (citing Patton Affidavit at 10).

[92] Patton Affidavit at 10.

[93] MISO June 7 Answer at 27 (citing Testimony of Zachary Ming at 33 (Ming Test.)).

[94] *Id.* (citing Ming Test. at 33).

reliability value of various resource types . . . . This signal will guide more efficient entry decisions, as it will help investors understand the reliability impacts of adding incremental capacity to the NYISO system."[95] MISO also states that the Commission listed the benefits of a marginal framework when it accepted PJM's marginal ELCC framework, noting that it would incorporate risk of correlated outages, reflect the availability of dual fuel resources, account for the lower reliability value of highly correlated resources, and accredit resources within a resource class with identical performance characteristics equivalently.[96]

48. MISO states that Arevon mischaracterizes the purpose for which MISO will use the LOLE model and fails to acknowledge Step 2 of the DLOL methodology in determining accreditation values. MISO explains that the DLOL-based methodology is a blended approach whereby accreditation is based upon both expected performance during projected probabilistic risk periods and actual performance during RA Hours. MISO argues that this approach to resource accreditation and establishing requirements is just and reasonable, as it incorporates a wide range of future risk profiles while also recognizing actual performance.[97]

iii. Deficiency Response and Responsive Pleadings

49. In response to a question requesting that MISO clarify whether the same seasonal Resource Class-level UCAP to be used for the deficient seasonal RA Hours is the same seasonal Resource Class-level UCAP for the Season with the deficient number of RA Hours, MISO responds in the affirmative and proposes clarifying revisions to section IV of Schedule 53A to that effect.[98]

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[95] *Id.* (citing *N.Y. Indep. Sys. Operator, Inc.*, 179 FERC ¶ 61,102 at P 80).

[96] *Id.* at 27-28 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 42).

[97] *Id.* at 21.

[98] Deficiency Response at 19 (quoting MISO, Proposed FERC Electric Tariff, Schedule 53A, (32.0.0), § IV) ("To address the Seasonal RA Hour Deficiency, a seasonal Resource Class-level UCAP as a percentage of the corresponding seasonal Resource Class-level ICAP will be multiplied by the Resource's ICAP and the product will be applied for purposes of determining ISAC for only the deficient Seasonal RA Hours.").

50. Midwest TDUs state that MISO's proposed Tariff revisions that confirm MISO would use seasonal Resource Class-level UCAP to backfill deficient seasonal RA Hours adequately address their concern.[99]

iv. Commission Determination

51. We find that MISO's proposed DLOL accreditation methodology is just and reasonable and not unduly discriminatory or preferential. We find that MISO has demonstrated that the DLOL methodology captures a range of risks in the planning and operations horizons, aligns operational needs with non-discriminatory market and planning requirements, and will result in transparent market prices that reflect marginal contributions to reliability during highest risk hours.

52. Regarding arguments that MISO's proposal is different than NYISO's and PJM's marginal ELCC methodologies, we note that the Commission has accepted a variety of capacity accreditation methodologies to date and has explained that there "is no single established just and reasonable ELCC approach."[100] Although protesters take issue with various individual design choices underlying the DLOL accreditation methodology, as discussed below, we believe that MISO's proposal reflects a reasonable balance of a range of complex tradeoffs that are inherent to any capacity accreditation methodology that includes probabilistic and deterministic elements.[101] Further, we find that MISO has provided a reasonable explanation and support for these design choices and tradeoffs.

53. We disagree with the Arkansas Commission and the Mississippi Commission that the proposed DLOL accreditation methodology will create an unreasonable amount of accreditation volatility. We agree with MISO and the Market Monitor that there is no evidence that the proposal will exacerbate the volatility of accreditation for newly built resources such as solar resources; the Arkansas Commission and the Mississippi Commission provide no evidence in support of this claim. Additionally, as the Market Monitor notes, changing accreditation values that reflect a resource's changing marginal reliability contributions within the system are not a sign of unreasonable volatility. Further, as the Market Monitor explains, MISO's proposal recognizes the diminishing marginal returns of surplus resources as the resource mix changes over time, which should send accurate price signals that will prevent over-saturation of one resource type, as well as encourage investment in diverse resource types. Finally, we note that MISO's proposal appears to mitigate volatility concerns by using 30 years of weather data to run

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[99] Midwest TDUs Response to MISO Deficiency Response at 10-11.

[100] *PJM Interconnection, L.L.C.*, 176 FERC ¶ 61,056, at P 37 (2021).

[101] *See id.*

multiple simulations, applying a 20% weighting to Tier 1 Non-RA Hours, and including low margin hours, not just loss of load hours.

54. We find Arevon's argument that the proposed accreditation methodology will unfairly reward resources that respond to future risks rather than the prompt year to be unfounded. MISO's Auction remains a prompt-year Auction. Under Step 1, MISO proposes to model existing resources under five different load forecast scenarios to assess prompt year risk. Moreover, although MISO proposes for Critical Hours to include low margin hours as well as loss of load hours, the DLOL accreditation methodology is a reasonable approach to incentivize resources to be available during times of greatest system need, as further discussed below in section IV.B.3.c.

55. Further, we are unconvinced by Arevon's arguments that the proposed accreditation methodology fails to accredit a resource in proportion to its contribution to resource adequacy and that its "mismatched allocation" of accreditation is unduly discriminatory. Specifically, we do not believe that for MISO's proposal to be just and reasonable and not unduly discriminatory or preferential that MISO must examine the exact same hours in Steps 1 and 2. Rather, we find that MISO has sufficiently supported its proposal to examine the roughly 1,950 Critical Hours, which are meant to represent the expected hours of greatest risk, to determine the Resource Class-level UCAP, and then allocate that accreditation to individual resources based on *actual* (not expected) performance during *actual* observed hours of greatest risk. While it is true that RA Hours consider actual emergencies whereas Critical Hours consider expected loss of load events, we find that both concepts reasonably represent the hours that are determinative of a resource's expected contribution to resource adequacy.

56. We address protests relating to specific aspects of MISO's proposal, as well as concerns from commenters who generally support MISO's proposal, below.

c. Critical Hours, Weights, and 1,950-Hour Cap

i. Comments and Protests

57. DTE Electric states that it supports MISO's approach to include low margin hours within Critical Hours, given that MISO received and incorporated stakeholder feedback for this concept, but notes that MISO should continue to work with stakeholders to continually assess and potentially refine the selected weighting methodology.[102] The Arkansas Commission contends that MISO should not limit the number of Critical Hours to 1,950 hours in a single Season because weighting the loss of load hours more than the low margin hours eliminates the need for a cap. The Arkansas Commission requests that the Commission direct MISO to include all Critical Hours, finding MISO's explanation

[102] DTE Electric Company Protest at 10 (citing Transmittal at 33).

that hours are capped to balance numerical instability and dilute the contribution of loss of load hours and that the 65 Tier 2 RA Hours forms the basis for the cap to be insufficient.[103]

58. Public Interest Organizations argue that MISO's proposal to assign more weight to some Critical Hours than others is flawed.[104] Public Interest Organizations contend that MISO has not justified the weighting methodology for Critical Hours.[105] Public Interest Organizations state that MISO does not explain the reason for adding weights, how MISO chose to weight hours, how significant the weights need to be, or even the drawbacks of focusing on a limited number of hours or the uncertainty of relying on a probabilistic model to predict reliability risk.[106]

59. Public Interest Organizations argue that MISO justifies the choice of 1,950 hours as the cap for the number of Critical Hours in a Season (unless the number of loss of load Hours exceeds 1,950 hours, in which case no cap applies) based on "the logic of 65 Tier 2 [RA Hours] per Season from the current Schedule 53 calculations," and "MISO selected 65 hours times 30 weather years, which equals 1,950 hours per Season."[107] Public Interest Organizations argue that MISO's number of Critical Hours will be somewhere from 0.002% to 0.01% of the total number of modeled hours for a given Season, and that this discrepancy, which gives significantly more weight to risky hours in the Resource Class performance evaluation than in the individual resource performance evaluation, has not been justified by MISO. Public Interest Organizations claim that MISO's proposal to apply weights to all Critical Hours, including low margin hours, based on each modeled hour's margin's distance from positive 3%, will have the effect of weighting the hours with the most negative margins at around 10 times the weight of low margin hours.[108]

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[103] Arkansas Commission Protest at 4.

[104] Public Interest Organizations Protest at 22.

[105] *Id.* at 25, 32.

[106] *Id.* at 33 (citing MISO, *Resource Adequacy Subcommittee: Accreditation Reform (RASC-2020-4 and 2019-2) (20240117),* https://www.misoenergy.org/engage/stakeholder-feedback/2024/rasc-accreditation-reform-rasc-2020-4and-2019-2-20240117 (last visited Apr. 26, 2024) (Feb. 7, 2024 comment of State Regulatory Authorities); Affidavit of Anna Sommer at 6-7).

[107] *Id.* at 36 (quoting Joundi Test. at 30).

[108] *Id.* at 38.

60. OMS argues that MISO's proposed weighting methodology does not consider duration of events, nor has MISO demonstrated that hours identified by the LOLE model as loss of load hours are a better predictor of actual resource adequacy events than the tight margin hours, which results in a lack of support that these hours deserve greater weight.[109] Additionally, OMS contends that, although its members recognize the concern of diluting the risk by loss of load hours, MISO did not support its analytical conclusion based on the inclusion of tight margin hours.

ii. MISO June 7 Answer

61. MISO states that the proposed Tariff defines Critical Hours and establishes the 1,950-hour cap, which will be implemented for those Seasons with fewer than 1,950 loss of load hours.[110] MISO believes that its selected methodology maximizes the alignment of market requirements with system reliability requirements.[111] Further, MISO argues that equal weighting for loss of load hours and low-margin hours would assume the same level of reliability risk during those two sets of hours, even though the probabilistic model indicates expected unserved energy only during the loss of load hours.

62. MISO argues that it selected a weighting and capping methodology that prioritizes reliability and works best for its market design, while noting that it is not required to prove the methodology selected is the best available, but simply that the methodology selected is just and reasonable.[112]

iii. Answer to MISO's June 7 Answer

63. Public Interest Organizations argue that weighting Critical Hours undermines the reason for expanding Critical Hours to include low margin hours.[113] Public Interest Organization contend that MISO has not shown that its proposed weighting methodology

[109] OMS Comments at 9-10. OMS requests that MISO continue to evaluate and report on the weighting methodology during the transition period. *Id.* at 10.

[110] MISO June 7 Answer at 23.

[111] *Id.* at 24.

[112] *Id.* at 25.

[113] Public Interest Organizations Answer at 5-6.

falls within the range of reasonableness considering concerns regarding volatility and modeling uncertainty.[114]

iv. Deficiency Response and Responsive Pleadings

64. In response to a question on the interaction between the hourly weights and the 1,950-hour cap as it relates to the stability and accuracy of measuring resource performance, MISO explains that the 1,950-hour cap and the hourly weights work together to prioritize the hours that are most critical from a reliability risk perspective and help stabilize accreditation values.[115] MISO states that it proposes for Critical Hours to include low margin hours to address concerns regarding volatility in year-to-year accreditation for non-Summer Seasons where there are a small number of loss of load hours.[116] MISO further explains that the 1,950-hour cap is necessary to ensure that low margin hours do not dilute the contribution of loss of load hours. With respect to the weighting of the Critical Hours, MISO states that its proposed accreditation methodology assigns greater weight to the reliability risk expected during loss of load hours, and therefore lesser weight to the reliability risk expected during low margin hours, to ensure that the reliability risk expected during all Critical Hours is appropriately accounted for.[117]

65. In response to a question on whether the 1,950-hour cap mitigates decreased accuracy in resource performance in a way that cannot otherwise be achieved through hourly weighting alone, MISO states that, without a cap, low margin hours for the Summer Season would contribute approximately one third of the accreditation value based on the associated weights.[118] According to MISO, this lack of a cap would dilute the Summer Season accreditation, and the 1,950-hour cap takes into account that there are a sufficient and robust number of loss of load hours during the Summer Season.[119]

66. In response to a question regarding how effective margin and load forecast error will be used to calculate weights for Critical Hours, MISO proposes Tariff revisions to section II.A of Schedule 53A to add the specific steps MISO will follow to calculate

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[114] *Id.* at 6.

[115] Deficiency Response at 11.

[116] *Id.* at 10 (citing Joundi Test. at 25).

[117] *Id.* (citing Joundi Test. at 30).

[118] *Id.* at 11, tbls. 4 & 5.

[119] *Id.* at 11.

Resource Class-level accreditation.[120] Specifically, MISO proposes to first identify all hours with a margin that is equal to or less than 3% of the load for the hour in each Season, where margin is the difference between available generation, including net imports, and load.[121] MISO proposes to then identify the maximum positive margin from those hours and calculate the effective margin for each hour of a Season by subtracting that hour's margin from the identified maximum margin.[122] Next, MISO proposes to identify Critical Hours by including all loss of load hours, independent of the 1,950 hour-cap, and include low margin hours along with loss of load hours if there are fewer than 1,950 loss of load hours up to the combined total 1,950-hour cap.[123] MISO proposes to then calculate normalized weights for the identified Critical Hours using the effective margin and probability associated with the load forecast error scenario each Critical Hour belongs to.[124] MISO describes the probability of the load forecast error as "the probability of the associated load forecast error that is included in the LOLE analysis to account for economic load uncertainty."[125] Finally, MISO proposes to calculate the Resource Class-level UCAP for each Season and Resource Class as the weighted average availability of all resources within the Resource Class across all Critical Hours using the above-described weights.[126]

67. In response to a question on whether the 1,950-hour cap will be applied prior to or after assigning hourly weights, MISO clarifies that the 1,950-hour cap will be applied prior to calculating and assigning hourly weights to each Critical Hour.[127] In response to a question on whether assigning the hourly weights before or after the 1,950-hour cap is imposed affects the resulting weighted average Resource Class-level accreditation, MISO

[120] *Id.* at 12; MISO, Proposed FERC Electric Tariff, Schedule 53A (32.0.0), § II.A.

[121] This includes each hour of a Season for all iterations included in the LOLE analysis. MISO, Proposed FERC Electric Tariff, Schedule 53A (32.0.0), §§ II.A.1-2.

[122] *Id.*, §§ II.A.3-4.

[123] *Id.*, § II.5.

[124] *Id.*, § II.6.

[125] *Id.*

[126] *Id.*, § II.7.

[127] Deficiency Response at 12.

explains that it is important to calculate the weights after all Critical Hours are identified because the weights are normalized.[128]

68. Public Interest Organizations argue that MISO has not justified the weighting methodology or explained how it appropriately accounts for the expected reliability risk across different hours.[129] Public Interest Organizations reiterate their argument regarding the weighting methodology's improper magnification of the most extreme modeled weather events at the expense of other risk hours and assert that the weighting methodology is severable from the remainder of the proposal.[130]

69. Clean Energy Parties argue that MISO's responses in the Deficiency Response continue to demonstrate an unjust and unreasonable application of the Critical Hours concept because MISO's proposed weighting associated with those hours only exacerbates the undervaluation of renewable resources.[131] Clean Energy Parties argue that MISO's proposed definition of "Critical Hours" fails to reflect a resource's actual contribution to reliability during high-risk periods and that MISO's Deficiency Response does not overcome this issue because MISO continues to propose that Critical Hours are to be set for the period of system stress and only after energy-limited resources are exhausted, which means that MISO's proposal still does not properly reflect different types of resources' contributions to reliability.[132]

70. Midwest TDUs state that MISO's amended Tariff language that clarifies that MISO will apply the 1,950-hour cap prior to applying its weighting calculations adequately address its concern.[133]

v. MISO October 4 Answer

71. In response to Clean Energy Parties' argument that Critical Hours fail to reflect a resource's contribution to reliability during high-risk periods, MISO cites Mr. Ming's testimony, which states that DLOL framework is "inherently designed to adapt to changing system conditions as they evolve over time, creating a framework that is

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[128] *Id.* at 13.

[129] Public Interest Organizations Response to MISO Deficiency Response at 2.

[130] *Id.* at 2-3.

[131] Clean Energy Parties Response to MISO Deficiency Response at 5.

[132] *Id.* at 5-6.

[133] Midwest TDUs Response to MISO Deficiency Response at 10-11.

sustainable in the long run."[134] MISO states that the DLOL-based framework is designed to set requirements and accredit resources during times of need. MISO asserts that Critical Hours are a key component of the DLOL-based methodology and that the Clean Energy Parties' criticism of MISO's use of "Critical Hours" is without merit.[135]

72. MISO disagrees with the Public Interest Organizations' assertion that the proposed weighting will improperly magnify the effect of the most extreme modeled weather events at the expense of other risk hours, which Public Interest Organizations allege will lead to needless swings in accreditation outcomes. MISO reiterates that "the selected scheme was chosen because it provides consistent emphasis on the hours with highest unserved energy, thereby appropriately accounting the magnitude of expected reliability risk in each hour."[136]

vi. Commission Determination

73. We find MISO's proposed Critical Hours and weighting methodology to be just and reasonable and not unduly discriminatory or preferential. We find that MISO reasonably supported its proposal to cap the total number of Critical Hours at 1,950 hours in a season, explaining that doing so will prevent the addition of low margin hours from diluting the contribution of loss of load hours. For this reason, we decline the Arkansas Commission's request to direct MISO to include all Critical Hours in its methodology. Regarding the Public Interest Organizations' assertion that MISO has not explained how its proposed weighting methodology for Critical Hours accounts for expected reliability risk across different hours, we agree with MISO that applying weights to each Critical Hour is a reasonable way of accounting for different reliability risks between loss of load hours and low margin hours of varying degrees of effective margin. With respect to Public Interest Organizations' concern that MISO's proposal fails to provide sufficient information about the weights, we find that section II.A of Schedule 53A of the Tariff, as revised in MISO's Deficiency Response, describes how the weights are calculated with sufficient detail. Regarding OMS's argument that MISO has not proven why its proposed weighting methodology is superior to strictly using loss of load hours, we note that MISO is required only to demonstrate that its proposal is just and reasonable, not that it is more reasonable than other alternatives.[137] Moreover, MISO has explained that it included low margin hours at the request of stakeholders to reduce volatility in year-over-year results due to scenarios where Seasons may experience too few loss of load hours.

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[134] MISO October 4 Answer at 17 (citing Ming Test. at 33).

[135] *Id.* at 17-18.

[136] *Id.* at 18 (citing Joundi Test. at 29).

[137] *See, e.g.*, *Cities of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984).

We find unpersuasive Clean Energy Parties' arguments that MISO's proposed weighting of Critical Hours undervalues renewable resources and that Critical Hours fail to reflect a resource's contribution to reliability during high-risk periods. MISO's proposal applies the same methodology to all Capacity Resources (except External Resources) for their marginal contribution to reliability. Clean Energy Parties has failed to explain how or why the weighting of Critical Hours understates the reliability value of renewable resources. We also find that basing a resource's accreditation on its availability during Critical Hours will incent efficient investment decisions and behavior that will produce reliability benefits, as Critical Hours are the hours that matter most for system reliability.

d. Treatment of Wind and Solar Resources

i. Comments and Protests

74. Consumers Energy claims that MISO's proposed methodology does not reasonably address the shift in loss of load for solar resources because the methodology does not consider the "flattening" of the peak that solar provides by the capacity being available, which results in rating solar as not having any value in the capacity market.[138] Consumers Energy asserts that, if a solar resource were retired because it had no value in the capacity market, then the loss of load hours would shift to the hours where the resource was providing the most benefit but not being accredited. Consumers Energy maintains that, with this proposal, MISO disincentivizes investment in a diverse mix of assets, and thus MISO should revise its proposal to consider a mechanism to address how a resource's accreditation may be impacted by what a resource is doing to avoid a loss of load hour.

75. MISO Cities and Communities state that MISO's proposal does not address how a reduction in the zonal or regional LSE Reserve Requirements that result primarily from solar deployment raises equity and free ridership concerns.[139] MISO Cities and Communities explain that, as more solar generation is added, the net load profile shifts risky hours later into the evening, creating a socialized benefit through a reduction in net peak load, and thereby reducing LSEs' Reserve Requirements for all.[140] Therefore, MISO Cities and Communities assert that those who do not pay for the construction of solar generation benefit disproportionately through the shared reduced capacity requirements, and that unequal distribution of benefits and costs provides unclear investments signals.

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[138] Consumers Energy Protest at 4.

[139] MISO Cities and Communities Protest at 1, 3.

[140] *Id.* at 3.

76. The Mississippi Commission argues that MISO's proposal minimizes capacity accreditation of solar resources and marginalizes renewable resources' contribution, ensuring that solar generation cannot replace thermal units that remain in operation to satisfy MISO's LSE Reserve Requirements.[141] The Mississippi Commission states that MISO's proposal therefore will indirectly control the types of generation that will be built (via accreditation and penalties), even though that jurisdiction falls solely to state commissions.[142]

77. MidAmerican also contends that the proposal results in undue discrimination against renewable resources, specifically wind and solar, because MISO's accreditation values are vastly different from MidAmerican's actual performance values, which, according to MidAmerican, demonstrates the arbitrary nature of MISO's model design.[143]

ii. MISO July 9 Answer

78. MISO reiterates that its proposed accreditation methodology is a balanced approach that captures a range of reliability risks in both the planning and operations horizons by incorporating forward-looking probabilistic analysis (i.e., Step 1) with a resource's actual performance during recent periods of high system risk (i.e., Step 2).[144] MISO states that Mr. Joundi explains that "the results from the probabilistic analysis are not expected to and should not exactly match results of the deterministic approach."[145] MISO further states that one of the benefits of the proposed accreditation methodology is that it disentangles random factors that may have occurred historically from the expected performance characteristics of a resource and Resource Class under the wide variety of events that are captured in the probabilistic model (i.e., 30 years of weather data, five different load forecasts, and hundreds of random outage draws).[146]

iii. Commission Determination

79. We find that MISO's proposed DLOL accreditation methodology's treatment of all Resource classes, including wind and solar resources, is just and reasonable and not

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[141] Mississippi Commission Protest at 3-4.

[142] *Id.* at 2.

[143] MidAmerican Protest at 2-3.

[144] MISO July 9 Answer at 15.

[145] *Id.* (citing Joundi Test. at 43).

[146] *Id.* (citing Joundi Test. at 43).

unduly discriminatory or preferential because MISO's proposed DLOL accreditation methodology will accredit all Resource Classes based on their expected ability to meet the system's resource adequacy needs and account for the differing performance of all resources within a Resource Class using the same metric.

80. To the extent that dispatchable resources experience a reduction in their capacity accreditation, it is through the sufficiently described accreditation methodology—which accredits resources based on probabilistic and deterministic availability. Additionally, to the extent that a wind and solar resource receives a so-called under-accreditation, it would reflect that resource's availability during the hours of greatest need. For example, due to high solar penetration, Critical Hours may be shifted to the evening when solar resources are not capable of generating energy. The marginal value of solar resources thus declines as the solar penetration increases, and MISO's DLOL proposal is designed to reflect this dynamic. We also find that the proposed DLOL accreditation methodology would be uniformly applied to all resource types such that any difference in accreditation among technologies is attributable to the resources' operating characteristics and expected performance, particularly during Critical Hours. Further, the Mississippi Commission does not provide any evidence to support its claim that MISO is intentionally devaluing renewable resource accreditation in favor of thermal resources. To the extent that protesters claim that the alleged undervaluing of renewable resources is due to assumptions in MISO's LOLE model, we address those arguments in section IV.B.3 below.

e. Interconnection and Deliverability

i. Comments and Protests

81. Entergy and Cleco argue that MISO's proposal does not address how the DLOL methodology will account for interconnection service, nor does it address how MISO will include the deliverability limit in the SAC calculation or the historical offers to determine the ISAC.[147] Entergy and Cleco assert that it is unclear whether MISO's proposed DLOL methodology requires a resource to obtain full (i.e., 100% of its ICAP) deliverability rights to receive its full allocation of capacity credit. Entergy and Cleco note that some resource classes may have lower SAC values than their nameplate capacity and thus deliverability is a critical element that MISO should continue to work through in the stakeholder process and eventually substantiate in a filing under section 205 of the FPA.[148] The Mississippi Commission contends that MISO's proposal does not account

[147] Entergy and Cleco Protest at 6.

[148] *Id.* at 6-7.

for and differentiate between resources that have Network Resource Interconnection Service (NRIS) and Energy Resource Interconnection Service (ERIS).[149]

ii. Deficiency Response and Responsive Pleadings

82. In response to a question on the extent to which, if any, deliverability limits are included in the ISAC or SAC calculations, MISO explains that, although deliverability limits are not specifically included in either the ISAC or SAC calculations, deliverability limits are established in the conversion of SAC to Zonal Resource Credits (ZRC).[150] In response to a question on whether a resource is required to obtain full deliverability rights to receive full capacity accreditation, MISO explains that Schedule 53 Resources must be fully deliverable to their ICAP to receive full capacity accreditation.[151] MISO states that intermittent resources, however, are currently required to be deliverable up to their highest observed performance to receive full capacity accreditation, and that MISO is reviewing the application of its existing deliverability requirements to the proposed accreditation methodology. MISO states that it will make changes, if needed, prior to implementation, but that the existing deliverability rules will apply until that time.[152]

83. In response to a question on whether, and if so, how, the proposed accreditation methodology differentiates between resources interconnected through NRIS and ERIS, MISO explains that for a resource to be deliverable, it must have NRIS and/or ERIS coupled with firm transmission service.[153] MISO states that ERIS must be paired with firm transmission service to be counted towards total deliverability, whereas NRIS is always counted towards total deliverability.[154]

84. Entergy and Cleco argue that whether deliverability is assessed on the front-end prior to ISAC calculations or the back-end during the unit allocation of Resource Class

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[149] Mississippi Commission Protest at 4.

[150] Deficiency Response at 8 (citing MISO, FERC Electric Tariff, Module E-1, § 69A.4.5 (38.0.0)).

[151] *Id.* (citing MISO, FERC Electric Tariff, Module E-1, § 69A.4.5 (38.0.0), § 69A.4.5.A.iii.a).

[152] *Id.* at 9.

[153] *Id.* at 8-9 (citing MISO, FERC Electric Tariff, Module E-1, § 69A.4.5 (38.0.0), § 69A.4.5.A.iii.d-e; *id.* § 69A.3.1.g. (39.0.0), § 69A.3.1.g.B.i.ii).

[154] *Id.* at 9.

accreditation is essential to MISO's proposal and that MISO should continue to engage stakeholders to finalize and eventually substantiate an approach in a future filing.[155]

85. Rainbow Energy argues that MISO has not addressed the deliverability issue for intermittent resources because MISO's DLOL construct assumes that all resources are 100% deliverable and that MISO's DLOL proposal contains no mechanism to capture deliverability limits on the amount of SAC that can be converted to ZRCs, as there is no criteria limiting the ability of a unit to sell capacity to the operational capability of the unit or the level of interconnection service.[156] Rainbow Energy argues that a capacity resource is able to sell ZRCs in excess of interconnection limits for every Resource Class where the Resource Class-level UCAP exceeds Resource Class-level ISAC, but MISO's proposed DLOL Tariff language provides no limitation here, which exposes the MISO system to reliability risks by allowing market sellers to commit capacity in volumes in excess of interconnection limits and operational capability.[157] Rainbow Energy requests that the Commission direct MISO to limit the amount of ZRCs any individual resource can sell to the interconnection limits assigned to that facility, as this will ensure the DLOL proposal facilitates capacity sales that are physically deliverable to MISO load.

iii. MISO October 4 Answer

86. MISO contends that Rainbow Energy mischaracterizes the current state of MISO's deliverability rules. MISO states that the DLOL methodology will rely on the existing Tariff-based rules for deliverability, which contain deliverability limits on the amount of SAC that can be converted to ZRCs. MISO explains that a resource converts SACs into ZRCs based upon the amount of their deliverability as a percentage of ICAP. MISO states that, further, a Resource Class may have Resource Class-level UCAP that exceeds Resource Class-level ISAC, but this is by design. MISO states that Resource Class-level ISAC is only used to determine how much Resource Class-level UCAP an individual resource will receive.[158] MISO acknowledges that there is a difference in the application of the deliverability rules for existing Schedule 53 Resources compared to the deliverability rules applied to intermittent resources; however, MISO contends that these differences are unrelated to the DLOL-related methodology, and MISO will evaluate the need for any changes to how deliverability is accounted for in the calculation of SAC,

[155] Entergy and Cleco Response to MISO Deficiency Response at 3.

[156] Rainbow Energy Response to MISO Deficiency Response at 3-4, 6.

[157] *Id.* at 5.

[158] MISO October 4 Answer at 21.

ISAC, or conversion of ZRCs, and make an appropriate Tariff filing prior to implementation of the DLOL-based methodology in the 2028/2029 Planning Year.[159]

iv. Commission Determination

87. We are not persuaded by protests suggesting that MISO needs to further explain how the DLOL methodology will account for interconnection service and deliverability. As MISO explains, Schedule 53A Resources must be fully deliverable to receive full capacity accreditation. MISO's deliverability provisions are applied during the process of converting SAC to ZRCs and are found in Module E-1 of the Tariff, which MISO does not propose to modify.[160] MISO's existing Schedule 53, which MISO does not propose to change, similarly does not contain provisions relating to interconnection service or deliverability limits.

f. Transparency

i. Comments and Protests

88. Clean Energy Parties and Consumers Energy argue that MISO provides insufficient detail on Resource Class-level accreditation, explaining that MISO's proposal is too broad and omits significant details.[161] Consumers Energy states that pumped storage resources are the most reliable, flexible, and dispatchable renewable resource currently available with a consistent, dispatchable fuel supply; however, the Summer and Fall Seasons class averages are each 98%, whereas the Winter and Spring Seasons class averages are 50% and 67%, respectively.[162] According to Consumers Energy, these large swings in class averages from Season to Season go against common sense and call into question the overall accuracy of MISO's methodology because pumped storage is such a stable resource. Consumers Energy contends that, without additional data transparency, market participants cannot begin to understand how MISO came to these class averages and how to plan to meet MISO's requirements in the long-term. Consumers Energy also states that it appreciates the need for confidentiality for calculations that utilize load forecast; however, LSEs and market participants are unfairly prejudiced without a transparent system.

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[159] *Id.* at 22.

[160] *See* MISO, FERC Electric Tariff, Module E-1, § 69A.4.5 (38.0.0), § 69A.4.5.A.iii.d-e; *id.*, § 69A.3.1.g. (39.0.0), § 69A.3.1.g.B.i-ii.

[161] Clean Energy Parties Protest at 16-18.

[162] Consumers Energy Protest at 3.

89. Vistra states that, although it supports MISO's proposal, it is concerned with MISO's failure to provide robust data accessibility and transparency related to the probabilistic Resource Class-level accreditation process. Vistra argues that it is crucial for MISO to provide additional transparency to enable stakeholders to better assess Resource Class-level accreditation and its probabilistic design inputs and their impacts on individual resources, particularly as they are periodically adjusted.[163] Alliant Energy requests that the Commission monitor MISO's progress in the stakeholder process to address data transparency.[164] Similarly, DTE Electric states that MISO's measures regarding data transparency can be further enhanced.[165]

ii. MISO June 7 Answer

90. In response to protester arguments regarding lack of data transparency to support the Resource Class averages, MISO states that it commits to working with stakeholders to find a mutually acceptable process that maintains confidentiality while providing stakeholders with the information they need to replicate accreditation values.[166] MISO states that, consistent with past practice and industry standards and Attachment Z of its Tariff, which establishes the presumption that entity/asset specific market participant data are confidential, MISO has agreed to share aggregated, masked, and class average data.[167] MISO contends that market participants who seek more granular information will need to demonstrate that aggregated, masked, and class average data is insufficient to meet legitimate needs because of the confidential nature of the data sought.[168] MISO argues that the data provided will be enough information to either calculate Resource Class averages or identify what additional information is needed to calculate Resource Class averages, and that market participants should be able to clearly articulate why they need additional confidential information.[169]

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[163] Vistra Protest at 2.

[164] Alliant Energy Protest at 10.

[165] DTE Electric Protest at 10.

[166] MISO June 7 Answer at 28-30 (citing Consumers Energy Protest at 2; Alliant Energy Protest at 10).

[167] *Id.* at 29; MISO, FERC Electric Tariff, attach. Z (Non-Disclosure and Confidentiality Agreement) (31.0.0).

[168] MISO June 7 Answer at 29.

[169] *Id.* at 29-30.

91. In response to Alliant Energy's comments regarding MISO following through with stakeholder commitments and DTE Electric's suggestion that MISO annually publish forecasted DLOL results to enhance data transparency, MISO states that the stakeholder process should not hinder Commission acceptance of its proposal.[170]

iii. Answer to MISO's June 7 Answer

92. Consumers Energy maintains that it is generally supportive of MISO's proposal but reiterates its concerns on data transparency.[171] Specifically, Consumers Energy focuses on resources with very few peers within a given Resource Class, such as the Pumped Storage Resource Class, which Consumers Energy notes only has two units in the entire MISO footprint.[172] For such resources, Consumers Energy contends that aggregated, masked, and class average data will never be sufficient for a market participant to ascertain whether the class average values set by MISO are reasonable, and, without the ability to re-create MISO's work, resources might simply be forced to accept MISO's results.[173] Consumers Energy believes that the practical effect of the lack of transparency is that owners/operators of resources that belong to a small Resource Class may not be able to adequately plan their capacity for a given year due to the increased volatility of unit accreditation that will result from the owner/operator being required to make modeling assumptions that ultimately differ from MISO's.[174]

93. Consumers Energy argues that MISO's proposal creates additional time and financial burdens on owners of resources in smaller Resource Classes by requiring these owners to repeatedly plead their case to MISO for more granular information. Consumers Energy notes that, for Resource Classes with a large number of participants, such as solar, the class averages are predictable and more accurate, as opposed to a two-unit Resource Class where average data may not provide sufficient information to validate MISO's accreditations because fluctuations could greatly impact the averages. Consumers Energy requests that, if the Commission approves MISO's filing, the

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[170] *Id.* at 30.

[171] Consumers Energy Answer at 2.

[172] *Id.* at 2-3.

[173] *Id.* at 3-4.

[174] *Id.* at 4.

Commission should require MISO to submit a compliance filing addressing increased data transparency for resources within a smaller Resource Class.[175]

iv. MISO July 19 Answer

94. MISO disagrees with Consumers Energy's continued calls for MISO to submit a compliance filing to address increased data transparency for resources within smaller Resource Classes.[176] MISO states that the best way to provide sufficient information to market participants related to their accreditation values, while respecting MISO's obligations to protect confidential market participant data, is to provide all participants with aggregated, masked, and class average data.[177] MISO states that market participants may exchange confidential information with one another, or grant MISO permission to share such information with other Resource Class members, but reiterates that MISO has no discretion in circulating confidential market participant data.

v. Commission Determination

95. We find MISO's proposed level of data transparency related to Resource Class calculations to be just and reasonable and not unduly discriminatory or preferential. Regarding whether there is sufficient transparency into the calculation of Resource Class averages, we find that MISO's proposal to apply Attachment Z in its Tariff is reasonable and in line with past practice to share aggregated, masked, and class average data consistent with industry standards. We find that MISO's proposal to apply Attachment Z of its Tariff to its Resource Class-level accreditation process strikes a reasonable balance between protecting sensitive market information and allowing market participants to replicate MISO's work.

96. We note that MISO has committed to working with stakeholders to further address data transparency issues to find a mutually acceptable process that maintains confidentiality while providing stakeholders with the information they need to replicate accreditation values. To that effect, MISO has initiated a stakeholder process to address those concerns in a mutually satisfactory manner whereby more granular data may be obtained from MISO so long as the request is substantiated.[178] Although this need to

[175] *Id.* at 4-5.

[176] MISO July 19 Answer at 3.

[177] *Id.* at 4.

[178] Transmittal at 36.

request data does shift the burden to the market participant, we believe that, on balance, this is a reasonable paradigm given the need to protect confidential data.

2. Resource Classes

a. Filing

97. MISO proposes to assign all Schedule 53A Resources to a Resource Class based on similar operating characteristics of individual resources within the class and that a Resource Class should generally reflect the same or similar technologies.[179] In its initial filing, MISO proposes Tariff revisions to add the criteria to define "Resource Class"[180] and include the following Resource Classes: (1) Gas (including Oil); (2) Combined Cycle; (3) Coal; (4) Hydro; (5) Nuclear; (6) Pumped Storage; (7) Storage; (8) Solar; (9) Wind; (10) Run-of-River; and (11) Biomass.[181] MISO states that including Resource Classes within the Tariff provides stakeholders with the certainty they need to engage in long-term resource planning, knowing that any proposed changes to the Resource Classes will be discussed in the stakeholder process and filed with the Commission.[182] Mr. Joundi states that MISO intends to periodically review the set of Resource Classes by monitoring its generator interconnection queue and changes in its generation fleet, and that MISO will work with stakeholders to determine whether additional Resource Classes should be established as new technologies emerge and MISO gains experience with resource performance under the proposed accreditation methodology.[183] MISO explains that, until the Commission accepts any proposed changes as part of a future FPA section 205 filing, the list of Resource Classes in the Tariff will remain unchanged.

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[179] *Id.* at 17-18.

[180] "The term 'Resource Class' as used in this Schedule 53A shall mean a group of Capacity Resources, except External Resources, with similar operating characteristics whose Resource Class-level UCAP has been determined based on the LOLE analysis and is further described in this Schedule 53A." MISO, Proposed FERC Electric Tariff, Schedule 53 (31.0.0), § I.C.

[181] Transmittal at 18; Joundi Test. at 36; MISO, Proposed FERC Electric Tariff, Schedule 53A (31.0.0), § I.C.

[182] Transmittal at 19.

[183] Joundi Test. at 37-38.

b. Comments and Protests

98. Constellation Energy supports MISO's proposal to establish Resource Classes based on similar technologies that share operating characteristics. Constellation Energy also supports MISO's decision to avoid special carve-outs within the designated Resource Classes or to create sub-classes, consistent with PJM's approach.[184] DTE Electric supports MISO's definition of Resource Classes and the inclusion of Resource Class definitions in the Tariff.[185]

99. Midwest TDUs and the Mississippi Commission argue that MISO has not defined how it will determine Resource Classes or established a process for evaluating the Resources Classes to be used for each Planning Year.[186] Midwest TDUs assert that MISO's Resource Class definition is vague and fails the rule of reason standard because it does not "clearly and specifically" define how Resource Classes will be established or how resources will be assigned.[187] Midwest TDUs state that, although MISO stresses that Resource Classes must possess "a unique set of operating characteristics," MISO's proposed Tariff language fails to identify what "operating characteristics" MISO would consider in making Resource Class assignments and whether such "operating characteristics" correlate to expected marginal contribution to reliability during times of highest reliability risk.[188] Midwest TDUs explain that MISO has not satisfied the rule of reason standard because, counter to MISO's assertion, an explanation of how Resource Class-level UCAP values are determined is not the same as explaining how MISO will divide resources into different Resource Classes—a process MISO only vaguely describes.[189] Midwest TDUs also assert that MISO's proposed Resource Class definition is distinguishable from NYISO's because NYISO's definition refers to both similar technologies and/or operating characteristics and similar marginal reliability

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[184] Constellation Energy Comments at 4 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 105).

[185] DTE Electric Protest at 9.

[186] Midwest TDUs Protest at 3; Mississippi Commission Protest at 8.

[187] Midwest TDUs Protest at 6-7 (quoting 18 C.F.R. § 35.1(a) (2024) ("Every public utility shall file with the Commission, in conformity with the requirements of this part, full and complete rate schedules and tariffs and those service agreements not meeting the requirements of § 35.1(g) *clearly and specifically* setting forth all rates and charges.") (emphasis added by Midwest TDUs)).

[188] *Id.* at 7-8.

[189] *Id.* at 8.

contributions, whereas MISO only refers to "similar operating characteristics."[190] Moreover, Midwest TDUs state that NYISO includes a provision detailing the annual process for establishing Capacity Accreditation Resource Classes, whereas MISO does not include language regarding the process for revising its list of Resource Classes or how disputes over Resource Class assignments are to be resolved.[191]

100. DTE Electric states that MISO should implement a metric that will signal when Resource Classes need to be reevaluated, as well as continually evaluate whether small sample sizes within any Resource Class are creating undesirable effects on accreditation.[192] DTE Electric explains that it anticipates a need to separate the storage Resource Class into short and long-duration storage once long-duration storage resources are common entrants into the MISO market.[193] Clean Energy Parties also argue that MISO's proposal is incomplete because it fails to distinguish between storage products and treats storage as a four-hour resource without considering other durations.[194] OMS emphasizes the need for MISO to periodically revisit the definition of Resource Classes as it gains experience, explaining that distinctions based on locational or operational characteristics may need to be drawn.[195] According to OMS, eventually an agreed-upon methodology for determining the need for a distinct Resource Class could be beneficial. Vistra states that, although it finds the proposed Resource Class definition acceptable and necessary in the near term for determining the future capacity accreditation for Resource Classes, it is concerned that the Resource Class definition fails to include any defined

[190] *Id.* at 8-9. *See* NYISO, NYISO Tariffs, Open Access Transmission Tariff, § 1.3 (Definitions – C) (14.0.0). NYISO defines Capacity Accreditation Resource Class as a "defined set of Resources and/or Aggregations, as identified in accordance with [Independent System Operator] Procedures, with similar technologies and/or operating characteristics which are expected to have similar marginal reliability contributions toward meeting [New York State Reliability Council, LLC (NYSRC)] resource adequacy requirements for the upcoming Capability Year. Each Capacity Accreditation Resource Class will be evaluated through the annual review detailed in Section 5.12.14.3. Each Installed Capacity Supplier will be assigned a Capacity Accreditation Resource Class."

[191] *Id.* at 9-10.

[192] DTE Electric Protest at 9-10.

[193] *Id.* at 9.

[194] Clean Energy Parties Protest at 12.

[195] OMS Comments at 9.

process that allows for a periodic update to the Resource Classes.[196] Vistra asserts that MISO should be required to conduct an annual review of the list of Resource Classes.[197] Similarly, Clean Energy Parties state that MISO needs to revisit Resource Class definitions and clearly explain how MISO will update Resource Classes as the generation mix changes.[198]

101. Clean Energy Parties argue that MISO's proposal limits potential Resource Classes and increases customer rates by omitting technological and geographical distinctions, which, according to Clean Energy Parties, will reduce capacity contributions, and therefore requires MISO and LSEs to procure additional capacity.[199] Clean Energy Parties assert that MISO does not specify the criteria to add or remove Resource Classes and that MISO's proposed list of Resource Classes fails to reflect the different operating characteristics of certain renewable resources.[200]

102. Clean Energy Parties state that MISO omits hybrid resources and, additionally, proposes to reduce the accredited capacity of hybrid resources below their combined output. Clean Energy Parties argue that MISO could implement either a "sum-of-parts" approach or a bespoke, project-specific approach to accredit hybrid resources.[201] Clean Energy Parties state that, although the project-specific approach is more computationally complex, PJM uses the project-specific approach to allow for unique hybrid configurations.[202] Clean Energy Parties state that MISO's proposal to treat hybrid resources as a single resource type and accredit co-located resources based on the "sum-of-parts" approach ignores that hybrid resources likely have ranges of standard operating configurations and that hybrid resources can have accredited capacity higher than the sum

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[196] Vistra Protest at 4-5.

[197] *Id.* at 5.

[198] Clean Energy Parties Protest at 18.

[199] *Id.* at 8.

[200] *Id.* at 9.

[201] *Id.* at 9-10 (citing Energy Systems Integration Group, Unlocking the Flexibility of Hybrid Resources 26 (2022), https://www.esig.energy/wp-content/uploads/2022/03/ESIG-Hybrid-Resources-report-2022.pdf).

[202] *Id.* at 10 (citing PJM, *PJM Manual 21A: Determination of Accredited UCAP Using Effective Load Carrying Capability Analysis*, § 1.3.1, (June 2024), https://www.pjm.com/-/media/documents/manuals/m21a.ashx).

of their parts.[203] According to Clean Energy Parties, the omission of an accreditation methodology that would fully account for each component's ability to contribute to MISO's capacity needs is unjust and unreasonable.[204]

103. Midwest TDUs and IMEA argue that MISO's proposed Resource Classes combine different resources into the same Resource Class. For example, Midwest TDUs argue that MISO inappropriately groups dual fuel and single fuel resources in the same Resource Class despite their unique operating characteristics,[205] and IMEA argues that MISO's proposal to combine gas and oil resources into a single Resource Class is unjust and unreasonable because MISO incorrectly assumes that gas and oil resources have similar operating characteristics.[206] Midwest TDUs assert that dual fuel resources have unique operating characteristics that directly and significantly affect their availability during extreme cold weather events, and that dual fuel resources should not have their accreditation impacted by a Resource Class-level UCAP that includes dissimilar, single fuel resources.[207] IMEA states that gas resources are primarily used as baseload generation, but oil resources run primarily during peak demand or as an emergency backup for other resources.[208] IMEA asserts that MISO's proposed Resource Classes therefore do not account for each resource's true capability to perform during times of critical need and that MISO's proposal would under-accredit oil and over-accredit gas during extreme winter weather.[209] IMEA also argues that gas and oil should be separate Resource Classes in the same way that MISO proposes to separate pumped storage from storage and run-of-river from hydro.[210] Additionally, Midwest TDUs state that the Commission recently found that the operational differences between dual fuel and single fuel resources make them not similarly situated in the context of accreditation because "they are physically different (e.g., a dual fuel resource has on-site fuel oil storage and is

[203] *Id.* at 10-11.

[204] *Id.* at 11.

[205] Midwest TDUs Protest at 3, 12.

[206] IMEA Protest at 1, 3.

[207] Midwest TDUs Protest at 13, 15.

[208] IMEA Protest at 5. IMEA explains that natural gas is delivered by pipeline and is a "just-in-time" fuel, whereas diesel is stored on-site in sufficient quantities to run for the duration of a reliability event and is readily available. *Id.* at 3.

[209] *Id.* at 4, 7.

[210] *Id.* at 5.

capable of operating on both gas and oil and a gas-only resource with a firm fuel supply resource has no on-site storage and is only capable of operating on gas)."[211] Midwest TDUs also state that the Commission found that the differences between dual fuel and single fuel resources are directly related to the ability to perform in times of greatest need, and they support distinguishing dual fuel resources for capacity accreditation purposes because "a gas-only resource's reliability value may be lower during an extreme winter event than a nuclear unit or dual fuel unit if there is a natural gas supply disruption (e.g., reduced natural gas production or issues with the natural gas pipeline system)."[212]

104. Clean Energy Parties argue that MISO's single solar Resource Class omits the distinction between fixed-mount and tracking photovoltaic resources, whereas PJM distinguishes between these types of solar resources.[213] Clean Energy Parties state that, although tracking solar resources would presumably obtain a larger portion of the combined fixed and tracking solar Resource Class accreditation, a single solar Resource Class would create unjust and unreasonable rates by devaluing the capacity contributions of tracking solar.[214]

105. Clean Energy Parties also argue that MISO fails to account for varying performance of renewable resources based upon geographic location across the MISO footprint.[215] Clean Energy Parties assert that, in the 2023/2024 Planning Year, Summer capacity credits for wind varied from 18.7% in Zone 1 to 13.8% in Zones 5 and 6, whereas Winter capacity credits ranged from 45.3% in Zone 1 to 29.2% in Zone 4.[216] According to Clean Energy Parties, combining all resources across MISO's footprint

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[211] Midwest TDUs Protest at 13-14 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 106).

[212] *Id.* at 14-15 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 106).

[213] Clean Energy Parties Protest at 11 (citing PJM, *PJM ELCC Education*, 34 (Feb. 2024), https://www.pjm.com/-/media/committeesgroups/committees/pc/2024/20240216-special/elcc-education.ashx).

[214] *Id.* at 11-12.

[215] *Id.* at 12.

[216] *Id.* at 12-13 (citing MISO, *2023/2024 Planning Year: Wind and Solar Capacity Credit Report* 3, Table 1-1 (2023), https://cdn.misoenergy.org/2023%20Wind%20and%20Solar%20Capacity%20Credit%20Report628118.pdf).

would result in inaccurate accreditation and unjust and unreasonable rates due to geographic impacts on performance.[217]

c. MISO June 7 Answer

106. MISO states that the proposed Resource Classes are sufficient in size to limit volatility and provide for future planning.[218] In response to Midwest TDUs' arguments regarding what constitutes a Resource Class, MISO states that section I.C of Schedule 53A provides a clear and predictable definition of Resource Class and defines a process for sharing the mapping of Resource Classes.[219] MISO further points out that section I.C of Schedule 53A provides parties the ability to dispute a resource's Resource Class assignment, and that potential new Resource Classes or the division of an existing Resource Class will require ongoing evaluation and stakeholder discussion.[220] MISO also states that what metrics will be considered for adding new Resource Classes and the frequency of review are implementation details best suited for MISO's BPM.[221] MISO commits to working with stakeholders to develop a process in the BPMs for identifying when changes to Resource Classes are necessary, and MISO states that its annual review of its BPM for Resource Adequacy will allow stakeholders to consider and propose changes to Resource Classes.[222]

107. In response to Clean Energy Parties' arguments regarding the proposed set of Resource Classes, MISO asserts that the Resource Classes are sufficient to capture the resources that currently exist on the MISO system and into the foreseeable future.[223] Regarding accreditation for co-located resources, MISO states that Mr. Joundi's testimony explains that "[c]o-located resources that share an interconnection service limit will be accredited according to each of the resources' chosen participation model and

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[217] *Id.* at 13.

[218] MISO June 7 Answer at 13.

[219] *Id.* at 15; MISO, Proposed FERC Electric Tariff, Schedule 53A (31.0.0) § I.C.

[220] MISO June 7 Answer at 13, 15; MISO, Proposed FERC Electric Tariff, Schedule 53A (31.0.0) § I.C

[221] MISO June 7 Answer at 15.

[222] *Id.* at 18 (citing Joundi Test. at 37-38).

[223] *Id.* at 13-14 (citing Clean Energy Parties Protest at 9-12).

their accreditation would be equal to the sum of the individual components."[224] MISO states that Mr. Joundi further explains MISO's deliberate decision not to create a hybrid resource class, which is that creating a Resource Class for hybrid resources is unmanageable given the countless combinations of resources that make up a hybrid resource.[225]

108. MISO states that the two-step accreditation process will allow the maximum credit for hybrid resources because each component will receive the appropriate share of the Resource Class-level UCAP.[226] According to MISO, solar and wind resources backed by storage are expected to receive a larger portion of their respective Resource Class-level UCAP because those resources will presumably operate longer during periods of highest reliability risk compared to stand-alone resources. MISO further explains that many criticisms do not consider that resources with better performance will be allocated larger portions of the Resource Class-level UCAP based on their superior performance and will be separate from resources that do not perform as well during Tier 1 and Tier 2 RA Hours.[227]

109. In response to Midwest TDUs' arguments regarding grouping dual fuel combustion turbines with gas-only and oil-only units, MISO states that the two-step accreditation methodology appropriately captures the benefits of a dual fuel resource because the dual fuel resource, based on its performance, would likely receive more of the Resource Class-level UCAP compared to a single fuel resource.[228] In response to IMEA's arguments that combining gas and oil into a single Resource Class will inaccurately reflect the capabilities of both resources, MISO asserts that oil-only resources have sufficiently similar operating and performance characteristics compared to gas resources such that they can be grouped together based on the fact that most oil-only resources are diesel engines, which constitute approximately 2 GW of the more than 190 GW fleet, and that MISO balanced the size of this small class against similar characteristics and operating performance.[229]

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[224] *Id.* (citing Joundi Test. at 44-55).

[225] *Id.* at 14 (citing Joundi Test. at 45).

[226] *Id.* at 16.

[227] *Id.* at 17.

[228] *Id.*at 15-16.

[229] *Id.* at 16-17.

110. Regarding solar resources, MISO states that, with increased penetration, it may become necessary to create more granular Resource Classes, but the existing solar resources and those in the near future have similar enough operating characteristics and technologies.[230] MISO explains that it may also determine that more granular Resource Classes are necessary to capture regional, geographic differences as it gains more operational experience.[231] MISO asserts that Clean Energy Parties have not provided sufficient evidence that regional differences today impact performance to such a degree that the proposed Resource Classes are unjust and unreasonable.[232]

111. With regard to Vistra and OMS's request to include in the Tariff a periodic review process for the definitions and modeling process for Resource Classes, MISO notes that its probabilistic modeling process is an annual process for which improvements are made through the stakeholder process at the Resource Adequacy Subcommittee and Loss of Load Expectation Working Group.[233] MISO further states that it is committed to working with stakeholders to document a process in the Resource Adequacy BPM for identifying when changes to Resource Classes are necessary and working with stakeholders during MISO's annual review of its BPM for Resource Adequacy to provide the mechanism to consider and propose changes to Resource Classes.[234]

d. Answers to MISO's June 7 Answer

112. Midwest TDUs argue that MISO's proposed Tariff language on Resource Classes is insufficient and fatally flawed.[235] Midwest TDUs assert that MISO's proposed language fails to comply with the requirements of the FPA and the Commission's regulations. Midwest TDUs contend that the availability of dispute resolution procedures in Schedule 53A to challenge MISO's assignment of an individual resource to a particular Resource Class is a red herring because Midwest TDUs believe that opportunity is meaningless without an explicit standard in the Tariff for evaluating such disputes.[236] Midwest TDUs allege that, because Resource Classes are fundamental to

[230] *Id.* at 14.

[231] *Id.* at 14-15.

[232] *Id.* at 15.

[233] *Id.* at 17.

[234] *Id.* at 17-18 (citing Joundi Test. at 37-38).

[235] Midwest TDUs Answer at 4.

[236] *Id.* at 5.

MISO's proposed accreditation methodology, the FPA requires the details of how MISO will determine Resource Classes to be on file and subject to Commission review and not relegated to the BPMs.[237] Midwest TDUs also argue that MISO is nonresponsive to their characterization of the significantly different operating characteristics of dual fuel resources compared to single fuel resources. Midwest TDUs claim that MISO's intention of accrediting dual fuel resources in Step 2 of MISO's process is improper, and that treating dual fuel resources the same as single-fuel resources is unjust, unreasonable, and unduly discriminatory.[238]

e. MISO July 9 Answer

113. MISO disagrees with Midwest TDUs' characterization of MISO's proposal.[239] MISO argue that Midwest TDUs' contention that changes to its Resource Classes will not be subject to Commission scrutiny is incorrect, noting that the Resource Class list is included in its Tariff and that Tariff changes require Commission approval.[240] MISO reiterates that it plans to work with stakeholders to develop a process for reviewing and updating the list of Resource Classes and has agreed to include that process within the BPM for Resource Adequacy, which it reviews annually.[241] MISO notes that, through that process, should changes become necessary, they will come before the Commission with an FPA section 205 filing. MISO maintains that the process for updating the Resource Class list is an important implementation detail that is best suited for the BPMs, not the Tariff.

114. MISO states that it continues to believe that dual fuel resources are appropriately included in the Gas (including Oil) Resource Class.[242] MISO states that, while it acknowledges that dual-fuel resources have some operational differences compared to single-fuel resources, it continues to believe these operational differences will be captured in Step 2 of the DLOL process. MISO notes that it will evaluate the list of Resource Classes each year prior to implementation through its stakeholder process and

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[237] *Id.* at 6.

[238] *Id.* at 7-8.

[239] MISO July 9 Answer at 7.

[240] *Id.* at 8.

[241] *Id.* at 9.

[242] *Id.* at 10.

will make an FPA section 205 filing if changes to the Resource Classes need to be made.[243]

f. Deficiency Response and Responsive Pleadings

115. In response to a question to identify the types of operating characteristics and quantitative thresholds used to determine whether resources should be in distinct Resource Classes, MISO proposes to revise the definition of Resource Class to include fuel type, along with operating characteristics, as a specific factor used to determine Resource Classes.[244] MISO also proposes to revise the Hydro Resource Class to "Reservoir Hydro" and revise the Run-of-River Resource Class to "Run-of-River Hydro" to clarify how MISO intends to map such resources to the specific Resource Classes.[245] MISO explains that it intentionally elected not to define specific operating characteristics used to determine Resource Classes because resources operate differently, and the metrics applied to evaluate one Resource Class may differ from those needed to analyze another.[246] MISO states that, furthermore, it included the Resource Classes within the Tariff to provide certainty to market participants and that it commits to study Resource Classes to determine when changes are necessary.[247] MISO asserts that it will identify the specific operating characteristics considered in recommending any changes to the list of Resource Classes pursuant to an FPA section 205 filing.

116. MISO avers that market participants are well positioned to know when a new Resource Class is warranted, and MISO states that a market participant may request that MISO consider a new Resource Class based on a demonstration that its resource does not fit into an existing Resource Class because of different operating characteristics and/or fuel type.[248] MISO states that the request must be made sufficiently in advance to allow

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[243] *Id.* at 10-11.

[244] Deficiency Response at 2-3; MISO, Proposed FERC Electric Tariff, Schedule 53 (32.0.0) § 1.C.

[245] Deficiency Response at 4.

[246] *Id.* at 3.

[247] For example, MISO states that, prior to implementation, MISO will evaluate the storage Resource Class in light of the relative duration of the storage resources then operating on the MISO system, and if MISO determines there are significant amounts of storage resources with varying levels of duration, MISO will propose to add additional storage Resource Classes to capture these operating characteristics (i.e., duration). *Id.*

[248] *Id.*

for MISO to study the request and stakeholder discussion; moreover, MISO explains that the new Resource Class must be able to be modeled and have a sufficient number of resources and aggregate capacity such that there is little or no volatility in Resource Class-level UCAP from year to year.

117. In response to a question as to whether there is a minimum number of MW and/or minimum number of individual resources necessary to form a Resource Class, MISO explains that, although there is no minimum aggregate capacity and/or minimum number of individual resources requirement, the smaller the Resource Class, in both respects, the greater potential for year to year volatility.[249] MISO states that the Pumped Storage Resource Class has the fewest number of individual resources at eight, and that Storage has the least aggregate capacity at 56 MW of ICAP.[250] MISO asserts that it will continue to monitor the Resource Classes and consider the aggregate capacity and number of resources as the MISO generation fleet continues to grow and change.[251]

118. In response to a request to describe the specific operating characteristics between oil-only and gas-only resources and to provide any data demonstrating that gas and oil resources feature similar operating characteristics, MISO explains that, after further evaluation, it recognizes that oil-only and gas-only resources perform differently throughout the year.[252] MISO proposes to modify Schedule 53A to include an additional Resource Class of Oil.

119. In response to a question on whether, and if so, how, changes to the proportion of MW associated with dual fuel resources in the Gas (including Oil) Resource Class affect single fuel resource accreditation within the Gas (including Oil) Resource Class, MISO explains that removing dual fuel resources slightly increases gas-only resource accreditations and slightly decreases oil-only resource accreditations.[253] In response to a question on whether, and if so, how, MISO's suggestion that operational differences between dual fuel and single fuel resources will be captured in Step 2 is consistent with the proposed Resource Class definition, which states that resources "with similar operating characteristics" will be grouped together, MISO proposes Tariff revisions to

[249] *Id.* at 3-4.

[250] *Id.* at 3.

[251] *Id.* at 4.

[252] *Id.* at 5.

[253] *Id.* at 6, tbl. 3.

include a separate Dual Fuel Oil/Gas Resource Class.[254] MISO states that the separate Resource Classes for Oil and Dual Fuel Oil/Gas will account for the different operational characteristics, fuel types, and capabilities of these resources. Furthermore, MISO proposes Tariff revisions to include a requirement for market participants that own resources in the Dual Fuel Oil/Gas Resource Class to attest to the full capability of their resources while independently using both fuel types.[255] MISO asserts that the attestation is necessary to deter misrepresentations of a resource's true capability.[256]

120. In response to a question regarding MISO's deadline to respond to any Resource Class assignment disputes, MISO proposes Tariff revisions requiring MISO to make a final Resource Class assignment determination within 10 business days of the dispute submission date.[257] In response to a question on what factors MISO will use to evaluate Resource Class assignment disputes, MISO proposes Tariff revisions to clarify that MISO will use factors including, but not limited to, registration within MISO's commercial model, Generator Availability Data System (GADS) registration, and data submitted to the Energy Information Administration (EIA).[258]

121. Clean Energy Parties argue that MISO's proposal continues to be deficient because MISO omits hybrid resources from its proposed list of resources in its Deficiency Response, which Clean Energy Parties claim undervalues resources that could provide flexibility for the system.[259]

122. Midwest TDUs support MISO's Tariff revisions proposed in the Deficiency Response to include Oil and Dual Fuel Oil/Gas as distinct Resource Classes from Gas.[260] Midwest TDUs further support that any market participant that registers as a Dual Fuel Oil/Gas Resource will be required to attest to the performance of both components of the

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[254] *Id.* at 6; MISO, Proposed FERC Electric Tariff, Schedule 53 (32.0.0), § 1.C.

[255] Deficiency Response at 6; MISO, Proposed FERC Electric Tariff, Schedule 53 (32.0.0), § 1.C.

[256] Deficiency Response at 6; MISO, Proposed FERC Electric Tariff, Schedule 53 (32.0.0), § 1.C.

[257] Deficiency Response at 7.

[258] *Id.* at 6-7; MISO, Proposed FERC Electric Tariff, Schedule 53 (32.0.0), § 1.C.

[259] Clean Energy Parties Response to MISO Deficiency Response at 6-7.

[260] Midwest TDUs Response to MISO Deficiency Response at 3 (citing Deficiency Response at 5-6).

Resource pursuant to the requirements set forth in the BPM for Resource Adequacy; however, Midwest TDUs note that such requirements have not yet been included in the BPM.[261] Midwest TDUs state that MISO's revisions to the list of Resource Classes illustrate the importance of establishing a clearer definition of Resource Classes. [262] Midwest TDUs argue that, although MISO added additional language for "fuel type" to address MISO's failure to distinguish among resources in establishing Resource Classes, MISO does not clarify other Resource Classes, including storage resources with longer and shorter durations.[263]

123. Midwest TDUs further assert that the proposed Tariff language regarding attestation for Dual Fuel Oil/Gas Resources leaves MISO too much discretion to indirectly impose, via attestation, unreasonable requirements on dual fuel resources (e.g., additional testing requirements inconsistent with air permits and other limitations, or requirements that are otherwise uneconomic and wasteful of fuel). Midwest TDUs argue that MISO should be required to describe the scope and content of the attestation requirement in the amended Tariff language.[264] Midwest TDUs argue that MISO's Deficiency Response falls short of providing Tariff language that is sufficient to ensure just, reasonable, and not unduly discriminatory Commission-jurisdictional rates because MISO's proposed Tariff language does not provide stakeholders with how or when MISO will make Resource Class determinations, nor does MISO provide the Commission with any clear, objective standard to evaluate future disputes about whether MISO either properly established a new Resource Class or declined to do so.[265]

g. MISO October 4 Answer

124. MISO states that the Resource Class definition is sufficient to put market participants on notice that Resource Classes were initially determined and modified based on fuel type and operating characteristics. MISO states that, as new resources connect to the system and MISO gains operational data and experience, MISO will work with stakeholders to sub-divide existing Resource Classes or create new ones, as necessary. MISO contends that, despite claims otherwise, MISO cannot and will not unilaterally

[261] *Id.* at 3-4 (citing Deficiency Response, Tab A, Schedule 53, § I.C).

[262] *Id.* at 6 (citing Deficiency Response at 3, 5).

[263] *Id.* (citing Deficiency Response at 3).

[264] *Id.* at 4.

[265] *Id.* at 5-7 (citing Deficiency Response at 3).

create new or subdivide existing Resource Classes without additional Commission review and approval.[266]

125. MISO contends that the process and the timeline to request a new Resource Class is not an essential element of the justness and reasonableness of the proposal but rather an implementation detail best suited for MISO's BPM for Resource Adequacy. MISO further contends that additional information on the analysis that will be used to determine whether a new Resource Class will be added is unnecessary, as any addition or modification will need to be filed with and accepted by the Commission.[267]

126. MISO states that it disagrees with Clean Energy Parties' characterization of its approach to hybrid resources. MISO reiterates that market participants will have the flexibility to decide whether to operate the hybrid as a single resource or a co-located resource, which determines how it will be accredited.[268] MISO adds that, as solar hybrid Dispatchable Intermittent Resources penetrate the system, MISO anticipates that the Resource Class-level UCAP will likely increase. MISO further contends that Clean Energy Parties did not produce any evidence to support their claim that MISO's approach will undervalue hybrid resources.[269]

127. With regard to Midwest TDUs' contention that the requirement for a Dual Fuel Oil/Gas resource owner to provide an attestation regarding the performance of each component of the resource leaves MISO too much discretion to impose unreasonable requirements on dual fuel resources, MISO states that it appreciates the willingness of Midwest TDUs to accept an attestation requirement but disagrees that the scope and content of the requirement should be in the Tariff. MISO states that it has no intention of using the attestation to impose unreasonable or additional requirements on Dual Fuel Oil/Gas Resources and will work with stakeholders to develop a form attestation to be included in the appendix of the BPM for Resource Adequacy.[270]

h. Commission Determination

128. We find that MISO's proposed definition and determination of Resource Classes, as amended, are just and reasonable and not unduly discriminatory or preferential

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[266] MISO October 4 Answer at 6.

[267] *Id.* at 7.

[268] *Id.* at 8.

[269] *Id.* at 9.

[270] *Id.* at 10.

because they identify the criteria to be used to determine both Resource Classes and Resource Class assignments and, consistent with those criteria, MISO has specified the individual Resource Classes in the Tariff.

129. Although protesters argue that MISO's proposal is too vague because they claim NYISO's definition of Capacity Accreditation Resource Class[271] is more descriptive than MISO's definition of Resource Class, we find that MISO's proposal to establish Resource Classes in its Tariff and assign a resource to a Resource Class based on fuel type and similar operating characteristics is reasonable. By including the Resources Classes in its Tariff, MISO is required to submit a filing under FPA section 205 to propose any changes to the Resource Classes, thereby providing stakeholders with an opportunity to express any concerns. Further, MISO does not limit Resource Class assignment to fuel type and similar operating characteristics but also proposes to consider the registration within the commercial model, Power GADS registration, and data submitted to the EIA. We also note that MISO's proposal is consistent with the Commission-approved Capacity Accreditation Resource Class definition in NYISO and the ELCC Class definition in PJM, which likewise refer to similar technologies and operating characteristics.[272] Moreover, similar to PJM, MISO proposes to include in its Tariff the list of identified Resource Classes, whereas NYISO does not.[273] Therefore, we find that, taken together, proposed Schedule 53A's inclusion of the factors that both establish Resource Classes and make Resource Class assignments, as well as including the Resource Classes themselves in Schedule 53A, provides sufficient clarity as to how Resource Class assignments will be determined and ensures that the list of identified Resource Classes will not be changed absent an FPA section 205 filing.

130. Regarding arguments by Midwest TDUs, the Mississippi Commission, OMS, Vistra, and DTE Electric that there should be a regular review of established Resource Classes, we note MISO's stated commitment to develop a process in the BPMs for identifying when changes to Resource Classes are necessary and to allow stakeholders to consider and propose changes to Resource Classes during MISO's annual review of its BPM for Resource Adequacy.[274] Nonetheless, we acknowledge protesters' concern that NYISO includes in its tariff a provision that "[e]ach Capacity Accreditation Resource

[271] *See supra* note 190.

[272] *N.Y. Indep. Sys. Operator, Inc.*, 179 FERC ¶ 61,102 at PP 111-112; *PJM Interconnection, L.L.C.*, 176 FERC ¶ 61,056.

[273] PJM, Intra-PJM Tariffs, RAA, Schedule 9.2, (1.0.0), § B (ELCC Classes).

[274] MISO June 7 Answer at 18 (citing Joundi Test. at 37-38).

Class will be evaluated through the annual review,"[275] in contrast to MISO's proposal to define a similar review process in its BPMs. However, unlike NYISO, MISO proposes to name each of the Resource Classes in its Tariff, which puts parties on notice of the currently defined Resource Classes and gives parties the protection of the FPA section 205 process before any changes to the Resource Classes can occur. Further, pursuant to FPA section 206, parties may challenge the justness and reasonableness of the Tariff-defined Resource Classes to the extent they no longer reasonably reflect the MISO resource fleet. We note that, like MISO's proposal here, PJM's tariff includes a named list of ELCC Classes and does not include an express requirement for its ELCC Classes to be reviewed on a regular basis. We therefore find MISO's proposal just and reasonable, and consistent with Commission precedent.

131. Relatedly, we decline to require MISO to develop a metric that will signal when Resource Classes need to be evaluated or otherwise require MISO to develop a formal review process for the list of identified Resource Classes because proposed Schedule 53A defines Resources Classes based on fuel type and similar operating characteristics. Additionally, as it relates to Resource Class assignments, MISO's proposed Tariff language, as amended in the Deficiency Response, provides that Resource Class assignments will be based on the resource's registration within the commercial model, Power GADS registration, and data submitted to the EIA. We note that, if stakeholders identify that a resource does not fit into any identified Resource Class, MISO may propose changes to the list of identified Resource Classes. Moreover, proposed Schedule 53A includes a provision where market participants may dispute MISO's Resource Class assignment.

132. Regarding arguments for separate Resource Classes for hybrid/co-located resources, we agree with MISO that it is just and reasonable to not include separate Resource Classes for hybrid/co-located resources because, as MISO explains, it would be difficult to account for all the different combinations of constituent parts for such resources. We also believe that more granular Resource Classes to accommodate every type of hybrid/co-located resource could result in very small Resource Classes, which could lead to volatile resource accreditations.[276] Moreover, any potential relatively greater availability during times of greatest need for hybrid and co-located resources, and

[275] NYISO, NYISO Tariffs, NYISO MST, § 2.4 (Definitions – C) (30.0.0).

[276] Deficiency Response at 3 ("The new Resource Class would need to be capable of being modeled and of sufficient size in terms of both number of resources and aggregate capacity that there is little or no volatility in the Resource Class-level UCAP from year to year.").

therefore their reliability value, will be captured in Step 2, where such resources are expected to receive a larger portion of their respective Resource Class-level accreditation.

133. Regarding DTE Electric's and Clean Energy Parties' arguments for separate storage Resource Classes for different duration storage resources, we note MISO's stated commitment to evaluate the storage Resource Class in light of the relative duration of the storage resources then operating on the MISO system and to add additional storage Resource Classes if MISO determines that there are significant amounts of storage resources with varying levels of duration.[277] Further, we find that Step 2 will reasonably account for differences in performance between storage resources in the storage Resource Class.

134. Regarding protester arguments for a more granular list of Resource Classes, we find that MISO's further revisions included in its Deficiency Response to separate oil and gas resources into their own separate Resource Classes and establish another Resource Class specifically for dual fuel resources sufficiently addresses arguments regarding resources with different operating characteristics and availability being inappropriately included in the same Resource Class. As MISO explains, and we agree, dual-fuel gas and oil resources have greater availability and different operating characteristics than single-fuel gas or single-fuel oil resources due to their ability to leverage the benefits of both fuel types. Accordingly, we find MISO's proposal to define separate Resource Classes for oil, gas, and dual-fuel just and reasonable because it will reflect these resources' distinct contributions to resource adequacy.[278]

135. We find that, in order for MISO's proposed list of Resource Classes to be just and reasonable, it does not need to include a more granular subset of Resource Classes to differentiate between tracking and fixed solar array resources, or to otherwise differentiate between solar and/or wind resources based on their geographic location. We agree with MISO that protesters have not provided sufficient evidence that geographic differences impact performance to such a degree that MISO's proposal would be considered unjust and unreasonable. Although tracking solar arrays may have a greater capacity factor than fixed solar arrays, we are similarly not convinced, nor does the record demonstrate, that it is necessary for MISO to make that distinction through separate Resource Classes to find MISO's proposal just and reasonable. We agree with MISO that, for the purposes of capacity accreditation, tracking and fixed solar arrays are

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[277] *Id.*

[278] *See PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 42 (finding that PJM's marginal ELCC approach is just and reasonable because it "reflects the fact that dual fuel resources are more likely to be available than gas-only resources during certain system conditions.").

similar enough to be grouped together in the same Resource Class because they share the same fuel type and, independent of the tracking element, have similar operating characteristics. Furthermore, we find that Step 2 of MISO's DLOL accreditation methodology, which accounts for an individual resource's performance relative to its Resource Class, will reasonably account for the relative performance of fixed versus tracking solar array resources and resources in different geographic locations.[279]

136. Lastly, we find just and reasonable MISO's Tariff revisions requiring MISO to make a final Resource Class assignment determination within 10 business days of the dispute submission date.[280] We find that the inclusion of this deadline in the Tariff provides certainty and transparency to market participants regarding the Resource Class assignment. We also find just and reasonable MISO's proposed Tariff revisions as part of the Deficiency Response to include additional factors that MISO will use to evaluate Resource Class assignment disputes, including, but not limited to, registration within MISO's commercial model, GADS registration, and data submitted to the EIA.[281]

3. LOLE Model

a. Filing

137. MISO states that, because Step 1 of the DLOL-based methodology relies on MISO's LOLE model, several stakeholders recommended delaying the instant filing to later in 2024, after making a list of all planned LOLE modeling enhancements.[282] MISO explains that its current Schedule 53 does not use the LOLE model to accredit Schedule 53 Resources, but MISO does currently use the LOLE model to accredit wind resources.[283] MISO states that LOLE modeling improvements and enhancements are part of MISO's standard practice for its Resource Adequacy construct and are done in the ordinary course of business.[284] MISO recognizes that refinements to the model are necessary but disagrees that stakeholder support for the DLOL-based methodology

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[279] *See id.* P 108 ("We find that PJM's proposed resource-specific performance adjustment . . . will account for a resource's improved performance relative to its class, regardless of whether it is located inside or outside the PJM footprint.").

[280] Deficiency Response at 7.

[281] *Id.* at 6-7; MISO, Proposed FERC Electric Tariff, Schedule 53 (32.0.0), § 1.C.

[282] Transmittal at 36.

[283] *Id.* at 13 (citing Joundi Test. at 8).

[284] *Id.* at 36.

should be contingent on how the model performs. MISO states that it is committed to working with stakeholders to identify LOLE model improvements and enhancements, and MISO asserts that it has prioritized that effort, which it commenced at the February 28, 2024 Resource Adequacy Sub Committee meeting. However, according to MISO, LOLE model enhancements and improvements are not within the scope of this filing.

b. Comments and Protests

138. Arevon argues that MISO proposes to use LOLE to predict when loss of load hours will occur, not just predict frequency, and that MISO has not demonstrated that the LOLE study possesses the requisite level of fidelity.[285] Arevon contends that the proposed DLOL methodology does not have the necessary precision and cannot be relied on to produce just and reasonable compensation to ensure resource adequacy.[286]

139. MidAmerican notes that the differences in average performance, when compared to MISO's proposal, result in a substantial loss of accredited capacity for MidAmerican's generation fleet.[287] Moreover, MidAmerican argues that these results suggest that MISO's model and its parameters are unduly discriminatory because wind generation's expected performance far outweighs thermal generation's expected performance and because accreditation for wind resources is based on flawed historical data.[288] MidAmerican explains that, even though there is no correlation between wind speed (and therefore wind resource output) and temperature, the wind generation modeling prior to 2013 is based on the assumption that this correlation exists, which creates uncertainty and does not allow for adequate preparation.[289] MidAmerican states that MISO does not utilize historical wind production or wind speed information to develop the loss of load risk determination, but MISO relies on the correlation between wind production and temperature.[290] MidAmerican states that MISO will continue to improve its modeling, but that MISO has not mentioned development of hourly wind production MWh shapes

[285] Arevon Protest at 8.

[286] *Id.* at 9.

[287] MidAmerican Protest at 5-6.

[288] *Id.* at 6-7.

[289] *Id.* at 6-8.

[290] *Id.* at 7-8.

in future plans for modeling improvements, which would better match what the actual performance of the wind fleet is able to achieve with current technology.[291]

140. Midwest TDUs claim that MISO's LOLE modeling is too undeveloped to be used as part of determining capacity accreditation values.[292] Midwest TDUs state that refinements to MISO's LOLE modeling must be identified and addressed before the accreditation methodology can be implemented because they relate to accurately calculating Resource Class-level accreditation factors. Midwest TDUs aver that the accreditation values produced by the proposed accreditation methodology cannot be considered just and reasonable in the absence of a better understanding of MISO's LOLE modeling.[293] Midwest TDUs also note that the accreditation values produced by the proposed accreditation methodology cannot be understood or verified due to a lack of data transparency.[294] Midwest TDUs assert that the justness and reasonableness of MISO's filing is contingent on the performance of its LOLE modeling and that MISO's filing should be rejected until MISO has addressed the necessary modeling enhancements and data transparency.[295]

141. The Mississippi Commission asserts that MISO's proposal is incomplete because it fails to explain, among other things, how the LOLE model will change and how those changes will impact accreditation.[296]

142. OMS requests that MISO produce semi-annual status reports documenting its progress on its LOLE modeling enhancements.[297] The Michigan Commission agrees with OMS.[298] Similarly, Vistra requests that the Commission require MISO to provide increased transparency regarding LOLE model inputs relating to load, generation resources, and system parameters, including the adjustments that will be made from one Planning Year to the next to reflect future system conditions. Vistra asserts that

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[291] *Id.* at 8.

[292] Midwest TDUs Protest at 17.

[293] *Id.* at 18.

[294] *Id.* at 19.

[295] *Id.* at 19-20.

[296] Mississippi Commission Protest at 1.

[297] OMS Comments at 6-8.

[298] Michigan Commission Comments at 8.

stakeholders should also be given the opportunity, on an annual basis, to review and provide feedback on the data MISO includes in these three categories.[299]

143. Public Interest Organizations assert that MISO's reliance on the LOLE model for its proposed accreditation exposes the resulting accredited resource values to any flaws or biases of the LOLE model.[300] Public Interest Organizations state that MISO has recognized that the LOLE model requires improvements to address new types of system strains and note that any flaws or biases in the inputs for the LOLE will be reflected in the accredited values of resources.[301] Public Interest Organizations assert that the central role of the LOLE model in MISO's proposed methodology subjects it to the requirements of the rule of reason, arguing that MISO should have included more information about the LOLE model in the instant filing and that the Commission should not approve the instant filing until such information is included in the Tariff.[302]

c. MISO June 7 Answer

144. MISO states that, contrary to protesters' arguments, further enhancements to the LOLE model are not necessary to assess the justness and reasonableness of its proposal.[303] MISO asserts that the enhancements with which protesters take issue are improvements that MISO considers as part of its standard practice and that these anticipated enhancements do not make MISO's proposal unjust and unreasonable.[304] MISO states that its proposed three-year transition period will allow MISO and stakeholders to find and implement any needed improvements to the LOLE model prior to the implementation of the proposed DLOL accreditation methodology.[305]

145. In response to Midwest TDUs' arguments that the LOLE model is insufficient to determine capacity accreditation values, MISO states that the LOLE model has

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[299] Vistra Protest at 5-6.

[300] Public Interest Organizations Protest at 17.

[301] *Id.* at 17-18.

[302] *Id.* at 18.

[303] MISO June 7 Answer at 18-19, 21-22.

[304] *Id.* at 19.

[305] *Id.* at 20.

established LSEs' Reserve Requirements for 10 years.[306] MISO also notes that the LOLE model has established the average ELCC for wind and solar resources.[307] MISO states that it has initiated the stakeholder process on storage modeling and planned outage modeling and that possible enhancements from these discussions will be implemented before the DLOL accreditation methodology commences.

146. In response to OMS and Vistra, MISO states that its probabilistic modeling process is an annual process and is constantly evolving, noting that modeling improvements are made each year through the stakeholder process at the Resource Adequacy Subcommittee and Loss of Load Expectation Working Group. MISO states that it has initiated discussions with stakeholders regarding planned outage modeling, data transparency, and deliverability issues, and in the third quarter of 2024 will begin discussions on storage modeling.[308]

147. In response to Arevon's arguments that the LOLE model cannot determine when Critical Hours will occur and therefore cannot be relied on to produce accreditation values, MISO states that the LOLE model is used not to determine when Critical Hours will occur but to study the risks that create hours with expected unserved energy or tight operating conditions.[309] MISO further explains that the LOLE model is only used in Step 1 of the proposed accreditation methodology as part of the probabilistic analysis and that the Resource Class-level UCAP is allocated to individual resources based on actual performance.

d. Answers to MISO's June 7 Answer

148. MidAmerican argues that the MISO June 7 Answer failed to address the concern that MISO's reliance on a correlation between wind production and temperature is inaccurate.[310] MidAmerican asserts that this is a significant issue because the correlation that MISO relies on is a driver for wind resource accreditation values decreasing significantly under the new methodology. MidAmerican suggests that MISO should explain why such correlation is appropriate, considering the evidence presented by MidAmerican, and that MISO should also commit to improve the modeling of wind by using historical data and remove wind speed-to-temperature correlations. MidAmerican

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[306] *Id.* at 19.

[307] *Id.* at 20.

[308] *Id.* at 17-18.

[309] *Id.* at 21.

[310] MidAmerican Answer at 2 (citing MidAmerican Protest at 5).

argues that MISO's process will not produce just and reasonable rates due to the inappropriate reduction in wind resource accreditation values, as demonstrated by the evidence in its protest.[311]

149. Midwest TDUs argue that the Commission cannot disregard the significance of the LOLE model in establishing accreditation values.[312] Midwest TDUs challenge MISO's claim that the LOLE model's efficacy in determining resource adequacy requirements predisposes it to producing just and reasonable capacity accreditation values.[313] Midwest TDUs aver that MISO's LOLE model suffers from unevenly distributed planned outages among Resource Classes, flawed outage and load forecasting, and flawed storage modeling.[314] Midwest TDUs assert that these issues with the LOLE model will distort the accreditation values produced by the accreditation methodology unless the Commission rejects MISO's proposal until these issues are resolved.

150. Public Interest Organizations argue that MISO does not address the fact that the LOLE model is replacing the accreditation methodology as the core of the resource accreditation calculations.[315]

e. MISO July 9 Answer

151. MISO maintains that the LOLE model is ready for use in the proposed DLOL accreditation methodology, noting its performance and ability to produce robust results for the past decade.[316] MISO denies Midwest TDUs' argument that it is minimizing the role of the LOLE model in its proposal or that MISO has represented the LOLE model as being insignificant and not subject to Commission review.[317] MISO states that it publishes an annual LOLE study report with key assumptions and inputs to the LOLE model that is available to the public and to the Commission for review.[318] MISO asserts

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[311] *Id.* at 2-3 (citing MidAmerican Protest at 4-7).

[312] Midwest TDUs Answer at 9-10 (citing MISO June 7 Answer at 21-22).

[313] *Id.* at 10 (citing MISO June 7 Answer at 18-19).

[314] *Id.* (citing Midwest TDUs Protest at 17-18).

[315] Public Interest Organizations Answer at 3.

[316] MISO July 9 Answer at 5 (citing MISO June 7 Answer at 19).

[317] *Id.* (citing Midwest TDUs Answer at 8-9).

[318] *Id.* at 3, 5-6.

that having the assumptions and inputs to the LOLE model outside of the tariff does not limit Commission oversight authority.[319] MISO contends that its acknowledgement of ongoing improvements to the LOLE model does not render the model unfit for use in the proposed accreditation methodology.

f. Responsive Pleadings

152. Midwest TDUs state that MISO's claim—that its yet-to-be-developed LOLE modeling improvements may produce just and reasonable results by the time the DLOL methodology is implemented—is insufficient for MISO to meet its statutory burden and for the Commission to fulfill its statutory duty of ensuring just, reasonable, and not unduly discriminatory rates.[320]

153. Public Interest Organizations reiterate that MISO's proposal to use the LOLE model means that any flaws in the inputs used in the LOLE analysis will manifest directly as flaws in the accredited values of resources, which is a particular issue given new types of system strains MISO has experienced in the past 10 years and which MISO has acknowledged necessitate further model improvements.[321]

g. MISO October 4 Answer

154. MISO states that it is already working with stakeholders and software vendors to make LOLE model improvements but that its LOLE model is already a robust and Commission-accepted model.[322] MISO argues that any enhancements to the model are not necessary for the Commission to find the proposed DLOL methodology just and reasonable, and the fact that the LOLE model benefits from such enhancements does not mean that the model is not sufficiently developed to be used for capacity accreditation.[323] MISO notes that, despite protests, several stakeholders and market participants have

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[319] *Id.* at 6.

[320] Midwest TDUs Response to MISO Deficiency Response at 8.

[321] Public Interest Organizations Response to MISO Deficiency Response at 17-18.

[322] MISO October 4 Answer at 11.

[323] *Id.* at 11, 13.

expressed support for MISO's movement to the DLOL methodology while acknowledging that the LOLE model can be improved.[324]

h. Commission Determination

155. We find that MISO's reliance on the LOLE model as part of the proposed DLOL accreditation methodology is just and reasonable and not unduly discriminatory or preferential. We also note MISO's stated commitment to work with stakeholders to identify LOLE model improvements and enhancements.[325]

156. We disagree with protesters that the LOLE model is not yet sophisticated enough for use under MISO's proposed DLOL accreditation methodology. As MISO explains, the LOLE model has been used for the purposes of determining resource adequacy requirements (i.e., setting the Planning Reserve Margin and LSEs' Reserve Requirements) for over 15 years and MISO has been improving its model during that time. Specifically, regarding MidAmerican's argument concerning the modeling of wind resources, we note that MISO does not propose changes to the LOLE model, and we agree with MISO that the use of the same LOLE model in the DLOL accreditation methodology, particularly in its capacity as a probabilistic model, is a reasonable application of the LOLE model. Moreover, the record fails to demonstrate that using the LOLE model renders MISO's proposal unjust and unreasonable. Additionally, we find that basing both resource adequacy requirements and resource accreditation on LOLE has the benefit of aligning demand and supply side assumptions.

157. We also find, as further discussed below,[326] that it is just and reasonable for MISO not to include the LOLE model in the Tariff and for MISO to continue its existing practice of regularly enhancing the LOLE model outside of the Tariff. We therefore decline to require MISO to make additional enhancements to the LOLE model prior to implementation of the proposed DLOL accreditation methodology, beginning with the 2028/2029 Planning Year.

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[324] *Id.* at 12.

[325] Transmittal at 36.

[326] *See infra* section IV.B.8.

4. Outages

a. Filing

158. MISO specifically states that certain foundational aspects of its current Schedule 53 remain unchanged and, as relevant here, the outage exemption provisions.[327] MISO proposes one additional provision to section III of Schedule 53A that is not otherwise carried over from the current Schedule 53. MISO proposes that "Resource in the Solar Resource Class shall not be eligible for Tier 1 and Tier 2 planned outage Exemptions for Generator planned outages and Proposed Generator planned outages that are scheduled during nighttime hours for each Season."[328] Mr. Joundi explains that solar resources are treated differently because allowing solar resources to receive an exemption for planned outages taken during nighttime hours would distort the accredited capacity value of solar resources, as they would appear to be available when it would otherwise be impossible to inject energy onto the grid.[329]

159. Mr. Joundi states that planned outages are modeled using maintenance rates for each resource in the probabilistic model and will therefore reduce accreditation.[330] Mr. Joundi explains that incorporating planned outages in the model will appropriately make resources unavailable to meet load for a period that correlates with their historic average maintenance rates, which is essential to identify periods of reliability risks, and allows the simulated outcomes to better reflect resource expected availability.[331]

160. Mr. Joundi states that, although exemptions for planned outages under current Schedule 53 provide an incentive for resource owners to plan outages for their resources in advance and at times most beneficial to operational reliability, applying exemptions for planned outages in the prospective probabilistic analysis under Schedule 53A to calculate Resource Class-level UCAP would be inappropriate.[332] Mr. Joundi explains that the probabilistic model needs to identify all possible risks that may impact the reliability of the system; therefore, all outages need to be captured to ensure target system reliability is maintained. Mr. Joundi asserts that, although planned outages are included in each of the

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[327] Transmittal at 22; Joundi Test. at 31.

[328] MISO, Proposed FERC Electric Tariff, Schedule 53A (31.0.0), § III.

[329] Joundi Test. at 44.

[330] *Id.* at 39.

[331] *Id.* at 39-40.

[332] *Id.* at 41.

two steps of the proposed accreditation methodology, they are treated differently so as not to constitute double counting.[333] Mr. Joundi asserts that Resource Class-level UCAP determines the size of the pie and individual resource ISAC will determine how that pie is divided. Mr. Joundi explains that all resources within a Resource Class are treated the same with respect to outages and their ISAC calculation. Mr. Joundi states that properly planned resource outages are eligible to receive an exemption for the purposes of the ISAC calculation under Schedule 53A, which incentivizes market participants to minimize the number of planned outages during expected periods of highest reliability risk, and resources that plan their outages well in advance will receive a larger portion of the Resource Class-level UCAP.

b. Comments and Protests

161. Clean Energy Parties assert that MISO's proposed treatment of planned outages is unduly discriminatory because it does not allocate outages to Resource Classes that are on outage each day.[334] Clean Energy Parties explain that a Resource Class that is scheduled to be in a planned outage on days where loss of load hours are likely will have a lower accreditation than a Resource Class that has a planned outage scheduled before or after the days where loss of load hours are likely to occur. Clean Energy Parties assert that this treatment of Resource Classes in planned outage scheduling is inequitable because it fails to account for outage scheduling trends observed in actual operations. Clean Energy Parties state that MISO should develop a more impartial methodology of accounting for planned outages and that MISO should include this methodology in its Tariff.[335] Clean Energy Parties state that MISO's proposed planned outage parameters, by not attempting to allocate outages to Resource Classes that are on daily outages, creates a disconnect between planned outage scheduling and reasonably expected operations that ultimately removes reliability from a resource's accreditation.[336]

162. Entergy and Cleco note that the Strategic Energy Risk Valuation Model (SERVM), which MISO uses to conduct the LOLE analysis, fails to proportionately allocate outage scheduling decisions to each Resource Class, which can lead to disproportionate accreditation values across Resource Classes. Entergy and Cleco take issue with how planned outages are distributed across Resource Classes. Specifically, Entergy and Cleco argue that an equitable planned outage methodology must assume that

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[333] *Id.* at 42.

[334] Clean Energy Parties Protest at 13.

[335] *Id.* at 14.

[336] *Id.* at 20-21.

all resource types have equal likelihoods of planned outages during Critical Hours.[337] Entergy and Cleco note that MISO staff will review the distribution of planned outages for all resource types and assert that the Commission should condition acceptance of MISO's proposal on further stakeholder processes related to this review. The Mississippi Commission echoes Entergy and Cleco's concerns, noting that MISO's software does not equally distribute planned outages across Resource Classes.[338]

163. Consumers Energy states that MISO arbitrarily limits the proposed Tier 1 and Tier 2 outage exemption that excludes planned outage hours from the capacity accreditation to full outages without explaining why partial outages do not receive the same treatment.[339] Consumers Energy asserts that a unit with a planned partial outage will be de-rated and lose capacity, despite a planned partial outage having the same advance planning and approval timeline as a full outage. Consumers Energy states that it is unreasonable not to accredit a resource if it made prearrangements for the outage work, which gives MISO time to make any adjustments. Consumers Energy also states that it is unreasonable and unfairly prejudicial to not extend the outage exemption to planned partial outages.

164. DTE Electric states that MISO should continue to engage in the stakeholder process to address its planned outage modeling efforts.[340] DTE Electric states that MISO should reevaluate its planned outage considerations within the LOLE model to ensure equitable treatment among Resource Classes.[341]

165. OMS states that MISO's proposal will treat solar resources differently with regard to planned outage exemptions, and OMS encourages MISO to assess whether language related to planned fuel unavailability should be similarly applied to other Resource Classes.[342] OMS explains that MISO directly calls out solar resources' fuel unavailability because of their known profiles during nighttime hours, but OMS argues that further planned fuel unavailability scenarios for other resources should be evaluated as well. OMS presents a possible situation where generation owners plan outages around a time of known fuel unavailability to take advantage of the planned outage exemption. OMS explains that the current proposed exemption language could incentivize generator

[337] Entergy and Cleco Protest at 6.

[338] Mississippi Commission Protest at 4.

[339] Consumers Energy Protest at 5.

[340] DTE Electric Protest at 4.

[341] *Id.* at 4-5.

[342] OMS Comments at 10.

owners to plan outages during periods of known fuel unavailability to be eligible for the planned outage exemption.

166. Midwest TDUs assert that MISO has failed to demonstrate that its proposed DLOL methodology, which directly accounts for longer outages as part of the accreditation calculation, is just and reasonable when applied in conjunction with the current 31-day capacity replacement obligation.[343] Specifically, Midwest TDUs explain that the proposed accreditation methodology will result in lower seasonal accredited capacity for individual resources that belong to a Resource Class with longer planned outages because the proposed methodology relies on planned outages as an indicator of a Resource Class's contribution to reliability.[344] Midwest TDUs argue that MISO does not explain how accounting for longer outages in the accreditation calculation operates in MISO's seasonal resource adequacy construct, much less how it is just and reasonable in light of the current 31-day capacity replacement obligation.[345] Midwest TDUs explain that the proposed accreditation methodology will burden resources in Resource Classes that have had their accreditation reduced due to those Resource Classes' extended outages because those same resources are also under the 31-day replacement obligation.[346] Midwest TDUs state that MISO's replacement obligation should be reevaluated in the context of MISO's proposal and its accreditation for Resource Classes that have extended outages. Midwest TDUs state that MISO has made no such evaluation in its filing.[347] Midwest TDUs argue that MISO should consider the interaction between its proposed accreditation methodology with respect to accrediting resources that are subject to extended outages with its current capacity replacement requirement and demonstrate that it is just and reasonable for the proposed methodology to coexist with the capacity replacement requirement before MISO's proposal can be accepted.[348]

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[343] Midwest TDUs Protest at 20-21. *See* MISO, FERC Electric Tariff, Module E-1, § 69A.3.1.h (42.0.0).

[344] Midwest TDUs Protest at 21-22.

[345] *Id.* at 22.

[346] *Id.* at 23.

[347] *Id.* at 24.

[348] *Id.* at 26-27.

167. Minnesota Power states that MISO's proposal fails to provide a means for long-term planning due to the complexity of the LOLE model.[349] Minnesota Power states that it has encountered issues with communicating the details of the proposed methodology to stakeholders and attributes challenges related to resource commitments to the incomplete accreditation methodology. MISO Cities and Communities similarly state that MISO's filing is unclear regarding the LOLE refinements related to storage modeling, which precludes stakeholders from making investment decisions across a range of resources.[350]

c. MISO June 7 Answer

168. In response to Midwest TDUs' argument that MISO's proposal fails to demonstrate how longer outages are accounted for when determining the Resource Class-level accreditation, MISO states that its proposal suitably factors in all reasons for resource unavailability, including planned and forced outages, consistent with its existing Tariff provisions.[351] MISO explains that the 31-day capacity replacement obligation is completely separate from resource accreditation, and therefore Midwest TDUs' arguments related to the 31-day capacity replacement obligation are outside the scope of the proceeding. However, MISO notes that it has initiated stakeholder discussions on whether changes are needed to the capacity obligation requirements, including whether to establish provisions related to partial outages and/or derates.

d. Answers to MISO's June 7 Answer

169. Midwest TDUs aver that MISO's LOLE model suffers from unevenly distributed planned outages among Resource Classes, flawed outage and load forecasting, and flawed storage modeling.[352] Midwest TDUs assert that these issues with the LOLE model will distort the accreditation values produced by the accreditation methodology unless the Commission rejects MISO's proposal until these issues are resolved.

170. Midwest TDUs reiterate concerns over how the proposed accreditation methodology will work with the current 31-day capacity replacement obligation.[353] Midwest TDUs explain that resources with longer outages will receive lower accreditations and that it is unduly burdensome and discriminatory to subject these

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[349] Minnesota Power Protest at 6.

[350] MISO Cities and Communities Protest at 2.

[351] MISO June 7 Answer at 22.

[352] Midwest TDUs Answer at 10.

[353] *Id.* at 11.

resources to the capacity replacement obligation as well. Midwest TDUs challenge MISO's claim that the capacity replacement obligation is separate from resource accreditation and outside the scope of this filing.[354]

e. MISO July 9 Answer

171. MISO reiterates that the arguments related to its 31-day capacity replacement obligation are outside the scope of this proceeding.[355] MISO states that the Commission accepted the capacity replacement obligation when it accepted MISO's seasonal construct and that MISO is not proposing any changes to the obligation in this proceeding.[356] MISO asserts that Commission review is restricted to the proposed accreditation methodology and not the capacity replacement obligation.[357]

f. Deficiency Response and Responsive Pleadings

172. In response to a question on how MISO's proposal to apply the current treatment of planned outages under the proposed accreditation methodology is just and reasonable, MISO explains that its analysis of how planned outages would affect accreditation compared the model's input parameters against their effect on the accreditation of each Resource Class.[358] MISO states that the model parameters that drive planned maintenance are annual planned maintenance rates. MISO compares (1) how the need for annual maintenance is distributed across Resource Classes and (2) how the effect of planned outages on accreditation is distributed across Resource Classes in the Spring and Winter Seasons. According to MISO, the impact of planned maintenance on accreditation during the Summer and Fall Seasons is negligible.[359] MISO asserts that the impact of planned maintenance across Resource Classes aligns with the inputs that drive maintenance, or planned outage rates.[360] For example, MISO's analysis presented to stakeholders shows that the Coal Resource Class is responsible for 35.5% of MWh

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[354] *Id.* at 12.

[355] MISO July 9 Answer at 11.

[356] *Id.* (citing *Midcontinent Indep. Sys. Operator, Inc.*, 180 FERC ¶ 61,141, at P 334 (2022)).

[357] *Id.* at 12.

[358] Deficiency Response at 16.

[359] *Id.* at 17.

[360] *Id.* at 16.

planned maintenance across the year and is assigned 32.3% and 35.8% of the accreditation reduction in Spring and Winter, respectively.[361] MISO proposes a post-processing adjustment of the LOLE results prior to the accreditation calculations to ensure that the impact of planned maintenance on accreditation for each Resource Class aligns with the contribution of each Resource Class to total maintenance need.[362]

173. In response to Commission staff's request to explain whether certain Resource Classes are more at risk of a reduction in Resource Class-level UCAP based on MISO's planned outage modeling, MISO explains that, when the planned maintenance adjustment is applied to large Resource Classes, it results in a relatively small MW change in accreditation (e.g., 7% of the ICAP of the Nuclear Resource Class); however, the percentage change for Resource Classes with few resources can be as much as 16%.[363]

174. Entergy and Cleco state that, although they support MISO's continued stakeholder engagement regarding the impact of planned outages on Resource Classes, Entergy and Cleco request that the Commission require MISO to make a subsequent FPA section 205 filing because the planned outage methodology is a fundamental element of MISO's proposed accreditation methodology.[364]

175. Midwest TDUs state that the Deficiency Response confirms that MISO's DLOL methodology specifically accounts for longer outages as part of the Resource Class-level UCAP determination but fails to explain how MISO will operate in a just and reasonable manner in combination with its 31-day capacity replacement obligation.[365]

g. MISO October 4 Answer

176. MISO states that it disagrees that its planned maintenance adjustment should be included in the Tariff. MISO states that, in its Deficiency Response, it recommended adoption of the planned maintenance adjustment to ensure that the modeling software's methodology for selecting the planned maintenance timing of a particular resource does

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[361] *Id.* at 16-17, fig. 2 (citing MISO*, LOLE Modeling Enhancement: Planned Outage Modeling, RASC* (July 10, 2024), https://cdn.misoenergy.org/20240710%20RASC%20Item%2006c%20LOLE%20Modeling%20Enhancements%20-%20Planned%20Outage%20Modeling637631.pdf).

[362] *Id.* at 17-18, tbl. 6.

[363] *Id.* at 18.

[364] Entergy and Cleco Response to MISO Deficiency Response at 5.

[365] Midwest TDUs Response to MISO Deficiency Response at 9.

not overly impact the accreditation of any given Resource Class beyond the contribution of the Resource Class toward the total need of planned outages across all Resource Classes. MISO explains that the planned maintenance adjustment will be a post processing step that occurs prior to the determination of Resource Class-level UCAP.[366]

177. MISO contends that Midwest TDUs continue to inappropriately tie the previously approved 31-day capacity replacement obligation to the DLOL-based methodology and use that as a basis to oppose the proposal. MISO reiterates that such claims are outside of the scope of the proceeding and should not be used as a basis for denying MISO's proposal to move to the DLOL-based accreditation methodology.[367]

h. Commission Determination

178. We find that MISO's proposed modeling of planned outages, as well as its outage exemption provisions, are just and reasonable and not unduly discriminatory or preferential.

179. Protesters raise two separate issues involving MISO's planned outage provisions: (1) whether MISO's Tier 1 and Tier 2 exemption process for planned outages approved as part of MISO's Schedule 53 accreditation proposal, which will be applied to Step 2 of the DLOL accreditation process for Schedule 53A Resources, remains just and reasonable; and (2) whether MISO appropriately models planned outages as part of its Resource Class-average calculations under Step 1 of the DLOL accreditation process. Regarding protesters' arguments that exemptions for certain full planned outages should be extended to partial planned outages, such arguments are outside the scope of the instant proceeding, as these outage provisions were accepted in the proceeding that established MISO's seasonal construct, and MISO is not proposing any changes to its outage provisions in the instant filing beyond the nighttime hours exclusion for solar resources.[368] Regarding protesters' arguments that the impact of planned outages is unevenly distributed across Resource Classes under Step 1, we find that MISO has sufficiently demonstrated that its proposal to reflect planned maintenance for each Resource Class in Step 1 corresponds to the resulting impact on accreditation. This

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[366] MISO October 4 Answer at 15.

[367] *Id.* at 15-16.

[368] *See Am. Mun. Power, Inc. v. FERC*, 86 F.4th 922, 936-37 (D.C. Cir. 2023) (finding that a Commission conclusion that a cost allocation issue was beyond the scope of the proceedings was "consistent with reasoned decisionmaking," where the Commission explained that there were no revisions proposed to the relevant provisions and the Commission did not have authority to revise, under section 205, the unchanged cost allocation provisions of Schedule 12 of the PJM tariff).

means that, under MISO's proposed DLOL accreditation methodology, a Resource Class's percentage share of total annual maintenance is approximately the same as the percentage reduction in that Resource Class's UCAP.[369] Moreover, to prevent the random nature of planned outage timing from disproportionately affecting any Resource Class, MISO will adjust the LOLE results to ensure that the percentage impact of planned maintenance on accreditation for each Resource Class aligns with each Resource Class's contribution to the total annual maintenance need.[370] Therefore, contrary to protesters' assertions, no single Resource Class would receive a disproportionate reduction in Resource Class-level UCAP based on planned outages.

180. We believe that protesters' concerns regarding the potential gaming of planned outage exemptions based on times of known fuel unavailability are speculative. MISO's outage exemption provisions are unchanged from its existing Tariff except for the provision to prevent such gaming by solar resources by limiting planned outages to daylight hours. We are not persuaded that a similar gaming opportunity regarding known fuel unavailability exists for other resource types.

181. Regarding protesters' concerns regarding how MISO's accreditation proposal will operate in conjunction with MISO's 31-day capacity replacement obligation, we agree with MISO that the 31-day capacity replacement obligation is separate from the resource accreditation process. The capacity replacement obligation ensures that any capacity shortfalls are addressed within 31 days; therefore, the capacity replacement obligation is designed to ensure short-term reliability, whereas capacity accreditation is based on the recent historical performance and availability of resources. We are unpersuaded by Midwest TDUs' argument that a resource with extended outages will be burdened by receiving a lower accreditation and by being subject to the 31-day capacity replacement obligation because these obligations serve different purposes. The proposed accreditation methodology accredits resources for their marginal reliability contribution during periods of highest risk and must factor in planned outages in its probabilistic analysis to accurately reflect resource availability during these periods. It is thus reasonable for a resource that undergoes extended outages to receive a lower accreditation. On the other hand, the 31-day capacity replacement obligation ensures that a resource that is expected to be unavailable for more than 31 days in a Season replaces its capacity. We note that the Commission made a similar determination when it accepted MISO's seasonal resource adequacy construct, finding "that it is appropriate for a resource on a planned outage that has not received an exemption that lasts more than 31 days in a Season to

[369] *See* Midwest TDUs Response to MISO Deficiency Response at 9.

[370] Deficiency Response at 17.

both trigger the Capacity Replacement Non-Compliance Charge and to receive a reduction to its capacity accreditation."[371]

5. Storage Accreditation and Modeling

a. Filing

182. MISO states that its LOLE model treats storage resources as energy-limited resources.[372] MISO explains that, currently, pumped storage resources are modeled as conventional resources with seasonalized forced outage rates, an annualized planned outage rate, and monthly capability, and ESRs (e.g., batteries) are modeled as native SERVM storage resources with characteristics that include effective capacity, storage size, and charge-discharge cycle efficiency.[373] Further, MISO states that ESRs are dispatched in the LOLE model when load cannot be served by other resources, except emergency resources, and that the probabilistic model keeps track of the stored energy in these resources and will allow generation until the energy is exhausted (i.e., the model does not consider dispatching storage until after capacity from thermal and renewable resources is considered deployed). MISO notes that, at that point, the model recognizes that storage resources will need to replenish their stored energy before they are available for dispatch in the model.[374]

183. MISO states that LOLE model enhancements and improvements are not within the scope of the instant filing, but, as part of its LOLE modeling enhancement effort, MISO intends to continue to work with stakeholders to evaluate how the modeling of storage resources in the LOLE model needs to be adjusted to reflect how they are being operated and how their energy-limited nature may influence the determination of risk across simulated hours.[375]

b. Comments, Protests, and Answers

184. Alliant Energy states that it is concerned with how storage is being modeled and whether MISO has oversimplified battery storage performance during Critical Hours,

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[371] *Midcontinent Indep. Sys. Operator, Inc.*, 180 FERC ¶ 61,141 at P 340.

[372] Joundi Test. at 53.

[373] *Id.* at 53-54.

[374] *Id.* at 54.

[375] *Id.*

thereby misrepresenting the accreditation rate.[376] DTE Electric states that ESR modeling assumptions impact the "size of the pie" for ESRs and that their capability to shift Critical Hours also impacts accreditation for all other resource types.[377] DTE Electric contends that ESRs are modeled as four-hour resources, fully charged and dispatched as soon as a loss of load hour is identified in the LOLE model, and that, under this assumption, if loss of load events last longer than four hours within a single day, then that significantly impacts ESR accreditation.[378] According to DTE Electric, MISO must continue to improve ESR modeling and balance attempting to mirror what would happen in operations with the forward-looking signals that the capacity accreditation process provides.

185. Entergy and Cleco and the Mississippi Commission state that MISO does not explain how the model will dispatch the Storage Resource Class.[379] Entergy and Cleco explain that, although MISO states that its proposed reforms are to better credit resources for their contributions to reliability, that may not be the case for the Storage Resource Class due to these modeling issues.[380] Entergy and Cleco argue that the Commission should condition any approval of MISO's proposal on MISO ensuring that the reliability value of the Storage Resource Class is not devalued, and filing the final methodology with the Commission.[381] MISO Cities and Communities state that the lack of clarity related to storage modeling reduces the ability to make clear investment decisions on energy storage, hybrid resources, and renewable resources.[382] Entergy and Cleco and Minnesota Power refer to a study by Invenergy and NextEra that showed that the Storage Resource Class can receive accreditation contributions for individual simulated Critical Hours or loss of load events ranging from 7% to 65% with no difference in the Storage Resource Class's reliability contribution.[383] Minnesota Power and MISO Cities and

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[376] Alliant Energy Protest at 10.

[377] DTE Electric Protest at 13-14.

[378] *Id.* at 14.

[379] Entergy and Cleco Protest at 2; Mississippi Commission Protest at 4-5.

[380] Entergy and Cleco Protest at 8.

[381] *Id.* at 2-3, 8.

[382] MISO Cities and Communities Protest at 2.

[383] Entergy and Cleco Protest at 7-8; Minnesota Power Protest at 5-6 (citing Presentation, DLOL Enhancements Proposal, August 2023, https://cdn.misoenergy.org/2023082223%20RASC%20Item%209bii%20DLOL%20Enha

Communities argue that MISO needs to address Storage Resource Class accreditation now, given the impacts it will have on accreditation of other resources whose reliability value can be enhanced when coupled with storage.[384]

186. Clean Energy Parties state that, unlike PJM's and NYISO's models, MISO's model will not accredit energy-limited resources based on their marginal contribution to reliability during high-risk periods.[385] Clean Energy Parties explain that Critical Hours are set for periods of system stress after energy-limited resources have been exhausted and, as a result, these energy limited resources are not accounted for by MISO's proposed accreditation methodology.[386] Clean Energy Parties further contend that MISO fails to account for the ability of storage and hybrid resources to shift output to mitigate loss of load risk during the high-risk operating period because MISO will fully exhaust energy-limited resources during net peak load periods and assign accreditation values based on modeled contributions for periods of system stress that occur after the output is exhausted.[387] According to Clean Energy Parties, MISO will inappropriately limit the compensation of energy-limited resources by incorrectly assuming that they cannot provide value during times of peak need.[388] Therefore, Clean Energy Parties assert that the model does not assess the impact of the addition of the other resources that may contribute to preventing the loss of load event and significantly undervalues these resources.[389]

187. Cordelio argues that MISO's proposal could potentially exclude distributed energy resources (DER) from receiving accreditation because External Resources are excluded from the definition of Schedule 53A Resources.[390] Cordelio contends that, although MISO states that External Resources are capacity resources located outside MISO but committed to the MISO capacity market, DERs that are interconnected to a MISO transmission owner's distribution system are within the MISO footprint and should not be

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ncement% 20 Proposal 629916.pdf).

[384] Minnesota Power Protest at 6; MISO Cities and Communities Protest at 2.

[385] Clean Energy Parties Protest at 6.

[386] *Id.* at 6-7.

[387] *Id.* at 6 (citing Stewart Test. at 9-12).

[388] *Id.* at 7-8.

[389] *Id.* at 6-7 (citing Stewart Test. at 9).

[390] Cordelio Protest at 5.

treated differently than resources that are interconnected to the transmission system.[391] Cordelio asserts that MISO's proposal could accredit storage resource based on location, contrary to Order No. 841, and could also create the possibility of undue preference in favor of incumbents' storage systems.[392] Cordelio states that, to the extent that MISO's proposal would include DERs located within the MISO footprint, MISO's approach is consistent with Order No. 2222, but to the extent that MISO believes that DERs located within the MISO footprint should not be included, Cordelio believes the accreditation rules are not just and reasonable because they unduly discriminate against such resources in contravention of Order No. 2222.[393] Cordelio also states that, although the Commission found that "MISO has sufficiently justified excluding External Resources from the Schedule 53 Resource definition and SAC accreditation," the Commission did not address whether MISO can include DERs in the definition of External Resources.[394]

188. Additionally, Cordelio argues that MISO should allow netting in the accreditation process because it would benefit the grid by lowering the coincident peak demand.[395] Cordelio asserts that there is a discrepancy between how the Commission directs entities to report data in FERC Form No. 714 and how MISO LSEs report their data in FERC Form No. 1.[396] According to Cordelio, MISO directs its LSEs to provide a gross load amount by backing out any DERs,[397] and the Commission has stated that local balancing

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[391] *Id.* at 6.

[392] *Id.* (citing *Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, Order No. 841, 162 FERC ¶ 61,127, at P 78 (2018), *order on reh'g*, Order No. 841-A, 167 FERC ¶ 61,154 (2019), *aff'd sub nom. Nat'l Ass'n of Regul. Util. Comm'rs v. FERC*, 964 F.3d 1177 (D.C. Cir. 2020)).

[393] Clean Energy Parties Protest at 7 (citing *Participation of Distributed Energy Res. Aggregations in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, Order No. 2222, 172 FERC ¶ 61,247 (2020), *order on reh'g*, Order No. 2222-A, 174 FERC ¶ 61,197, *order on reh'g*, Order No. 2222-B, 175 FERC ¶ 61,227 (2021)).

[394] Cordelio Protest at 7 (citing *Midcontinent Indep. Sys. Operator, Inc.*, 180 FERC ¶ 61,141 at P 280).

[395] *Id.* at 8-9.

[396] *Id.* at 8.

[397] *Id.* (citing MISO Resource Adequacy BPM (BPM-011), § 3.1.8.2 ("Unless specifically designated as Point-To-Point Transmission Service, all Network Customer Load is reported as Network Load. This includes Grandfathered Load or Load served by Behind-the-Meter Generation.")).

authorities should net DER with load for FERC Form No. 714 reporting.[398] Cordelio states that ISO New England, Inc. nets out behind-the-meter load, including electric storage, from network service charges and that the Commission found that to be just and reasonable because "unregistered behind-the-meter generation reduces the Network Customer's load that must be served from the transmission system."[399] Cordelio claims that PJM has a similar practice.[400]

c. MISO June 7 Answer

189. MISO states that the proposed transition timeline in the instant filing provides sufficient time to address Cordelio's concerns regarding the accreditation of DERs—that proposed Schedule 53A could exclude DERs from receiving accreditation.[401] MISO explains that its Order No. 2222 compliance filing is currently pending before the Commission and that Phase I of its Order No. 2222 compliance plan permits DERs to participate in MISO's markets as a Demand Response Resource-Type I. MISO notes that Demand Response Resource-Type I and Demand Response Resource-Type II are both included in Schedule 53A. MISO states that it will address the accreditation of Distributed Energy Aggregated Resources when its Order No. 2222 compliance proposal is accepted, but notes that participation of Distributed Energy Aggregated Resources is planned for the 2030/2031 Planning Year.

d. Deficiency Response and Responsive Pleadings

190. In response to a question on how storage resources' availability and dispatch will be modeled under the proposed accreditation methodology, MISO states that it continues to use the LOLE model as accepted by the Commission and contained in the Tariff, and it is currently reviewing the modeling and assumptions for storage resources in the Resource Adequacy model and plans to work with stakeholders before implementing any improvements.[402] MISO explains that pumped storage resources are modeled as

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[398] *Id.* (citing *Refins. to Policies & Procs. for Mkt-Based Rates for Wholesale Sales of Elec. Energy, Capacity & Ancillary Servs. by Pub. Utils.*, Order No. 816-A, 155 FERC ¶ 61,188 (2016) ("The Commission stated that the output of behind-the-meter generation should be reflected in the load data reported in the FERC Form No. 714, which reflects the fact that the load is lower than it otherwise would be if a portion of the load were not served by behind-the-meter generation.")).

[399] *Id.* at 9 (citing *ISO New England Inc.*, 178 FERC ¶ 61,086, at P 51 (2022)).

[400] *Id.* (citing PJM, Intra-PJM Tariffs, OATT § 34.2 (0.0.0); *id.* § 34.3 (1.0.0)).

[401] MISO June 7 Answer at 33 (citing Cordelio Protest at 5).

[402] Deficiency Response at 14; MISO, FERC Electric Tariff, Module E-1,

conventional resources and that other storage resources are modeled as native SERVM storage resources.[403] MISO further explains that SERVM tracks the storage reservoir's state of charge throughout the simulation by tracking the charge-discharge timeline, and therefore SERVM also accounts for efficiency losses and adheres to the amount of energy that can be carried in the reservoir between hours with excess capacity and hours with capacity deficiency.

191. MISO states that SERVM determines when to deploy storage through the following order of operations: (1) capacity from thermal and renewable resources is considered deployed; (2) storage capacity is considered and deployed, if necessary; and (3) emergency resources are deployed last. Accordingly, MISO explains that storage resources will generate when there is insufficient thermal and renewable capacity to meet the load in an hour, provided that storage resources have energy available. MISO asserts that it is considering how different modeling practices regarding the timing of storage deployment during times of need may affect accreditation, and that it will continue to work with stakeholders to understand how storage deployment and other modeling assumptions affect accreditation.[404] According to MISO, storage scheduling can influence the timing of risk and resource adequacy metrics in the following way: (1) on a first-come, first-served basis, storage is deployed during increasing shortfall hours, not during peak and declining shortfall hours; (2) under a minimized duration approach, storage is deployed during increasing and declining shortfall hours, not during peak shortfall hours; and (3) under a minimized-depth approach, storage is deployed during peak shortfall hours, not increasing and decreasing shortfall hours.[405]

192. In response to a request to clarify use of the term behind-the-meter generation in Schedule 53A compared to the defined term Behind the Meter Generation in Module A of the Tariff, MISO explains that the term behind-the-meter generation was intended to have the same meaning under Schedule 53A as the Module A definition for Behind the

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§ 68A.2.1 (34.0.0).

[403] Deficiency Response at 14. Pumped storage resources are modeled with the following attributes: effective capacity (MW, defined seasonally), forced outages rates (as the percentage of time each unit is unavailable per season), and planned maintenance rates (as the percentage of the time unavailable per year). Other storage resources are modeled with the following attributes: effective capacity (MW, defined seasonally), storage size (in MWh), and charge-discharge cycle efficiency (%).

[404] *Id.* at 14-15.

[405] *Id.* at 15, fig. 1 (citing ESIG, *Energy Systems Integration Group Report*, https://www.esig.energy/new-resource-adequacy-criteria/).

Meter Generation.[406] MISO therefore proposes to further revise section I.C of Schedule 53A to change the term from behind-the-meter generation to Behind the Meter Generation.[407]

193. Public Interest Organizations argue that, although MISO indicates that it will use the current modeling approach for storage until a new one is developed, MISO has not provided sufficient information to determine how storage accreditation will change.[408] Public Interest Organizations state that, if the Commission accepts MISO's proposal, the Commission should require MISO to file any changes to its storage modeling methodology with the Commission.[409]

194. Clean Energy Parties reiterate that MISO's proposal fails to account for the ability of storage and hybrid resources to shift output to mitigate loss of load risk during the high-risk operating period because MISO's proposed "model does not assess the impact of the addition of the other resources that may contribute to preventing the loss of load event . . . result[ing] in a significant undervaluation of these resources."[410] Clean Energy Parties argue that energy-limited resources cannot receive credit for preventing the loss of the load even if the resource has the capability to prevent the event, which, according to Clean Energy Parties, results in the undervaluation of such resources.[411]

195. Cordelio argues that MISO should clarify that distribution-connected battery energy storage systems will be included in the same Resource Class as transmission-connected battery energy storage systems (i.e., the Storage Resource Class) and that all battery energy storage systems, regardless of where they interconnect, will be treated equally and be subject to the same set of accreditation rules.[412] Cordelio states that, although MISO acknowledged concerns regarding DERs in the MISO June 7 Answer, Cordelio continues to take issue with MISO's suggestion that MISO's Order No. 2222 compliance filing is the appropriate forum for those issues because MISO has not

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[406] *Id.* at 20.

[407] *Id.*; MISO, Proposed FERC Electric Tariff, Schedule 53A (32.0.0) § I.C.

[408] Public Interest Organizations Response to MISO Deficiency Response at 3.

[409] *Id.* at 3-4.

[410] Clean Energy Parties Response to MISO Deficiency Response at 4 (quoting Clean Energy Parties Protest at 6-7).

[411] *Id.* at 5.

[412] Cordelio Response to MISO Deficiency Response at 5.

provided clarity regarding Cordelio's distribution-connected batter energy storage systems, which impacts the participation of Cordelio's facilities.[413]

196. Cordelio posits that MISO can do more to address a new future approach for deliverability under its DLOL methodology, specifically regarding demand response resources.[414] Cordelio states that distribution-connected battery energy storage systems alleviate congestion on the transmission system when loads are high and capacity margins are tight, which allows MISO to achieve better optimization in its resource planning. Cordelio proposes that MISO should enable distribution-connected battery energy storage systems to serve as distributed capacity without going through a region-wide deliverability test because the system is already reliable for a lower load at these LMP nodes. Cordelio argues that MISO should clarify that, if the output of a distribution-connected battery energy storage system is less than the coincident peak load at the distribution bus, then that battery energy storage system is awarded deliverability rights without a region-wide deliverability study to receive full capacity accreditation because it is already fully deliverable.[415] Cordelio also argues that MISO should confirm, as part of this construct, that distribution-connected battery energy storage systems that wish to deliver into another Local Resource Zone (Zone) may, at their option, request that MISO conduct a deliverability study in order to receive full capacity accreditation.

197. Cordelio states that there are no significant differences between distribution-connected battery energy storage systems and transmission-connected battery energy storage systems, and thus distribution-connected battery energy storage systems can be modeled as native SERVM storage resources and should be recognized as fully accreditable under the proposed rules in the instant proceeding.[416] Cordelio argues that this approach is consistent with MISO's proposal to establish Resource Classes based on similar operating characteristics. Cordelio proposes that MISO accredit battery energy storage systems as 100% capacity less their guaranteed Original Equipment Manufacturer availability, which is similar to the process in other markets, noting that MISO can develop a different methodology in the future, in consultation with its stakeholders. However, Cordelio contends that the current disparate treatment between pumped hydro storage and battery energy storage systems is contrary to MISO's need for more capacity and drive for DLOL reliability adjustments.[417] With respect to MISO's revisions to

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[413] *Id.* at 5-6 (citing MISO June 7 Answer at 33).

[414] *Id.* at 8.

[415] *Id.* at 10.

[416] *Id.* at 11.

[417] *Id.* at 12.

capitalize the term Behind the Meter Generation in section I.C of Schedule 53A, Cordelio states that it prefers the lower-case behind-the-meter generation, as that includes distribution-connected battery energy storage systems within the bounds of the accreditation rules and does not limit the storage resources that may participate to the specific parameters and limitations applicable to the upper-case Behind the Meter Generation, and Cordelio thus argues that the Commission should not accept MISO's amended proposal.[418]

198. Entergy and Cleco argue that MISO's Deficiency Response shows that the time that storage is deployed in the model substantially changes the timing of when loss of load hours occur in the LOLE model, which has a major impact on storage resource accreditation.[419] Entergy and Cleco assert that MISO's deployment methodology is material to storage resource accreditation and that the Commission should require MISO to submit an FPA section 205 filing once the storage modeling methodology is finalized.

199. Midwest TDUs argue that, in the Deficiency Response, MISO does not defend the accuracy of the assumptions, but rather, MISO explains that it is evaluating alternative modeling approaches that vary "the timing, duration, and depth of loss of load events."[420] Midwest TDUs note that MISO does not dispute that these modeling differences will influence capacity accreditations that result from application of its DLOL methodology.

e. MISO October 4 Answer

200. MISO states that, consistent with its statements regarding LOLE modeling enhancements, MISO is committed to working with stakeholders to improve how storage is modeled, and, in fact, has already begun discussing the matters with stakeholders at the Resource Adequacy Subcommittee meetings. MISO contends that its decision not to single out treatment of storage modeling in the Tariff does not render the DLOL-based accreditation unjust and unreasonable. MISO states that it has produced an LOLE Study Report where modeling details for all other resources are discussed and has committed to updating the report to include storage modeling details.[421]

201. In response to Cordelio's concerns, MISO states that it is important to note that a resource is accredited based upon the way it participates in the MISO market. MISO

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[418] *Id.* at 12-13 (citing Deficiency Response at 20).

[419] Entergy and Cleco Response to MISO Deficiency Response at 4.

[420] Midwest TDUs Response to MISO Deficiency Response at 8 (quoting Deficiency Response at 14).

[421] MISO October 4 Answer at 14.

explains that a distribution-connected battery energy storage system can register under one of several different participation models, and the participation model it selects will determine how the resource is accredited. MISO states that, for example, a distribution-connected battery energy storage system can participate in MISO as a Demand Response Resource, a Distributed Electric Aggregated Resource, a Load Modifying Resource, or a Generation Resource, provided it meets the designated Tariff requirements.[422]

202. MISO states that Cordelio expresses frustration that the type of facilities it is developing are too large to fall within the size limitations for Distributed Electric Aggregated Resources in many regions. MISO responds that, as part of its Order No. 2222 compliance filing, it only filed a minimum size limit (1 MW) for such resources to participate in the market, not a maximum size limit. MISO states that it referred Cordelio to its Order No. 2022 compliance filing because it establishes rules for distribution-connected resources to participate in the MISO market as a Distributed Electric Aggregated Resource. MISO explains that, to the extent that Cordelio registers a resource that can be mapped to the Storage Class, it will be accredited based on the DLOL-based methodology.[423] MISO states that other issues raised by Cordelio regarding distribution-connected battery energy storage systems are beyond the scope of this proceeding.[424]

f. Commission Determination

203. We find that arguments related to the current LOLE modeling,[425] and therefore accreditation of storage resources under MISO's DLOL accreditation proposal, fail to render MISO's proposal unjust and unreasonable. Regarding protesters' arguments that MISO's proposed DLOL accreditation methodology does not capture the value of storage resources, we recognize, as MISO explains, that there are various ways to model and dispatch storage resources. In support of its approach, MISO explains that its model deploys storage resources after thermal and renewable resource capacity is deployed. Therefore, in MISO's model, in the event that thermal, wind, and solar resources provide sufficient capacity to prevent loss of load for a particular hour, storage resources will not be deployed and thus will retain availability to manage capacity shortages in subsequent intervals. However, when there is insufficient thermal, wind, and solar resource capacity for a particular hour, MISO's model will deploy the storage resource and deplete its availability in subsequent hours. We find this approach to be just and reasonable and not

[422] *Id.* at 25.

[423] *Id.* at 25-26.

[424] *Id.* at 26.

[425] *See supra* PP 155-156.

unduly discriminatory or preferential, as it reasonably captures the value and limitations of storage resources.[426] We disagree with protesters' arguments that the existence of alternative storage modeling approaches renders MISO's accreditation proposal, which continues to utilize MISO's current storage modeling approach, unjust and unreasonable.

204. Regarding protesters' arguments that potential improvements to LOLE and storage modeling during the three-year transition period are unclear, we note that MISO has not committed to any specific changes, but to the extent that there are changes, MISO has committed to implement those through its stakeholder process.[427]

205. Regarding Cordelio's concern that certain DERs could be considered External Resources, we note that, as part of MISO's Order No. 2222 compliance filing, MISO proposed to limit DERs to resources located physically within the MISO footprint, and the Commission accepted that proposal.[428] Therefore, DERs participating in MISO's markets cannot be considered External Resources. Regarding Cordelio's argument that MISO should allow netting of DERs to lower coincident peak demand, we recognize that, although other Regional Transmission Organizations (RTOs)/Independent System Operators (ISOs) may do so, the Commission has not required netting DERs with load. Therefore, we find that Cordelio's concerns with the current treatment of distribution-connected battery energy storage systems are outside of the scope of the instant proceeding.

6. LSE Reserve Requirements

a. Filing

206. MISO proposes to maintain the calculations of LSE Reserve Requirements and to account for the determination of UCAP for Capacity Resources, excluding External Resources, based on the proposed accreditation methodology.[429] MISO states that the

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[426] MISO's approach resembles the approach that the Commission found just and reasonable in PJM. *See* PJM, Intra-PJM Tariffs, RAA, Schedule 9.2, § I (1.0.0) ("The effective load carrying capability analysis . . . shall simulate output from the subject Limited Duration Resources, Combination Resources, and Demand Resources in hours in which all output from Unlimited Resources and available output from Variable Resources is insufficient to meet load.").

[427] Transmittal at 36.

[428] *Midcontinent Indep. Sys. Operator, Inc.*, 185 FERC ¶ 61,011, at PP 104, 108 (2023).

[429] Transmittal at 22.

LSEs' Reserve Requirements will be the sum of accredited values for all Capacity Resources, Load Modifying Resources, and Firm External Resources within the LOLE model plus the MW adjustment to drive the probabilistic model to the LOLE target. MISO states that it expects seasonal LSE Reserve Requirements to decrease under the proposed accreditation methodology due to the expected reduction in Resource Class-level accreditation, which, according to MISO, indicates that MISO's current accreditation methodologies are misaligned with a resource's marginal contribution to reliability risk.[430] MISO states that it therefore currently experiences over-accrediting and higher LSE Reserve Requirements that increase the total cost to maintain resource adequacy at the LOLE target.[431] MISO asserts that its proposed accreditation methodology will improve alignment between accreditation and the LSEs' Reserve Requirements, lower the LSEs' Reserve Requirements, and result in more efficient market outcomes.

207. Similar to LSE Reserve Requirements, MISO proposes to update Local Reliability Requirements calculations to use Resource Class-level accreditation.[432] MISO states that, although the ideal approach would be to determine the Local Reliability Requirement by aggregating the final SAC values of all resources in a Zone, Local Reliability Requirement values need to be finalized in November prior to the Auction, and final SAC values are not determined until the following February 15.[433] Therefore, MISO instead proposes to calculate the Local Reliability Requirement by approximating the final SAC values by combining data of the current and previous Planning Years.

b. Comments and Protests

208. AECC argues that MISO's proposal is intertwined with the seasonal allocations of LSEs' Reserve Requirements and that MISO's stated intention not to address such allocations renders the proposal incomplete.[434] AECC states that the elevated non-Summer Planning Reserve Margins implemented as part of MISO's SAC proposal and continued in the instant filing have resulted in dramatic changes to the capacity allocation process and increased the financial burden for a significant number of LSEs.[435] AECC

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[430] *Id.* (citing Joundi Test. at 67-68, fig. 12).

[431] *Id.* (citing Joundi Test. at 68).

[432] *Id.*

[433] *Id.* at 23.

[434] AECC Protest at 1.

[435] *Id.* at 4.

contends that the increase in non-Summer Planning Reserve Margins due to a more stringent LOLE target applied to non-Summer Seasons is questionable.[436] AECC asserts that the more stringent LOLE target for non-Summer Seasons was established without adequate justification and subsequently implemented with limited stakeholder discussion.[437] Therefore, according to AECC, if more stakeholders were familiar with the methodology applied and its impact on non-Summer Season LSE Reserve Requirements, then there would have been a higher degree of intervention on this topic during the SAC proceeding. AECC states that, for the 2024/2025 Planning Year, its Winter Reserve Requirement is 233.5 MW higher than the Summer Reserve Requirement, even though the coincident peak forecast for Winter is 92.6 MW lower than Summer.[438] AECC claims that the elevated Winter Planning Reserve Margin has placed an additional 349.6 MW of Winter Reserve Requirement burden on AECC, and AECC asserts that, effectively, all of that 349.6 MW was driven by the questionable manner in which MISO defined and applied the more stringent non-Summer LOLE target of 0.01 days per year. AECC claims that MISO has never stated or discussed with stakeholders the studied levels of Planning Reserve Margin that would be necessary in the non-Summer Seasons to achieve an LOLE in those Seasons equivalent to what is observed in the Summer Season (i.e., the latter being approximately 0.1 days per year).[439] AECC states that MISO's technical adjustment to the LOLE modeling tool should not be considered adequate justification for elevating the Reserve Requirements for certain LSEs, particularly given the high costs associated with implementing dependable resource capacity to meet MISO's adequacy requirements. AECC believes that this information would be informative and provide transparency to stakeholders in considering and establishing the appropriate levels of both Summer and non-Summer Season Planning Reserve Margins. AECC asserts that the "careful consideration" referred to by MISO is absent from its proposal and that a more definitive process with stakeholder engagement is overdue.[440] AECC argues that this seasonal LSE Reserve Requirements issue should be addressed within this proceeding, or an immediate parallel docket, rather than further delayed for an indefinite period.[441]

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[436] *Id.* at 1-2.

[437] *Id.* at 3.

[438] *Id.* at 4.

[439] *Id.* at 5.

[440] *Id. See* Transmittal at 33.

[441] AECC Protest at 5.

209. Alliant Energy states that MISO must maintain its commitment to work with stakeholders on adequate LSE Reserve Requirements allocation and subsequent filings because changes to the LSE Reserve Requirements allocation will affect how much capacity an LSE needs to procure to meet its Reserve Requirements.[442] Minnesota Power states that MISO's proposal only provides information on supply resource accreditation and that MISO's proposal lacks an explanation of how the Reserve Requirements values by Zone are allocated to LSEs for each Season.[443] Minnesota Power contends that without information on the Reserve Requirements for an LSE, it is not possible to fully evaluate the merits of MISO's proposal.[444] The Mississippi Commission asserts that MISO's failure to include its methodology to allocate the Reserve Requirements to LSEs in the Tariff is an obvious deficiency.[445]

210. MISO Cities and Communities argue that the reduction in the LSEs' Reserve Requirements raises equity and free ridership concerns for solar resources, but that MISO has not addressed these issues.[446] MISO Cities and Communities assert that a reduced LSE Reserve Requirements may result in unequal distribution of benefits and costs of implementing solar resources across the MISO region, as well as unclear investment signals.

211. OMS requests that MISO produce semi-annual status reports documenting its evaluation of how to appropriately allocate the Reserve Requirements to individual LSEs during the transition period. OMS asserts that, if MISO establishes a new LSE Reserve Requirements allocation methodology during the transition period, MISO should include updated, forward-looking Reserve Requirements allocations to LSEs during the transition period to help them further understand LSE capacity positions in advance of DLOL implementation.[447] The Michigan Commission agrees with OMS.[448]

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[442] Alliant Energy Protest at 11.

[443] Minnesota Power Protest at 4.

[444] *Id.* at 4-5.

[445] Mississippi Commission Protest at 1.

[446] MISO Cities and Communities Protest at 3.

[447] OMS Comments at 6-8.

[448] Michigan Commission Comments at 8.

c. Commission Determination

212. MISO does not propose Tariff changes to the determination of LSE Reserve Requirements pursuant to section 68A.7.[449] Rather, MISO's proposed changes to how it accredits capacity resources will impact the LSE Reserve Requirements calculation because resource accreditation is an input to that calculation. We find that MISO has sufficiently explained that LSE Reserve Requirements calculations will be maintained and account for the determination of UCAP based on the proposed DLOL accreditation methodology. Therefore, we also find that protesters' arguments suggesting that the proposal does not provide sufficient information regarding the LSE Reserve Requirement calculation fall outside the scope of the instant proceeding.

213. Regarding MISO Cities and Communities' arguments that MISO does not address certain free ridership concerns, we find that although it is true that an LSE's investment in renewables can contribute to the shifting of Critical Hours, MISO Cities and Communities have failed to explain how such a shift benefits other LSEs. Contrary to MISO Cities and Communities' suggestions otherwise, in MISO, an LSE's Reserve Requirements are based on the LSE's coincident peak demand, which does not directly change because another LSE makes investments that may or may not decrease the system's net peak load. Furthermore, the Commission has previously found that it is reasonable to reflect the declining marginal resource adequacy contribution of resources such as solar through a lower system-wide reserve requirement, because one of the primary benefits of a regional resource adequacy construct is that all LSEs collectively contribute to a single resource adequacy planning requirement.[450]

7. Timing

a. Filing

214. MISO proposes to implement the DLOL accreditation methodology beginning with the 2028/2029 Planning Year. MISO states that it will begin using the proposed accreditation methodology to produce Resource Class-level indicative results beginning September 1, 2024 and publish those results for stakeholder evaluation shortly thereafter.[451] MISO also states that full implementation will begin with the 2028/2029 Planning Year after a three-year transition period.[452] MISO explains that the Resource

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[449] MISO, FERC Electric Tariff, Module E-1 (34.0.0), § 68A.7.

[450] *See PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 186.

[451] Transmittal at 2.

[452] *Id.* at 5.

Class-level indicative results produced during the three-year transition period will be provided at the request of stakeholders to afford an opportunity to adjust their business practices, especially long-term resource planning and retirement decisions.[453] MISO commits to publishing 5-year and 10-year forward Resource Class-level indicative results as part of the Regional Resource Assessment.[454] MISO asserts that the three-year transition period is reasonable to allow stakeholders to adapt to the new methodology before requirements and resource accreditation are impacted by the change.[455]

215. Regarding the timeline for posting certain accreditation calculations, MISO proposes to "post initial values for ISAC, SAC, Resource Class-level UCAP, and Resource Class-level ISAC[], for each Season, by December 15 prior to the applicable [Auction]."[456] With respect to disputes, MISO proposes that "[a]ny disputes related to the initial SAC values shall be submitted to [MISO] in writing within thirty (30) Calendar Days of such posting."[457] MISO proposes to post the final values for each Season by February 15 prior to the applicable Auction.[458]

b. Comments and Protests

216. Alliant Energy states that MISO has an aggressive implementation timeline and urges the Commission to extend the deadline beyond the 2028/2029 Planning Year.[459] Alliant Energy argues that MISO's proposed three-year implementation timeline does not align with the typical timeline of bringing new resources online, especially given the backlog in MISO's generator interconnection queue.[460] According to Alliant Energy, depending on resource type, there is a four to seven year gap between implementation and a new resource coming online.[461] Alliant Energy asserts that if the implementation

[453] *Id.* at 2.

[454] *Id.* at 5.

[455] *Id.* at 2.

[456] MISO, Proposed FERC Electric Tariff, Schedule 53A (31.0.0), § VI.I.

[457] *Id.*

[458] *Id.*

[459] Alliant Energy Protest at 1-2, 7.

[460] *Id.* at 5.

[461] *Id.* at 6.

timeline were extended beyond the 2028/2029 Planning Year, markets participants would have more lead time, clarity, and ability to adapt their planning to address needs created by the change.[462] Alliant Energy also states that there are external factors that the Commission should consider regarding the proposed implementation timeline, including: (1) the substantial load growth occurring in MISO driven by onshoring of manufacturing, electrification, and data center demand; (2) recent regulatory rules that add uncertainty to how generation owners will likely plan their resource mix in the future;[463] and (3) future extensions of the implementation timeline to allow MISO to follow through on commitments to shareholders.[464]

217. MidAmerican argues that the 2028/2029 Planning Year implementation timeline does not allow sufficient time for entities to conduct long-term resource planning, obtain generation interconnection rights, obtain permits, receive long-lead time equipment, and build generation resources needed to resolve resource adequacy shortfalls before being subject to financial consequences from MISO's proposal.[465] According to MidAmerican, the implementation timeline should be extended by at least one year.[466] MidAmerican states that, due to the uncertainty in the actual results for the 2028/2029 Planning Year, market participants may plan for resources that may not be needed during the implementation period and could have otherwise benefitted from delays. MidAmerican asserts that MISO's proposal will reduce accreditation for every type of resource, but most dramatically for wind and solar, and that, although MISO states that the Planning Reserve Margin may mitigate some of the decreased accreditation, the Planning Reserve Margin changes are not yet public and contribute to the uncertainty surrounding the 2028/2029 Planning Year implementation timeline.

218. DTE Electric requests that the Commission require MISO to publish forecasted DLOL results annually through the Regional Resource Assessment process for five and 10 years out, and for every forecasted year within the Assessment horizon. DTE Electric asserts that MISO's commitment to publishing five-year and 10-year forward Resource

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[462] *Id.* at 8.

[463] New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, Docket No. EPA-HQOAR-2023-0072 (Apr. 24, 2024) (to be codified at 40 C.F.R. pt. 60 (2024)).

[464] Alliant Energy Protest at 8-9.

[465] MidAmerican Protest at 3.

[466] *Id.* at 9.

Class-level indicative results as part of the Regional Resource Assessment, while minimally acceptable, will not provide adequate data for stakeholders to properly account for DLOL impacts.[467] OMS believes that LSEs and all stakeholders would benefit from a 15-year forward projection of Resource Class-level values.[468]

219. Consumers Energy argues that MISO's proposed timeline for addressing disputes related to SAC values is unreasonable because it does not provide sufficient time for market participants to validate the calculations.[469] Consumers Energy states that market participants will only have 30 days to review the initial values, validate all the data, and raise any potential disputes with MISO.[470] Consumers Energy also states that the 30-day time period could force market participants to submit offers into the Auction before they can verify MISO's calculations, and that runs an unreasonable risk of errors.[471] According to Consumers Energy, market participants should instead have until February 1 of each year to submit disputes related to initial SAC values. Consumers Energy explains that, because MISO's proposal will apply to all resources and not just resources under Schedule 53, the time and effort needed to validate MISO's calculations is substantial.

220. Midwest TDUs contend that MISO does not explain how the proposed Tariff changes that would take effect on September 1, 2024 will operate prior to the DLOL-methodology being fully implemented. Specifically, Midwest TDUs state that MISO proposes to revise the definition of UCAP, effective September 1, 2024, to be "[t]he amount of Capacity in MW assigned to a Planning Resource after accounting for either its availability in the LOLE analysis or historic availability, as applicable."[472] Midwest TDUs contend that this definition is problematic because it suggests that MISO could either use a deterministic or probabilistic approach without explaining where it would be appropriate to use which approach. Midwest TDUs argue that MISO's filing offers no explanation of how this revised definition will function in the context of MISO's existing

[467] DTE Electric Protest at 11.

[468] OMS Comments at 6.

[469] Consumers Energy Protest at 2, 5.

[470] *Id.* at 5.

[471] *Id.* at 6.

[472] Midwest TDUs Protest at 28-29 (citing MISO, Proposed FERC Electric Tariff, Module A, § 1.U (41.0.0)).

Schedule 53 over the next three years.[473] Midwest TDUs further argue that MISO has proposed other changes to its Tariff outside of Schedule 53A, including the definition of SAC and substantive provisions in section 68A.2.1 related to the LOLE analysis. Midwest TDUs contend that MISO should explain its intention in these and other proposed Tariff revisions and address whether and how these changes are appropriate for use under both the current accreditation methodology and MISO's proposed DLOL-based methodology intended to be implemented in the 2028/2029 Planning Year.[474]

c. MISO June 7 Answer

221. MISO states that it responded to stakeholders' concerns regarding the timing for implementation by proposing the three-year transition period that gives stakeholders sufficient time to make planning and investment decisions before the new accreditation methodology is applied beginning with the 2028/2029 Planning Year.[475] MISO argues that the three-year transition period balances the need to update the accreditation methodology due to the rapidly evolving resource mix with the needs of LSEs and state regulators to engage in long-term resource planning. MISO explains that, although long-term planning decisions were made relying on the current accreditation methodology, it is imperative that MISO act quickly to address the fast-paced changes in its generation fleet that are impacting reliability.[476] MISO contends that the 2024/2025 Planning Year showed an approximate 30% decrease in surplus capacity offered for Summer 2024 compared to Summer 2023.[477] MISO also states that the proposed accreditation changes will send proper price signals necessary to address resource needs.[478] MISO asserts that delay beyond the three-year transition period will further delay market participants' ability to rely on market signals to address resource needs and will perpetuate the resource adequacy challenges facing the MISO region.

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[473] *Id.* at 29.

[474] *Id.* at 30.

[475] MISO June 7 Answer at 33.

[476] *Id.* at 32.

[477] *Id.* (citing MISO, *Planning Resource Auction Results for the 2024/2025 Planning Year* (updated Apr. 26, 2024), https://cdn.misoenergy.org/2024%20PRA%20Results%20Posting%2020240425632665.pdf).

[478] *Id.* at 33.

d. Answers to MISO's June 7 Answer

222. MidAmerican states that MISO failed to address concerns regarding the June 2028 implementation date being unreasonable considering that the calendar time to construct new resources is driven in large part by MISO's generator interconnection queue backlog.[479] MidAmerican argues that the current timeline does not allow sufficient time for LSEs to plan for and react to changes before being subject to financial consequences of the new resource adequacy construct. MidAmerican asserts that LSEs need time to conduct long-term generation resource planning, obtain generation interconnection rights, obtain permits, receive long-lead time equipment, and build generation resources needed to resolve resource adequacy shortfalls. MidAmerican points out that on June 27, 2024, MISO provided notice of further delay for the commencement of its 2023 queue cycle, and MidAmerican argues that MISO failed to acknowledge that the queue backlog is a significant reason for MidAmerican's concern with the implementation timeline.

223. Consumers Energy reiterates its concern regarding the 30-day timeframe to validate MISO's accreditation calculations prior to the annual Auction.[480] Consumers Energy argues that MISO did not address its concerns regarding the timeframe for market participants to validate the initial SAC posting values.[481] Consumers Energy again argues that the Tariff should be amended so that market participants have until February 1 of each year to submit any disputes related to the initial values.[482]

e. MISO July 9 Answer

224. In response to MidAmerican's arguments regarding the queue backlog, MISO states that the 2028/2029 Planning Year implementation timeline strikes a balance between a quickly evolving electric grid and the needs of LSEs and state regulators to engage in long-term resource planning.[483]

f. Deficiency Response and Responsive Pleadings

225. In response to a question on whether MISO is automatically required to determine and post adjusted final SAC values if Resource Class-level ISAC changes more than 3%

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[479] MidAmerican Answer at 3.

[480] Consumers Energy Answer at 5.

[481] *Id.* at 1, 5.

[482] *Id.* at 5.

[483] MISO July 9 Answer at 15.

and at least 30 MW, MISO proposes Tariff revisions to section VI.I of Schedule 53A stating that "[i]f Resource Class-level ISAC changes more than three percent (3%) and at least 30 MW, [MISO] will post adjusted Final SAC values by March 1 prior to the applicable [Auction]."[484]

226. In response to a question on how the proposed definitions for SAC and UCAP comport with both the current Tariff and proposed Tariff, MISO explains that it proposed for the SAC and UCAP definitions to become effective September 1, 2024 because the modified definitions are applicable under both the current Tariff and proposed Tariff.[485] MISO states that, although the revisions align those definitions with the proposed Tariff, the applicability of the revised definitions is not limited to the proposed Tariff; therefore, MISO asserts that, even if it never implements the proposed accreditation methodology, the revised definitions of SAC and UCAP would still apply.[486]

227. Public Interest Organizations argue that MISO's proposed Tariff revisions are ambiguous because it is unclear whether MISO proposes that, if the December 15 ISAC values are adjusted, then the final SAC values will not be posted until March 1, or that, if there is a sizable adjustment, then there will be a posting on February 15 followed by another posting on March 1.[487] Public Interest Organizations state that, although MISO's proposed Tariff language suggests the latter interpretation, the Commission should direct MISO to modify the proposed Tariff language to clarify.

228. Midwest TDUs contend that MISO's Deficiency Response does not resolve its concern relating to the revised definitions of UCAP and SAC. Midwest TDUs state that it appears that either the new definitions have no effect on capacity accreditation, or the new definitions have some sort of effect that MISO has not identified. Midwest TDUs state that, if it is the former, it is unclear why MISO seeks to have these definitions take effect prior to the DLOL methodology.[488]

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[484] Deficiency Response at 13; MISO, Proposed Electric FERC Tariff, Schedule 53A (32.0.0), § VI.I.

[485] Deficiency Response at 19.

[486] *Id.* at 19-20.

[487] Public Interest Organizations Response to MISO Deficiency Response at 4.

[488] Midwest TDUs Response to MISO Deficiency Response at 11 (citing Deficiency Response at 20).

g. MISO October 4 Answer

229. MISO states that its goal is to post final SAC values by February 15; however, if there are disputes that are resolved after the February 15 date, then MISO will post final values no later than March 1. MISO states that it will make clear in the BPM that the February 15 date is the goal and, in the event of a dispute that results in a change that meets the threshold, MISO will post final values no later than March 1.[489]

230. MISO states that its revised definitions of UCAP and SAC will have no effect prior to implementation of the DLOL-based methodology. MISO asserts that the current definitions are too limited to accommodate the DLOL-based methodology. MISO states that, while the revised definitions have no impact on capacity accreditation prior to implementation, they are broad enough to accommodate both the current implementation as well as the DLOL-based methodology once implemented. MISO argues that there is no reason to delay the effective date of the definitional changes and that administrative efficacy supports approval of these changes with an effective date prior to June 1, 2027. MISO notes that, if the proposed changes are approved with a June 1, 2027 effective date, MISO would be required to maintain two different versions of its Module A until then, with no real benefit.[490]

h. Commission Determination

231. We accept MISO's proposal, as amended, to implement the DLOL accreditation methodology in the 2028/2029 Planning Year after a three-year transition period. We find that the proposal balances the need to provide stakeholders with the time to prepare for a change in resource accreditation with MISO's stated need for resource accreditation reform. We also find that MISO's proposal to publish indicative results for the three years prior to implementation in the 2028/2029 Planning Year will help market participants and other stakeholders prepare for the changes in resource accreditation.

232. Regarding protesters' arguments to delay implementation beyond the 2028/2029 Planning Year, we disagree that the proposed timeline is unnecessarily aggressive or that additional time is required. Although protesters argue that the implementation timeline should be extended, we find that MISO's proposed timeline is just and reasonable as it recognizes the need to act in a timely manner to address changes in its generation fleet that are impacting reliability.[491]

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[489] MISO October 4 Answer at 23.

[490] *Id.* at 23-24.

[491] MISO June 7 Answer at 32.

233. We find that, on balance, MISO's proposed timeline for posting initial and final ISAC, SAC, Resource Class-level UCAP, and Resource Class-level ISAC values is just and reasonable because market participants and MISO will have approximately one month each to submit and evaluate disputes, respectively. We are not persuaded that additional time beyond this one-month period is necessary to submit a dispute. We further note that, while we acknowledge that MISO's proposal will subject a larger set of resources to MISO's SAC framework, the timeline for posting initial and final accreditation values is consistent with MISO's current practice involving Schedule 53 Resources. Moreover, we find that the automatic post-adjustment to such values in circumstances where there are large changes in Resource Class-level ISAC ensures that the inherent Auction timing constraint is not so restrictive as to permit significant errors to flow through to the Auction. Regarding the purpose of the February 15 and March 1 dates, we find that February 15 is the date that final SAC values will be posted, and, as articulated by MISO in its October 4 Answer, in circumstances where an error is identified, whether through resolution of a dispute or otherwise, MISO will adjust the final SAC values but only if the change in Resource Class-level ICAP is more than 3% and at least 30 MW. We are not persuaded that further clarifying revisions to the Tariff are necessary.

234. We also find that MISO has sufficiently explained that its proposed revisions to the definitions of UCAP and SAC will not materially impact its implementation of its current accreditation design and agree that administrative efficacy supports accepting these changes with an effective date prior to June 1, 2027.

8. Implementation Details

a. Comments and Protests

235. Midwest TDUs, Public Interest Organizations, and Clean Energy Parties argue that MISO's proposed revisions do not satisfy the rule of reason. Midwest TDUs state that MISO gives no indication of how often it will review the list of Resource Classes beyond the vague statement of "periodically" (which is not in the proposed Tariff language) and stating that any proposed changes will be discussed with stakeholders. Midwest TDUs further state that MISO's proposed Tariff also does not include any language about the process for revising its list of Resource Classes or how disputes over Resource Class identification are to be resolved.[492] Midwest TDUs argue that MISO's Tariff is entirely silent as to MISO's obligation to monitor these quality control/quality assurance issues

[492] Midwest TDUs Protest at 9-10.

relating to determining Resource Class and the timeline for developing and implementing these processes.[493]

236. Public Interest Organizations and Clean Energy Parties argue that MISO's proposed Tariff revisions do not include essential details of its weighting methodology (namely, weighting by effective margin and load forecast error scenario probability).[494] Public Interest Organizations argue that MISO's weighting proposal is poorly defined in the proposed Tariff language, in violation of legal requirements that a rate filing clearly and specifically describe the new rate (and practices affecting the rates).[495] Public Interest Organizations assert that there are a range of weighting methodologies that MISO could use within this umbrella and that the choice among weighting approaches could result in significantly different accreditation for resources and increases in rates. Public Interest Organizations argue that the rule of reason requires that MISO provide details of its "effective margin" weighting calculation methodology in the Tariff. For example, Public Interest Organizations argue that the proposed Tariff provides no indication as to how MISO will approach the question of how much more weight to assign to hours with more unserved energy.

237. Public Interest Organizations also argue that the Tariff does not mention the use of load forecast error scenario probabilities in calculating weights for Critical Hours, which can dramatically shift the relative weights of Critical Hours. According to Public Interest Organizations, weighting modeled resource performance during certain Critical Hours more heavily—often multiple times more (and potentially orders of magnitude more) than performance during other Critical Hours—can substantially shift the allocation of class-level accredited MWs, and, thus, the accredited capacity of individual resources. In turn, Public Interest Organizations state, resources' accredited capacity directly affects resource offers into MISO's Auction (and thus auction clearing prices) and LSEs' compliance with the Reserve Requirements, as resource owners have costs that generally scale per installed MW, but resource offers must be expressed as dollars per accredited MW.[496] Public Interest Organizations submit that MISO's weighting methodology is likewise "realistically susceptible of specification."[497] Public Interest Organizations note

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[493] *Id.* at 10.

[494] Public Interest Organizations Protest at 26-28; Public Interest Organizations Answer at 4; Clean Energy Parties Protest at 15-16.

[495] Public Interest Organizations Protest at 25.

[496] *Id.* at 27-28.

[497] *Id.* at 28 (citing *City & Cnty. of San Francisco v. FERC*, 24 F.4th 652, 661 (D.C. Cir. 2022) (quoting *Keyspan-Ravenswood, LLC v. FERC*, 474 F.3d 804, 811 (D.C.

that MISO not only identifies the two variables that will make up a Critical Hour's weight—namely, load forecast errors scenario probability and effective margin—but provides the equation that MISO will use to calculate weights. Public Interest Organizations argue that MISO's ability to describe its methodology to this degree demonstrates that these elements are "to say the least, easily reduced to writing."[498] Public Interest Organizations also argue that MISO's specific weighting methodology is "not so generally understood in any contractual arrangement as to render recitation superfluous."[499] According to Public Interest Organizations, the Tariff provides that MISO will "assign . . . greatest weight to the hours with the highest risk (i.e., hour with most unserved energy)"[500] and does not inevitably result in the specific choices that MISO made in its weighting proposal.[501] Public Interest Organizations submit that these missing elements are significant methodological choices that MISO has made regarding its "process for determining the capacity accreditation values of certain resource classes,"[502] and, as such, must be included in the Tariff.

238. Public Interest Organizations cite to MISO's use of a cold weather adder in the LOLE model that acts as a proxy for the outage risk of thermal resources at low temperatures to highlight the extent of missing information.[503] Public Interest Organizations note that this information is not included in the proposed Tariff despite impacting accreditation values, which in turn informs long-term resource planning decisions. Public Interest Organizations argue that, like the cold weather adder, MISO has several forthcoming updates to the LOLE model and that each update can affect the

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Cir. 2007))).

[498] *Id.* (citing *Keyspan-Ravenswood, LLC v. FERC*, 474 F.3d 804, 811 D.C. Cir. 20070).

[499] *Id.* at 29 (citing *City of Cleveland v. FERC*, 773 F.2d 1368, 1376 (D.C. Cir. 1985)).

[500] *Id.* (citing MISO, Proposed FERC Electric Tariff, Schedule 53A (31.0.0)), § II.A

[501] *Id.* (comparing *Hecate Energy Greene Cnty. 3 LLC v. FERC*, 72 F.4th 1307, 1314 (D.C. Cir. 2023) ("[E]ven specifiable practices that significantly affect rates need not be included if they are clearly implied by the tariff's express terms.") (*Hecate*)).

[502] *Id.* at 30 (citing *Am. Elec. Power Serv. Corp.*, 184 FERC ¶ 61,207, at P 30 (2023)).

[503] *Id.* at 20.

accreditation values for a Resource Class.[504] Public Interest Organizations note that the proposed Tariff does not foreclose the introduction of additional variables with comparable or greater impacts.[505] Public Interest Organizations state that it is improper for MISO to change LOLE model assumptions without submitting these changes to the Commission, as oversight over the LOLE model is needed to appropriately assess MISO's proposal.[506]

239. Clean Energy Parties state that MISO proposes to conduct a Monte Carlo probabilistic simulation to calculate Resource Class-level UCAP, and that, because this approach provides a vast degree of discretion, the specific structuring of this simulation should be placed in the Tariff.[507] According to Clean Energy Parties, by assigning critical details to the BPMs, MISO could opt to dramatically change its sampling methods without Commission oversight.[508] Clean Energy Parties submit that the structuring of the Monte Carlo simulation includes multiple essential assumptions, such as which generator and load profiles will be used, particularly in extreme conditions where real-world data may be limited or highly outdated within the 30-year data set.

240. Clean Energy Parties further argue that MISO fails to provide sufficient information in its filing to allow stakeholders to reproduce how it determines Critical Hours, including but not limited to various modeling assumptions in the SERVM tool related to use and application of weather data and resource availability.[509] Clean Energy Parties argue that, without data accessibility and transparency, market participants cannot replicate the calculations for Critical Hours and therefore will not be fully informed as to the implications on accreditation. Clean Energy Parties submit that MISO must provide more information in its Tariff, including assumptions on the use of weather and resource availability data in the model.[510]

241. Clean Energy Parties also argue that MISO's treatment of planned outages in the class-level methodology has significant impacts on capacity accreditation for resources;

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[504] *Id.* at 20-21.

[505] *Id.* at 26-27.

[506] *Id.* at 21-22.

[507] Clean Energy Parties Protest at 17.

[508] *Id.* at 18.

[509] *Id.* at 18-19.

[510] *Id.* at 19-20.

however, key details are left out of the Tariff. Clean Energy Parties assert that the methodology does not attempt to allocate outages to resource classes that are on outage each day and, as a result, random scheduling decisions made by the model can greatly penalize one technology class while benefiting another. Clean Energy Parties argue that this is an unreasonable outcome, fails to align planned outage scheduling with reasonably expected operations, and uses a randomized outage scheduling practice to separate reliability value from accreditation. Clean Energy Parties state that the Commission should require MISO to specify the treatment of planned outages in the Tariff.[511]

242. Alliant Energy notes that MISO's filing leaves many implementation details to be worked out later, including the need for greater data transparency, additional LOLE enhancements, critical and expanded RA Hours, and LSEs' Reserve Requirements allocation. Alliant Energy submits that the Commission should continue to monitor MISO's progress with respect to MISO's obligations to LSEs regarding timing, accuracy, and completeness, specifically around data transparency and LOLE enhancements. Alliant Energy asks the Commission to ensure complete transparency on the steps MISO plans to take to fulfill its LOLE enhancements.[512] In addition, Alliant Energy suggests that MISO needs to continue working with stakeholders on projections and implementation details on critical and expanded hours.[513]

b. MISO June 7 Answer

243. MISO asserts that its proposed Tariff provisions provide sufficient detail to satisfy the rule of reason because the proposed Tariff revisions include the basis for grouping resources by class, the fact that resources will be mapped to one of the classes listed within the Tariff, and a process for challenging the mapping if stakeholders disagree with MISO's determination.[514] Moreover, MISO states that the nature of the proposed DLOL-based methodology necessitates that implementation details appropriately be included in the BPMs. MISO states that its allocation of requirements between the Tariff and BPM strikes the appropriate balance between these two sources of information and is necessary to provide both MISO and its stakeholder community the flexibility needed to implement the new requirements. MISO contends that it properly followed the rule of reason, in contradiction to the assertions from the Public Interest Organizations, in properly

[511] *Id.* at 20-21.

[512] Alliant Energy Protest at 10.

[513] *Id.* at 11.

[514] MISO June 7 Answer at 12.

including in its Tariff provisions regarding the use of weights and caps.[515] Moreover, MISO asserts that it provided many details regarding the proposed accreditation methodology including, but not limited to: how the Resource Class-level UCAP is determined, how Critical Hours are calculated and applied, and how MISO currently treats planned outages within the LOLE model.[516]

c. Answers to MISO's June 7 Answer

244. Public Interest Organizations assert that MISO's June 7 Answer does not rebut the arguments that essential details, specifically the weighting by effective margin and load forecast error scenario probability, should be included in the Tariff.[517] Public Interest Organizations state that they are aware that the Commission has historically approved ELCC-type capacity accreditation methodologies without requiring that the inputs and assumptions of the models used for the ELCC calculation be included in any tariffs. Public Interest Organizations submit that what differentiates MISO's proposal from those previously approved for PJM and NYISO is the direct connection of specific hours from the LOLE analysis to the DLOL accreditation process. Public Interest Organizations argue that MISO's accreditation proposal here is a near-perfect reflection of resources' modeled performance during the projected highest-risk hours that are identified in the model. Thus, Public Interest Organizations disagree with MISO's suggestion that the LOLE model should be considered an implementation detail and continue to believe that MISO should be required to include the key assumptions and inputs to the LOLE model in its Tariff.[518]

d. MISO July 9 Answer

245. MISO states that the key assumptions and process for creating the LOLE model are described in detail every year in the LOLE study report published by MISO, which complies with the rule of reason.

246. MISO further states that, in the Commission's recent order approving MISO's Reliability Based Demand Curve (RBDC) proposal, the Commission found that the details MISO proposed to include in its Tariff versus the BPMs complied with the rule of reason.[519] MISO notes that the Commission found that "leaving outside the Tariff the

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[515] *Id.* at 23.

[516] *Id.* at 12.

[517] Public Interest Organizations Answer at 4-5.

[518] *Id.* at 3-4.

[519] MISO July 9 Answer at 4 (citing *Midcontinent Indep. Sys. Operator, Inc.*,

specific assumptions and other implementation details of the Monte Carlo simulations used to develop the RBDC is consistent with both the rule of reason standard and the current treatment of the Monte Carlo analyses used to calculate LOLE," as well as that the "proposed description of the calculation of Net [Cost of New Entry] in the Tariff is just and reasonable, and also well within the 'broad bounds of discretion' of the rule of reason standard, and that specifics regarding the scaling factor and statistical models are implementation details that are appropriate for inclusion in the BPMs."[520]

e. Deficiency Response and Responsive Pleadings

247. In response to questions on the Resource Classes, MISO proposes to modify proposed Schedule 53A to include separate Resource Classes for Oil, Gas, and Dual Fuel Oil/Gas.[521] MISO also proposes to revise section I.C of Schedule 53A to add Dual Fuel Oil/Gas Resources' attestation requirements and additional factors that MISO will use to evaluate Resource Class types and resolve any disputes.

248. In response to a question on MISO's proposed weighting methodology, MISO proposes to amend section II.A of Schedule 53A to include the steps that MISO will follow to calculate Resource Class-level accreditation.[522]

249. In response to a question on the deadlines by which MISO is required to post adjusted Final SAC values, MISO proposes to amend section VI.I of Schedule 53A to add language reflecting this deadline.[523] In response to a question regarding clarification on whether Resource Class-level UCAP used for the deficient seasonal RA Hours is the same seasonal Resource Class-level UCAP for the Season with the deficient number of RA Hours, MISO proposes to amend section IV of Schedule 53A to provide clarity on how deficient seasonal RA Hours will be accounted for in the ISAC calculations.[524]

250. In response to a question on the term behind-the-meter generation in Schedule 53A, MISO proposes to change the reference to use the defined term Behind the Meter

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187 FERC ¶ 61,202, at PP 215-219 (2024), *reh'g pending*).

[520] *Id.* (quoting *Midcontinent Indep. Sys. Operator, Inc.*, 187 FERC ¶ 61,202 at PP 216, 217).

[521] Deficiency Response at 4-6; *see supra* section IV.B.2.f.

[522] Deficiency Response at 12; *see supra* section IV.B.1.c.iv.

[523] Deficiency Response at 13; *see supra* section IV.B.7.f.

[524] Deficiency Response at 19; *see supra* section IV.B.1.b.iii.

Generation from Module A of its Tariff.[525] In response to a question on an internal reference within Schedule 53A to Schedule 53, MISO proposes to amend section IV.C of Schedule 53A to correct the reference to Schedule 53A.[526] In response to a question on an internal reference to "paragraphs A through C above" in section IV.C of Schedule 53A, MISO proposes to amend section IV.C of Schedule 53A to correct the reference to "paragraphs A and B above."[527]

251. Public Interest Organizations restate their rule of reason argument that MISO must include more information on how the LOLE Study will be conducted.[528] Public Interest Organizations state that MISO's inclusion of the hourly weighting proposal renders its rule of reason arguments focused on MISO's failure to include such details moot.[529]

252. Clean Energy Parties argue that MISO's proposal does not address how additional Resource Classes will be created, identified, and accredited because these details are excluded from the Tariff.[530] Moreover, Clean Energy Parties state that MISO provides, in the Deficiency Response, possible modeling approaches that it is considering, but they contend that MISO does not propose any subsequent Tariff revisions that provide certainty or transparency for modeling storage resources.[531] Clean Energy Parties assert that MISO must include further detail in the Tariff around storage modeling, even if just "guardrails," to ensure storage is being modeled with the correct assumptions, and that MISO's proposal remains incomplete without such Tariff revisions.[532] Clean Energy Parties further assert that MISO's recommendation to adopt the planned maintenance adjustment should also be included in the Tariff revisions, consistent with the Commission's rule of reason.[533]

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[525] Deficiency Response at 20; *see supra* section IV.B.5.d.

[526] Deficiency Response at 20.

[527] *Id.* at 20-21.

[528] Public Interest Organizations Response to MISO Deficiency Response at 3.

[529] *Id.* at 2.

[530] Clean Energy Parties Response to MISO Deficiency Response at 7.

[531] *Id.* at 8 (citing Deficiency Response at 13-15).

[532] *Id.* at 8-9.

[533] *Id.* at 10-11 (citing Deficiency Response at 18).

f. Commission Determination

253. We find MISO's Tariff revisions, as amended, to be just and reasonable and not unduly discriminatory or preferential.

254. We disagree with protesters arguing that MISO failed to provide sufficient detail in its accreditation proposal to satisfy the rule of reason. The Commission has broad discretion in applying the rule of reason, under which provisions that "significantly affect rates, terms, and conditions"[534] of service, are realistically susceptible of specification, and are not generally understood in a contractual agreement, must be included in the tariff.[535] The tariff need not include "mere implementation details,"[536] which instead may be included only in the BPM.[537] "[E]ven specifiable practices that significantly affect rates need not be included if they are clearly implied by the tariff's express terms."[538]

255. We find that MISO's accreditation proposal satisfies the rule of reason because the Tariff revisions, as revised in MISO's Deficiency Response, sufficiently detail the proposed DLOL accreditation methodology, including the specific steps MISO will follow to calculate Resource Class-level accreditation. As described above, in its Deficiency Response, MISO proposes to add the specific steps that MISO will follow to calculate Resource Class-level accreditation. Specifically, MISO describes how it will use effective margin and load forecast error to calculate weights for Critical Hours. In addition, MISO describes how it will apply the 1,950-hour cap prior to calculating and assigning hourly weights to each Critical Hour. Further, as described above, in its

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[534] *Cargill Power Mkts., LLC v. Pub. Serv. Co. of N.M.*, 132 FERC ¶ 61,079, at P 23 (2010) (explaining that the FPA "requires all practices that significantly affect rates, terms, and conditions of service to be on file with the Commission" so that customers have "proper notice" and "obtain services on a just and reasonable and not-unduly discriminatory basis").

[535] *Hecate*, 72 F.4th at 1314 (citing *City of Cleveland v. FERC*, 773 F.2d at 1376 (The FPA's "amorphous" requirement that tariffs include "practices affecting rates" means Commission has "broad discretion" in giving the FPA "concrete application.")).

[536] *Id.* at 1312.

[537] *See, e.g.*, *N.Y. Indep. Sys. Operator, Inc.*, 179 FERC ¶ 61,102 at P 108 (finding NYISO's marginal capacity accreditation approach to be consistent with the rule of reason because it "provides sufficient detail to define 'marginal reliability contribution,' and in addition sets forth the process for calculating the marginal capacity accreditation" (emphasis added)).

[538] *Hecate*, 72 F.4th at 1314 (citing *City of Cleveland v. FERC*, 773 F.2d at 1376).

Deficiency Response, MISO proposes to revise the definition of Resource Class to recognize the inclusion of fuel type, as well as operating characteristics, as a specific factor to be used in determining Resource Classes.

256. We decline to require MISO to include its LOLE model in its Tariff and find that MISO strikes the appropriate balance between providing sufficient detail in its Tariff and leaving implementation details to the BPMs. We agree with MISO that, although MISO proposes to place greater emphasis on the LOLE model to accredit resources through the identification of Critical Hours, MISO should not be required to include the LOLE model in the Tariff. MISO currently uses the LOLE model, without specific assumptions or even reference to Monte Carlo simulations included in the Tariff, to develop the LSEs' Reserve Requirements. We agree with MISO that the LOLE model is an implementation detail that MISO routinely reviews and revises through coordination with stakeholders, and that it would be unnecessarily burdensome to require MISO to include such detail in its Tariff. Moreover, we note that the Commission has not previously required any other RTO/ISO, including those using marginal ELCC accreditation methodologies, to include its respective LOLE model in its tariff.

9. Stakeholder Process

a. Comments and Protests

257. The Mississippi Commission argues that MISO's stakeholder process has turned into a check-the-box exercise, where MISO makes a presentation and requests feedback, stakeholders provide feedback, MISO responds to the feedback it chooses with generalized summaries, but MISO ultimately files whatever it wants because stakeholder opinions are advisory only. The Mississippi Commission asserts that MISO filings do not deserve deference from the Commission because MISO's stakeholder process is form-over-function.[539]

258. Public Interest Organizations contend that MISO's choice of a weighting methodology nearly erases the effect of including low margin hours (i.e., hours with positive margins of up to 3%), which runs contrary not only to the concerns of many stakeholders who argued for such inclusion, but to MISO's acknowledgment of those concerns and original decision to add low margin hours in the first place.[540]

259. Public Interest Organizations note that MISO introduced the concept of weighting Critical Hours two months before filing the instant proposal, which they characterize as very late in the policy development process, after which MISO held only one additional

[539] Mississippi Commission Protest at 10.

[540] Public Interest Organizations Protest at 25, 35.

stakeholder meeting and did not fully describe the new proposal to stakeholders until the filing was submitted.[541] Public Interest Organizations argue that MISO's lack of transparency is contrary to MISO's obligation to facilitate, and be responsive to, stakeholder inputs.[542]

260. Similarly, OMS notes that, when MISO first introduced its proposed weighting methodology for critical hours, stakeholders expressed concern that the proposed weighting methodology was introduced too close to MISO's intended filing date with the Commission.[543]

b. MISO June 7 Answer

261. MISO asserts that the Mississippi Commission's attacks on MISO's stakeholder process are unfounded and should be rejected. MISO notes that, in Order No. 719, the Commission outlined certain criteria intended to "balance customers' and other stakeholders' need for effective access to the boards of RTOs and ISOs, with the need for the independent management of each RTO and ISO."[544] MISO states that its proposed accreditation methodology is based on robust stakeholder discussions over the last two years. MISO contends that stakeholder discussion and feedback played a substantial role in shaping the design of the proposed accreditation reforms, and MISO significantly evolved its proposal in response to well-founded stakeholder comments and concerns. MISO asserts that the fact that it has not implemented each of the Mississippi Commission's demands is not a failure of the stakeholder process but, rather, evidences the diversity of viewpoints that MISO balanced in drafting, refining, and submitting the ultimate proposal.[545]

262. In response to Public Interest Organizations' and OMS's arguments, MISO states that, while the weights and caps were introduced later in the design process, the addition was a direct result of the stakeholder process.[546] MISO also asserts that the timing of the

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[541] *Id.* at 25, 40-41.

[542] *Id.* at 42 (citing 18 C.F.R. § 35.28(g)(6) (2024)).

[543] OMS Comments at 9.

[544] MISO June 7 Answer at 34 (citing *Wholesale Competition in Regions with Organized Elec. Mkts.*, 125 FERC ¶ 61,071, at P 505 (2008)).

[545] *Id.* at 33-36.

[546] *Id.* at 24.

introduction of these elements of the proposal does not impact their justness and reasonableness.

c. Answers to MISO's June 7 Answer

263. Public Interest Organizations state that the development of the weighting methodology requires clarification because MISO seems to imply broad stakeholder support even though several stakeholders did not suggest applying weights to the Critical Hours.[547]

d. MISO July 9 Answer

264. In response to Public Interest Organizations' arguments that MISO misrepresented the stakeholder process, MISO states that its transmittal and June 7 Answer neither misrepresent nor imply broad stakeholder support for the weighting methodology.[548] MISO contends that its transmittal simply acknowledges that the weight and cap components were introduced later in the stakeholder process and that they were the direct result of stakeholder engagement.[549]

e. Commission Determination

265. Regarding protests concerning MISO's stakeholder process, we find that MISO's proposal was submitted consistent with the Tariff, which recognizes MISO's right to unilaterally submit FPA section 205 filings.[550] However, we note that MISO has worked with stakeholders on the instant proposal for several years, holding numerous meetings since at least January 2022. Additionally, we note MISO's commitment to working with stakeholders to assist them in understanding how the change in accreditation methodology will impact their resources and to continuing stakeholder discussions about potential further enhancements in resource adequacy going forward, including stakeholder requests for increased data accessibility and transparency, while preserving the confidential nature of certain underlying data, and discussions on MISO's ongoing efforts to enhance its probabilistic modeling.[551]

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[547] Public Interest Organizations Answer at 5.

[548] MISO July 9 Answer at 12-14.

[549] *Id.* at 13-14.

[550] MISO, FERC Electric Tariff, Module A, § 9 (30.0.0).

[551] Transmittal at 5.

The Commission orders:

MISO's proposed Tariff revisions are hereby accepted, effective September 1, 2024, as requested, as discussed in the body of this order.

By the Commission. Commissioner Chang is not participating.

(S E A L)

Debbie-Anne A. Reese,
Secretary.

Appendix – eTariff Records

Docket No. ER24-1638-000

- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, 1.S, Definitions - S (77.0.0).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, 1.U, Definitions - U (41.0.0).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, 68A.2.1, Loss of Load Expectation Analysis (35.0.0).
- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, SCHEDULE 53A, Extended Seasonal Accredited Capacity Calculation (31.0.0).

Docket No. ER24-1638-001

- Midcontinent Independent System Operator, Inc., FERC Electric Tariff, SCHEDULE 53A, Extended Seasonal Accredited Capacity Calculation (32.0.0).

Document Content(s)

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